LIST OF APPENDICES

Table of Contents

This page intentionally left blank.

APPENDIX A
DESERT TORTOISE TRANSLOCATION PLANS

This page intentionally left blank.

APPENDIX A-1
ADDENDUM TO THE TRANSLOCATION PLANS

This page intentionally left blank.

Addendum to the Translocation Plans

In general, the No-Action Alterative, Alternative 1, and Alternative 2 would implement the desert tortoise translocation as described in the 2011 General Translocation Plan (GTP), March 2016 Translocation Plan, and the June 2016 Translocation Plan, respectively. However there are several instances where the alternatives described in Chapter 2 of the Supplemental Environmental Impact Statement differ from the translocation plans provided in this appendix. These differences are due to errata in the original translocation plans or changes in project design due to new information. Table A-1 provides a list of these differences for each alternative and a reason for the changes.

Table A-1. Changes to the No-Action Alternative and Alternatives 1 and 2

Change to Alternative	Related text in Translocation Plan	Reason for Change
No-Action Alternative		
The areas of Ord-Rodman-combined recipient areas is corrected from 19,199 acres (77.7 km^2) to 23,475 acres (95.0 km^2). Total area for Proposed Recipient Areas corrected from 37855.5 acres (153.2 km^2) to 42,269 acres (171.1 km^2).	2011 GTP, Page 20, Table 4; Page 32, Table 7.	Erratum: area correction.
Total area for Proposed Recipient Areas corrected from "approximately 153 km^2 (59 mi^2 or 37,855 acres)" to "approximately 171 km^2 (59 mi^2 or 42,269 acres)."	2011 GTP, Page 20, Line 1.	Erratum: area correction.
Clearance surveys for tortoises and nests were conducted from September 2014 through October 2015 inside the designated medium- and high-intensity MEB operating areas in the WEA and SEA. All tortoises of adequate size were transmittered; juvenile tortoises too small to wear transmitters were moved to new holding pens at MCAGCC Natural Resources and Environmental Affairs TRACRS and these juvenile tortoises would be part of headstarting. A tortoise survey of recipient and control sites was also conducted in fall 2015.	2011 GTP, Pages 44-45, Section 3.2.2, *Clearance Surveys in the Acquisition Areas*.	Updated based on 2014 and 2015 clearance surveys; surveys were conducted as described in Section 3.2.2 of the 2011 GTP.
No change to the No-Action Alternative.	2011 GTP, Page 31, Line 2.	Erratum: correct text to read "…post-translocation maximum of 5.55 per km^2…"
No change to the No-Action Alternative.	2011 GTP, Page 32, Table 7.	Erratum: Area for the Sunshine Peak Training Area corrected 60.5 km^2 to 15km^2.
The land uses and associated conservation areas associated with the No-Action Alternative recipient and control areas (Table 3.1-4) were updated to be consistent with current conditions (i.e., since 2011) and the September 2016 ROD for the DRECP.	2011 GTP, text throughout plan.	Updated to be consistent with current conditions and the September 2016 ROD for the DRECP.

Table A-1. Changes to the No-Action Alternative and Alternatives 1 and 2 (continued)

Alternative 1		
Change to Alternative	**Related text in Translocation Plan**	**Reason for Change**
Remove Rodman from list of Control Sites and correct number of control tortoises for Cleghorn Control and Bullion Control from 20 to 25.	March 2016 Translocation Plan, Page 29, Table 7.	Erratum: Control Site correction.
No change to Alternative 1.	March 2016 Translocation Plan, Page 29, Table 6.	Erratum: The total "# Adults to Translocate" should be corrected from 443 to 998.
Percent change in densities revised in Section 2.2.4.1.	March 2016 Translocation Plan, Page 29, Table 6.	Errata: Density Increase: Lucerne-Ord: from 53% to 57% Rodman-Sunshine Peak North: from 37% to 36% Siberia: from 71% to 82% Broadwell: from 18% to 22% Cleghorn Recipient (constrained): from 100% to 85% Bullion Recipient: no change
The size of the Siberia recipient site has been modified in Tables 2.2-1 and 2.2-3 to represent 62% of the original 15,765 acre site that has a habitat suitability index of 0.6 or greater.	March 2016 Translocation Plan, Page 9, Table 2.	Updated because recent site visits found that substantial portions of the Siberia recipient site have been scoured by natural flooding, patchily affecting habitat value in the site.
Analysis to support translocation has been completed. Final conclusions in the SEIS are consistent with initial results reported in the March 2016 Translocation Plan.	March 2016 Translocation Plan, Page 14, Table 4 and elsewhere.	Updated because text in the March 2016 Translocation Plan indicates additional analysis is to be performed (e.g., Table 4 states "Incidence of disease, canid trauma, and mortality rates include substantial data collected in Fall 2015 that are not yet fully analyzed... Raven survey information is incomplete because surveys were expanded after the nesting season in 2015 to accommodate several new sites.").
The Rodman-Sunshine Peak South control site under Alternative 1 has been updated to no longer include the small area of the Johnson Valley OHV Recreation Area located north of the WEA.	March 2016 Translocation Plan: Page 13, Table 3; Page 19, Section 3.3.2, *Other Control Sites*; and Figures 2a and 3b.	Updated to avoid overlap of the Control Site with the Johnson Valley OHV Recreation Area.
Release areas in Broadwell recipient area were adjusted to avoid affecting the Cady Mountains Wilderness Study Area (one release area eliminated and one release area moved to the south to be further away from Wilderness Study Area boundary).	March 2016 Translocation Plan, Figures 2a and 3d.	Updated to avoid impacts from use of transmitters in the Wilderness Study Area.
The SEIS has been updated to incorporate the land uses and conservation measures identified in the September 2016 ROD for the DRECP.	March 2016 Translocation Plan, Pages11-21, Section 3.3, *Descriptions of the Recipient and Control Sites.*	Updated to be consistent with the September 2016 ROD for the DRECP.

Table A-1. Changes to the No-Action Alternative and Alternatives 1 and 2 (continued)

Alternative 1 (continued)		
Change to Alternative	**Related text in Translocation Plan**	**Reason for Change**
Mark-recapture plots are no longer being considered in the Cleghorn Lakes Wilderness Area, based on the BLM's Minimum Requirements Analysis.	March 2016 Translocation Plan, Figures 3e and 3f.	Updated to avoid impacts to the Cleghorn Lakes Wilderness Area based on BLM's Minimum Requirements Analysis.
Alternative 2		
Size and distance from recipient site for the Bullion Control has been corrected to 2,136 acres (8.6 km^2) and 4.3 miles (6.9 km), respectively in Table 2.3-1 of the SEIS.	June 2016 Translocation Plan, Page 11, Table 2.	Errata; correct the size and distance from recipient site for the Bullion Control (12 km and 15.7 km^2, respectively in Table 2).
The Bullion control site (Figure 2.3-2) would be located on the Combat Center in the SUA immediately north of Cleghorn Lakes Wilderness Area (instead of in the northwest portion of the Cleghorn Lakes Wilderness Area under Alternative 1).	June 2016 Translocation Plan, Page 14, Table 3; Figures 2b and 3f.	Errata; correct the location of the Bullion Control (identified as being "Entirely in Cleghorn Wilderness" in Table 3); Figures 2b and 3f depict incorrect location of Bullion Control and show old Bullion Recipient Site.
The size of the Siberia recipient site has been modified in Table 2.3-1 to represent 62% of the original 15,765 acre site that has a habitat suitability index of 0.6 or greater.	June 2016 Translocation Plan, Page 10, Table 2.	Updated because recent site visits found that substantial portions of the Siberia recipient site have been scoured by natural flooding, patchily affecting habitat value in the site
Translocation Densities in Table 2.2-3 of the SEIS have been updated based on changes in size of Siberia recipient site.	June 2016 Translocation Plan, Page 29, Table 6.	Updated based on change in size of Siberia recipient site.
Translocatees and Post-Translocation Densities revised in Table 2.3-2.	June 2016 Translocation Plan, Page 29, Table 6.	Errata: Translocatees: Lucerne-Ord: from 448 to 447 Rodman-Sunshine Peak North: from 316 to 341 Siberia: from 182 to 155 Broadwell: from 19 to 18 Cleghorn Recipient (constrained): from 32 to 37 Post-Translocation Densities: Lucerne-Ord: from 8 to 8.1 Rodman-Sunshine Peak North: from 8 to 8.1 Siberia: no change Broadwell: no change Cleghorn Recipient (constrained): from 10.5 to 10.4
Analysis to support translocation has been completed. Final conclusions in the SEIS are consistent with initial results reported in the June 2016 Translocation Plan.	June 2016 Translocation Plan, Page 15, Table 4 and elsewhere.	Updated because text in the March 2016 Translocation Plan indicates additional analysis is to be performed (e.g., Table 4 states "Incidence of disease, canid trauma, and mortality rates include substantial data collected in Fall 2015 that are not yet fully analyzed... Raven survey information is incomplete because surveys were expanded after the nesting season in 2015 to accommodate several new sites.").

Table A-1. Changes to the No-Action Alternative and Alternatives 1 and 2 (continued)

Alternative 2 (continued)		
Change to Alternative	**Related text in Translocation Plan**	**Reason for Change**
The Rodman-Sunshine Peak South control site under Alternatives 2 has been updated to no longer include the small area of the Johnson Valley OHV Recreation Area located north of the WEA.	June 2016 Translocation Plan: Page 14, Table 3; Page 20, Section 3.3.2, *Other Control Sites*; and Figures 2a and 3b.	Updated to avoid overlap of the Control Site with the Johnson Valley OHV Recreation Area
Release areas in Broadwell recipient area were adjusted to avoid affecting the Cady Mountains Wilderness Study Area (one release area eliminated and one release area moved to the south to be further away from Wilderness Study Area boundary).	June 2016 Translocation Plan, Figures 2a and 3d.	Updated to avoid impacts from use of transmitters in the Wilderness Study Area.
The SEIS has been updated to incorporate the land uses and conservation measures identified in the September 2016 ROD for the DRECP.	June 2016 Translocation Plan, Pages12-22, Section 3.3, *Descriptions of the Recipient and Control Sites.*	Updated to be consistent with the September 2016 ROD for the DRECP.
Mark-recapture plots are no longer being considered in the Cleghorn Lakes Wilderness Area, based on the BLM's Minimum Requirements Analysis.	June 2016 Translocation Plan, Figures 3e and 3f.	Updated to avoid impacts to the Cleghorn Lakes Wilderness Area based on BLM's Minimum Requirements Analysis.

APPENDIX A-2
2011 GENERAL TRANSLOCATION PLAN

This page intentionally left blank.

UNITED STATES MARINE CORPS
LAND ACQUISITION AND AIRSPACE ESTABLISHMENT

GENERAL TRANSLOCATION PLAN FOR DESERT TORTOISES

Prepared for:

Natural Resources and Environmental Affairs Division,
Marine Corps Air Ground Combat Center

Prepared by:

Alice E. Karl, Ph.D.
P.O. Box 74006
Davis, California 95617

and

Brian T. Henen, Ph.D.
MAGTFTC NREA, MCAGCC
Twentynine Palms, CA 92278-8110

December 8, 2011

TABLE OF CONTENTS

List of Figures

List of Tables

UNITED STATES MARINE CORPS LAND ACQUISITION AND AIRSPACE ESTABLISHMENT

GENERAL TRANSLOCATION PLAN FOR DESERT TORTOISES

1.0 INTRODUCTION

1.1 BACKGROUND

The Marine Corps Air Ground Combat Center at Twentynine Palms, California (the "Combat Center") is a unique Marine Corps training installation that provides a realistic battlefield environment for live-fire maneuvers. A large-scale Marine Air Ground Task Force (MAGTF) training area would include areas on the existing Combat Center as well as additional lands west and south of the Combat Center, known as the West Study Area (WSA) and the South Study Area (SSA), respectively. Associated training would enable Marine Expeditionary Brigade (MEB)-level training exercises, involving large-scale, integrated, live-fire maneuvers. MEB training exercises and supporting activities are detailed in the *Biological Assessment for the Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training* (BA; Department of the Navy [Navy] 2011a) and, in summary, would include:

- MEB Work-up and Final training exercises involving air-ground maneuvers in the expanded training area. These would occur twice annually for a total of 48 days per year, plus 12 days of clean-up. Each would involve approximately up to 15,000 Marines, 1,786 wheeled and tracked vehicles, and 1,657 aircraft sorties (Figures 1 and 2). MEB Work-up Exercises would occur during the first 17 days of each MEB exercise, and involve individual battalion task forces taking turns conducting recurring evolutions of fire support and ground/air integration training. In the MEB Final Exercises, three battalion task forces would work abreast from separate maneuver points to converge on a single MEB objective in the western portion of the WSA (Figure 3) over 48 to 72 hours of continuous offensive operations. These battalion task forces would move in an east-to-west fashion, with two task forces assembling on the eastern portion of the Combat Center and one task force readying in the SSA.

- When MEB Work-up and Final training exercises are not occurring, MEB Building Block training exercises will occur in the WSA. These MEB Building Block training exercises would consist of four-day training evolutions, which would be repeated weekly throughout the year whenever MEB Exercises are not being conducted (an average of approximately 40 weeks or 160 days each year). These exercises would include combined arms and live-fire and maneuver with

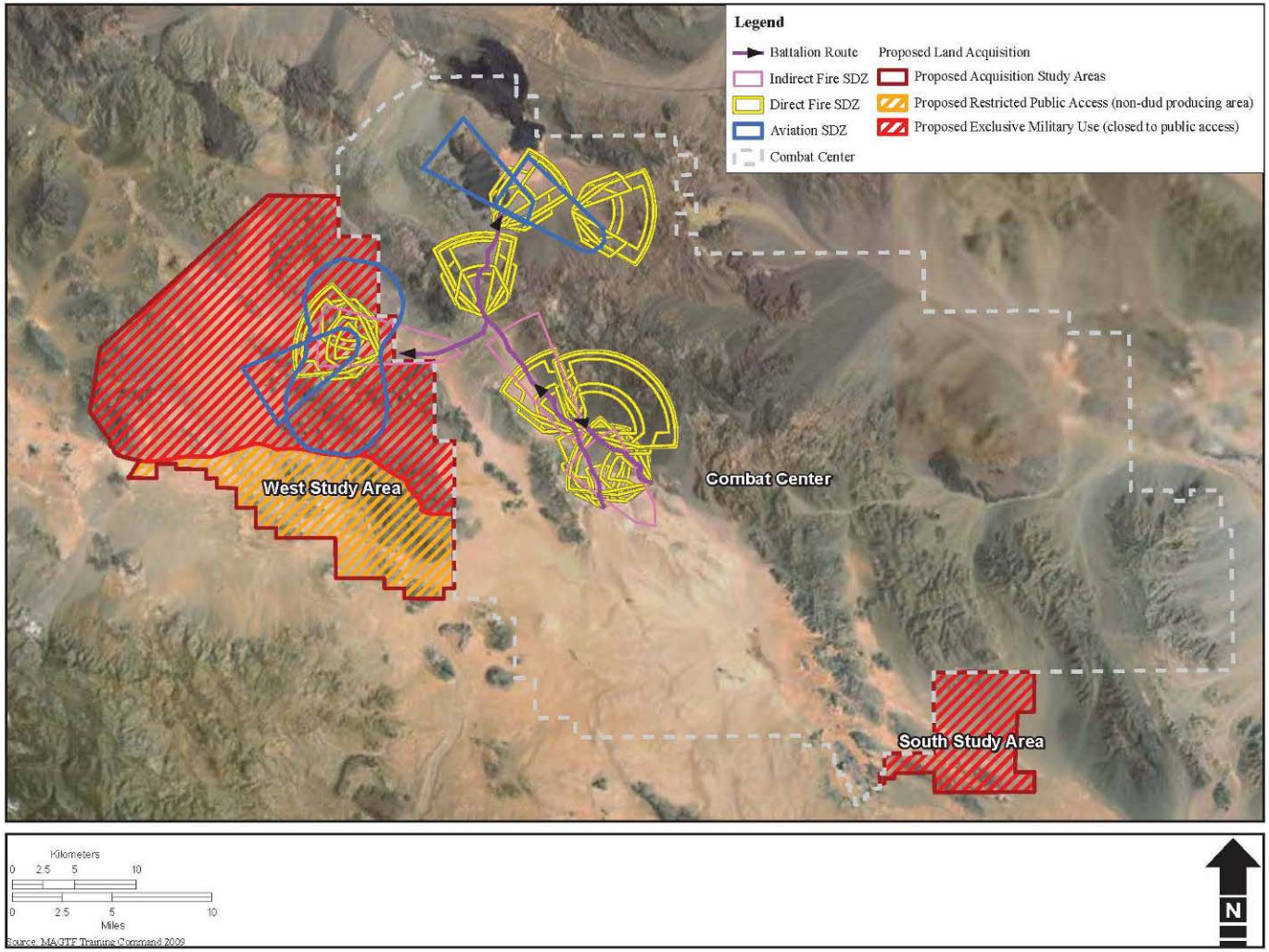


Figure 1. Representative MEB Exercise Work-up training scenario (Source: Navy 2011a)

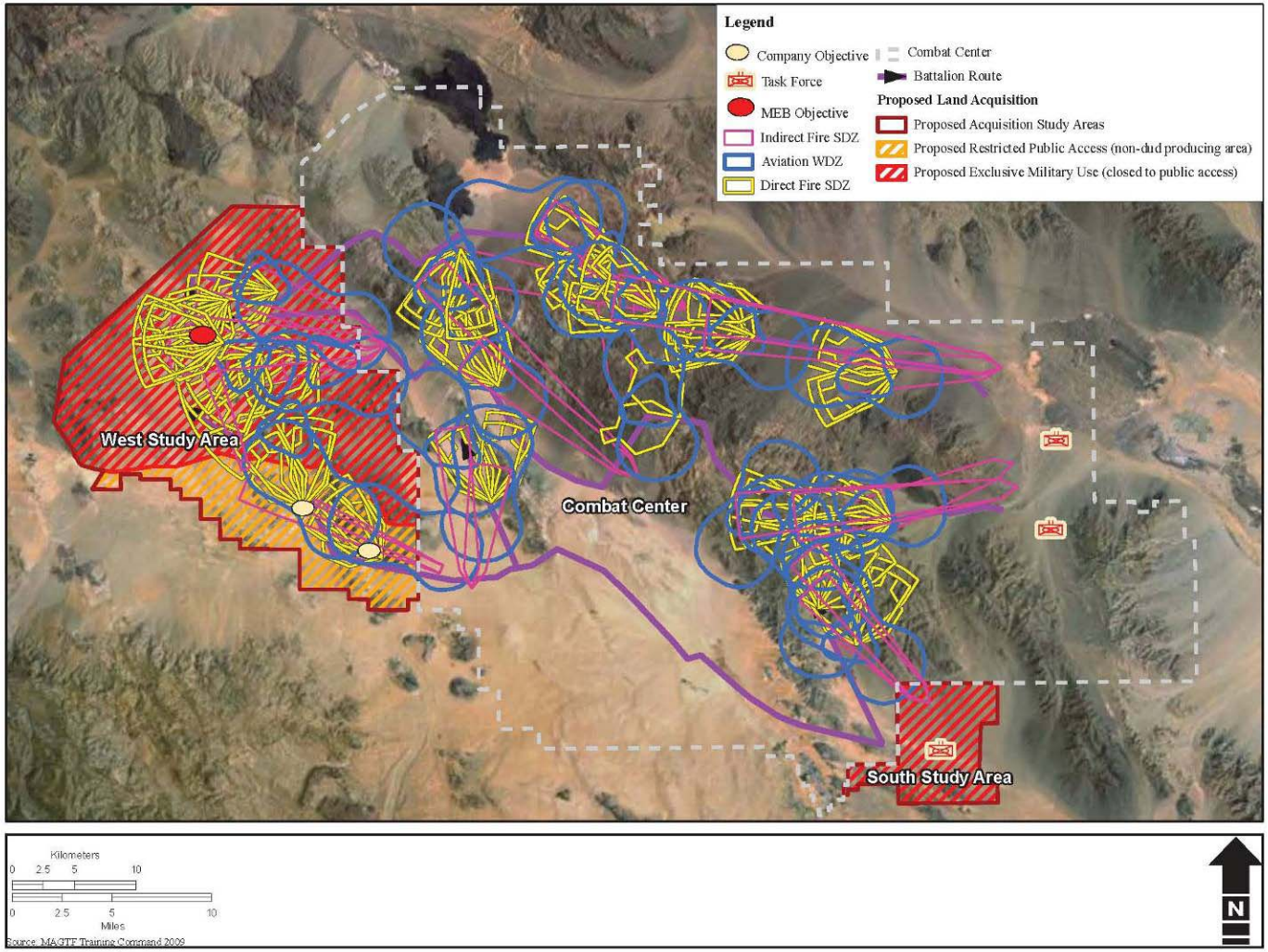


Figure 2. Representative MEB Final Exercise scenario. (Source: Navy 2011a)

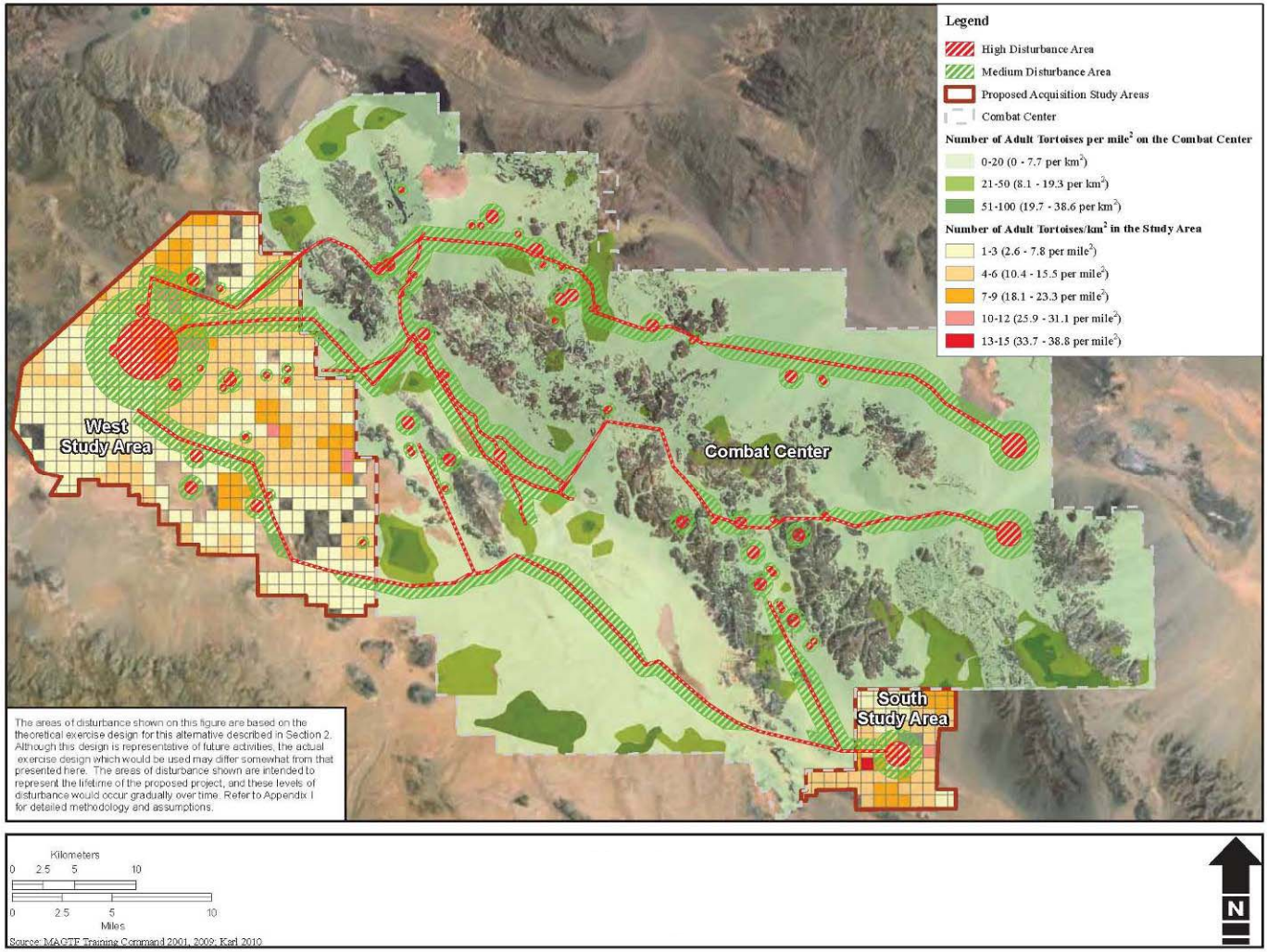


Figure 3. Estimated disturbance to desert tortoise habitat under the proposed action. (Source: Navy 2011a)

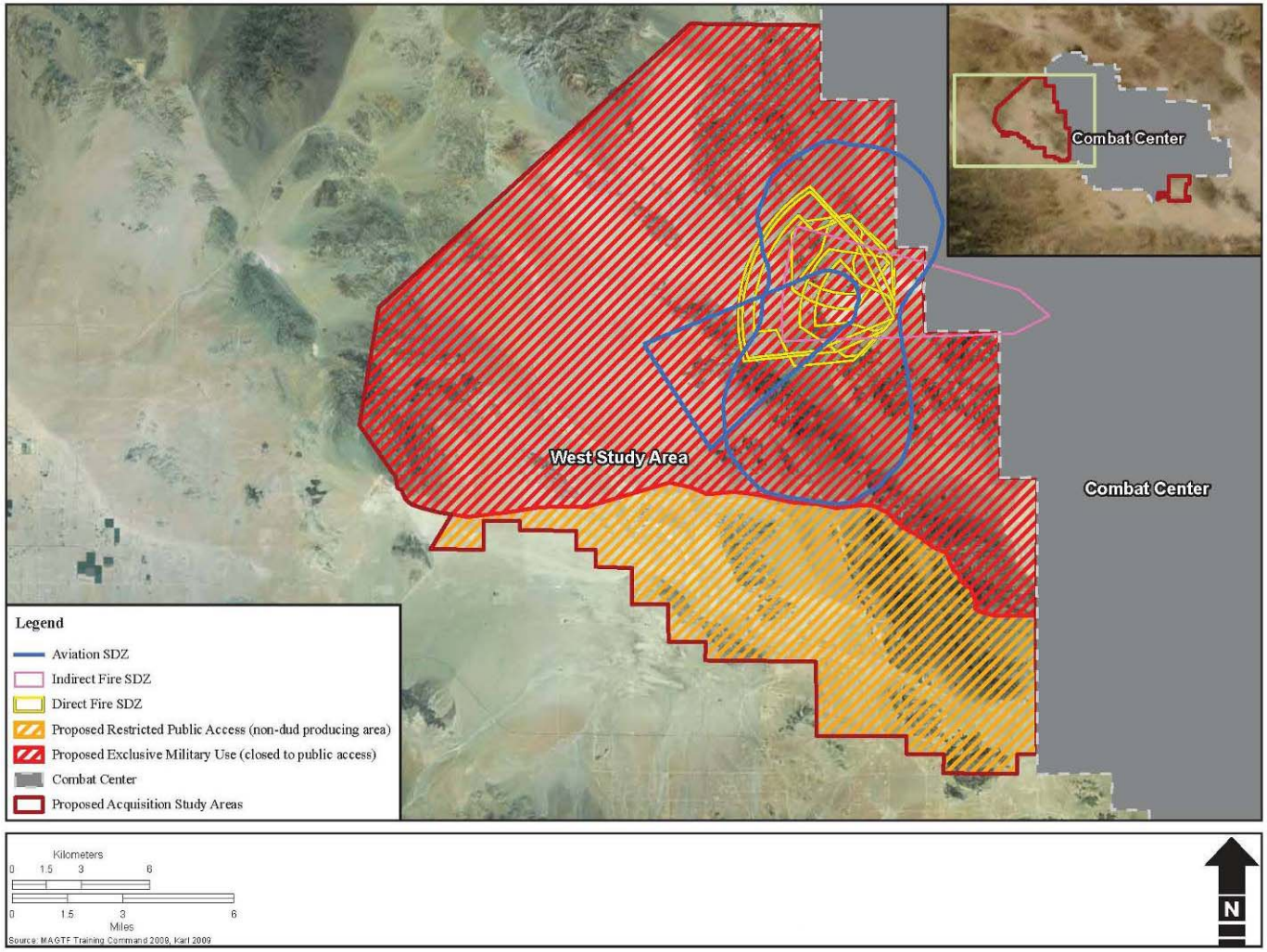


Figure 4. Footprint for MEB Building Block training exercises. (Source: Navy 2011a)

air support but the operational footprint for these MEB Building Block training activities would be much smaller than the full MEB Exercise (Figure 4).

- Each MEB Building Block training exercise would involve approximately 2,000 Marines, 276 wheeled and tracked vehicles, and 56 aircraft sorties.

- Support and staging areas would be set in the training areas, typically along battalion task force routes, and would contain ammunition, supplies, fuel, maintenance, mess, and other logistical support as well as medical evacuation units, special engineer units, and other "on-call" support for training exercises. These areas would potentially change from exercise to exercise depending on training requirements resulting in new areas of disturbance; however, many of the support and staging areas would be re-used.

- Maintenance personnel would use public roads to access certain training areas in the WSA for target resets and route maintenance, including explosive ordnance disposal (EOD), for the duration of MEB Exercise training. This would require, on average, two maintenance vehicles and occasionally a tractor trailer, at a maximum of 10 days per MEB exercise, for a total of 20 days per year.

The BA (Navy 2011a) identified that Agassiz's desert tortoise (*Gopherus agassizii*), a federally and state- listed threatened species, is likely to be adversely affected by the proposed land acquisition and airspace establishment action. Several conservation actions were recommended in the BA, among them a plan to translocate tortoises from high & medium impact areas in the WSA and SSA prior to training exercises. These impact areas were evaluated in the BA for MEB Work-up, Final and Building Block exercises and are displayed in Figure 3. High-intensity battle activity (i.e., that likely to result in high-intensity disturbance) would occur in the more level, gently sloping terrain of the project area. While steeper and rockier areas likely would be subject to less disturbance (typically medium- or low-intensity disturbance), certain vehicles and equipment would be used to fight from covered terrain, such as rocks and reverse slopes of hills that provide cover. Wheeled re-supply and other vehicles would regularly use the Main Supply Routes (MSRs) in the project area during training.

The BA (Navy 2011a) estimated that extensive soil loss and/ or compaction would occur over the 12,209 hectares (30,169 acres) that would experience high-intensity disturbance from MEB exercises and MEB Building Block training, and some soil loss would also occur over the 41,029 ha (101,383 ac) that would experience medium-intensity disturbance from this training. Vegetation necessary for desert tortoise habitat would be expected to be severely degraded or lost in high intensity use areas; and degraded, if not lost, in medium-intensity use areas. The proposed action is anticipated to result in major degradation (i.e., complete or nearly complete loss of vegetation and disruption of substrates) of an estimated 4,273 ha (10,559 ac) of occupied desert tortoise habitat in the high-intensity disturbance zone of the study areas. MEB training and MEB Building Block training would also result in a lesser degree of degradation of an estimated 39,067

ha (96,537 ac) of occupied desert tortoise habitat in the medium-intensity training disturbance zone of the project area. For the WSA, roughly half of the area that would be disturbed has already been disturbed by Off Highway Vehicle (OHV) use (Karl 2010b).

MEB training for 50 years is not compatible with the continued existence of desert tortoises in the high and medium intensity areas. If not translocated, an estimated 1105 adult tortoises and potentially 2100 juveniles would be lost from these zones of the WSA and SSA due to the intensity of training exercises (Navy 2011a). Such a loss of tortoises and tortoise habitat is not compatible with recovery of this threatened species (Navy 2011a). Not only do these numbers represent 34% and 23%, respectively, of the adult and juvenile tortoises currently living in the local population, but a loss of this magnitude would be highly likely to have a negative impact on species recovery. Tortoise populations have declined severely throughout their geographic range in the past two decades (Karl 2004 and 2010c, McLuckie et al. 2006, Boarman et al. 2008, USFWS 2011a). A 20+-year range-wide drought, disease, long-term habitat degradation, predation, stochastic processes, population fragmentation, and habitat loss are factors that, working alone or together, are consistently cited as having contributed to observed tortoise declines. In the project area, tortoise declines have been documented on the Emerson Lake and Sand Hill training ranges adjacent to the WSA. The Sand Hill permanent study plot (Plot #2) plot declined from 37.8 to 10.4 tortoises/km^2 (98 to 27 tortoises/mi^2) between 1991and 2008 (Kiva 2008). Numbers of live tortoises at the Emerson Lake Plot declined from consistent levels of 15 to 20 tortoises/km^2 on three surveys between 1997 and 2003 to 3.0 tortoises/km^2 in 2009 (Kiva 2009). The 2003 estimate, for instance, was16.3 $\pm$ 3.0, significantly higher than the 2009 estimate of 3.0 $\pm$ 0.0 So, given the widespread and local consistent and extreme declines in tortoise densities, further losses of over 1000 breeding age tortoises and 2000 smaller tortoises would further compromise species recovery.

In addition, the intensive degradation of over 43,000 ha (100,000 ac) would eliminate that habitat and/or leave it in sufficiently poor quality to render it largely unusable to tortoises. Any surviving tortoises from those areas would need to re-locate to areas with intact habitat that could support them. Since the areas slated for maneuvers in the WSA are in multiple places, tortoises dispersing from the MEB disturbance zones could move into equally dangerous areas. Actively translocating these tortoises to designated locations with suitable habitat, which is also safe from further anthropogenic degradation, would optimize dispersal.

Translocation, then, is necessary to support the continued existence of this population by maintaining tortoise abundance and genetic integrity. During this process, long-term monitoring of the translocation efforts for this large cohort of tortoises will provide valuable information on translocation efficacy as a tool for species recovery. Studies that can be conducted ancillary to, but as a result of the translocation, will provide important information for recovery methods. Such monitoring and studies are consistent with strategies outlined in the revised desert tortoise Recovery Plan (USFWS 2011a). In particular, the translocation of tortoises to areas with depressed or depleted populations, in an experimental context, is consistent with Recovery Plan Strategic Element 3.

Monitoring survival, disease, habitat and threats in the study cohorts, particularly the control group, is consistent with Strategic Element 4. Conducting research on translocation effectiveness, repatriation, stocking densities, habitat and disease are consistent with Strategic Element 5.

1.2 PURPOSE OF THE PLAN

The translocation plan presented herein is the first in a set of two translocation plans for the project. This is the initial, General Translocation Plan, which will be followed by a Final Translocation Plan in 2014. The purpose of this General Translocation Plan is to provide a framework for translocating tortoises from the training areas in the WSA and SSA, and an approach for further investigation of those factors that are important for implementing translocation and are likely to influence translocation success and tortoise recovery. As much as is currently possible, the plan identifies anticipated details of translocation, based on (1) information in the BA (Navy 2011a) and Environmental Impact Statement (Navy 2011b) about project activities, and (2) available information on the conditions in those areas involved in the translocation program (recipient and control areas). Also included is an approach for collecting further data in the next three years that will provide more detailed information than is currently available. The Final Translocation Plan for the project will incorporate these additional data and analyses, as well as collaboration with the resource agencies, and represent a final refinement of the translocation program.

This plan incorporates comments and direction from informal discussions with USFWS on 28 November 2011 and earlier, as well as changes reflected in the most recent USFWS translocation guidance ("Guidance"; USFWS 2011b). Except where superseded by informal discussion with USFWS, this Plan relies on formal guidelines from the 2011 guidance document and the 2009 guidelines (USFWS 2009b). Relevant newer guidance will be incorporated into the Final Translocation Plan as it becomes available from USFWS.

1.3 STRUCTURE OF THE PLAN

T his plan first describes (a) the impact areas from which tortoises will be translocated, (b) the proposed and alternative recipient areas that will receive the translocated tortoises, and (c) the control areas that will be used as temporal and spatial controls for scientifically rigorous comparisons during translocation monitoring and research. Following this, effectiveness monitoring and proposed research is discussed. Finally, the details associated with the process of translocation will be described. These will include general procedures applicable to all tortoise translocations, such as data collected on all tortoises, tortoise transportation, authorized handlers, and reporting. Specific translocation procedures then will be discussed.

The reader is advised that this Plan is for desert tortoise clearance and translocation only. Other conservation measures are included in the BA (Navy 2011a).

2.0 MAJOR CONSIDERATIONS FOR TRANSLOCATING DESERT TORTOISES FROM THE LAND ACQUISITION AREA

This section discusses the major considerations relative to the areas where tortoises will be affected: (a) impact areas; (b) the recipient areas; and (c) control areas. Descriptions and analyses of each area, relevant to desert tortoises and the implications of translocation, are discussed. Baseline (pre-translocation) studies that will refine our current knowledge of these areas are described. Programs for both translocation effectiveness monitoring and specific research topics are summarized.

2.1 IMPACT AREAS

This section describes tortoise abundance in the areas that will be impacted in the WSA and SSA and the number of those tortoises that are projected to require translocation. Features of the impact areas that affect current tortoise densities – habitat, disease incidence, protected areas, impacts and threats – are described based on available information.

2.1.1 Tortoise Density and the Number of Tortoises to be Translocated

In the most recent survey (2009), tortoise density estimates in the WSA and SSA ranged from 0 to 13.6 adult tortoises per km^2, although densities over most of the study area were <9 tortoises per km^2 (Figures 5 and 6; Karl 2010a). Less than 3% of the WSA and SSA had more than 9 tortoises per km^2. The portion of the WSA associated with the proposed project contained between 1,563 and 2,528 tortoises using the Tortoise Regional Estimate of Density (TRED) model (Karl 2002) and between 1,442 and 5,670 tortoises using the USFWS protocol (Table 1).

Table 1. Abundance of Desert Tortoises in the West and South Study Areas in 2009. (Source: Navy 2011a)

Study Area	*km² in Study Area*	*km² Sampled*	*Linear km Walked*	*Total Number of Adult Tortoises (Point Estimate and 95% Confidence Intervals)*					
				TRED Model Survey			*USFWS Protocol Survey*		
				Point Estimate	*Lower CI*	*Upper CI*	*Point Estimate*	*Lower CI*	*Upper CI*
West	593.5	171	1641	2045.5	1562.6	2528.4	2,859.6	1,442.2	5,669.9
South	86.21	25	240	369.3	305.3	433.4	355.5	134.4	940.6

Notes: Estimates from use of a TRED Model survey (Karl 2002) and USFWS (2009a) protocol survey are depicted.

Source: Karl (2010a).

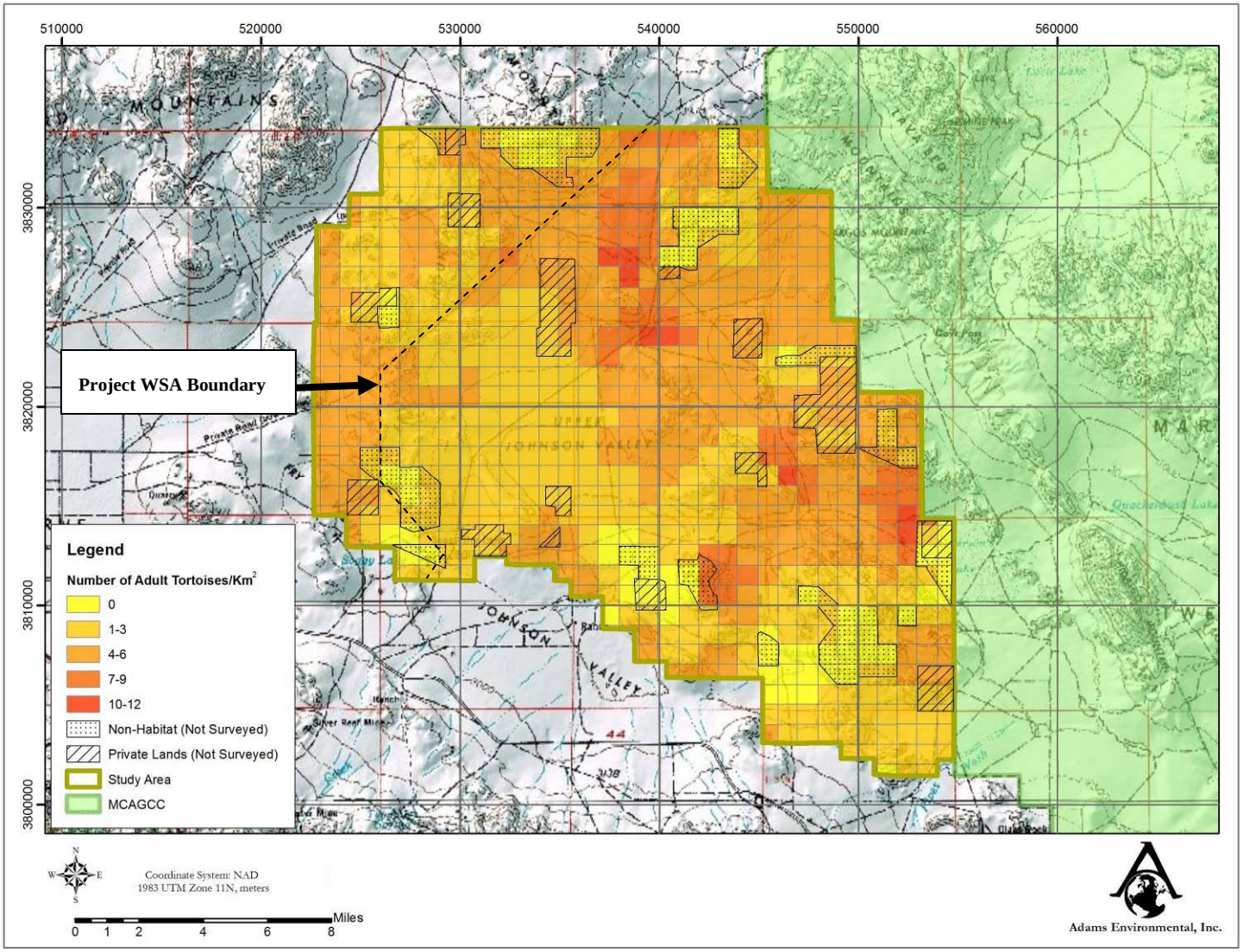


Figure 5. Density of adult tortoises in the WSA in 2009. Note the new WSA border (see Navy 2011a) compared to the 2009 study area. (Source: Karl 2010a).

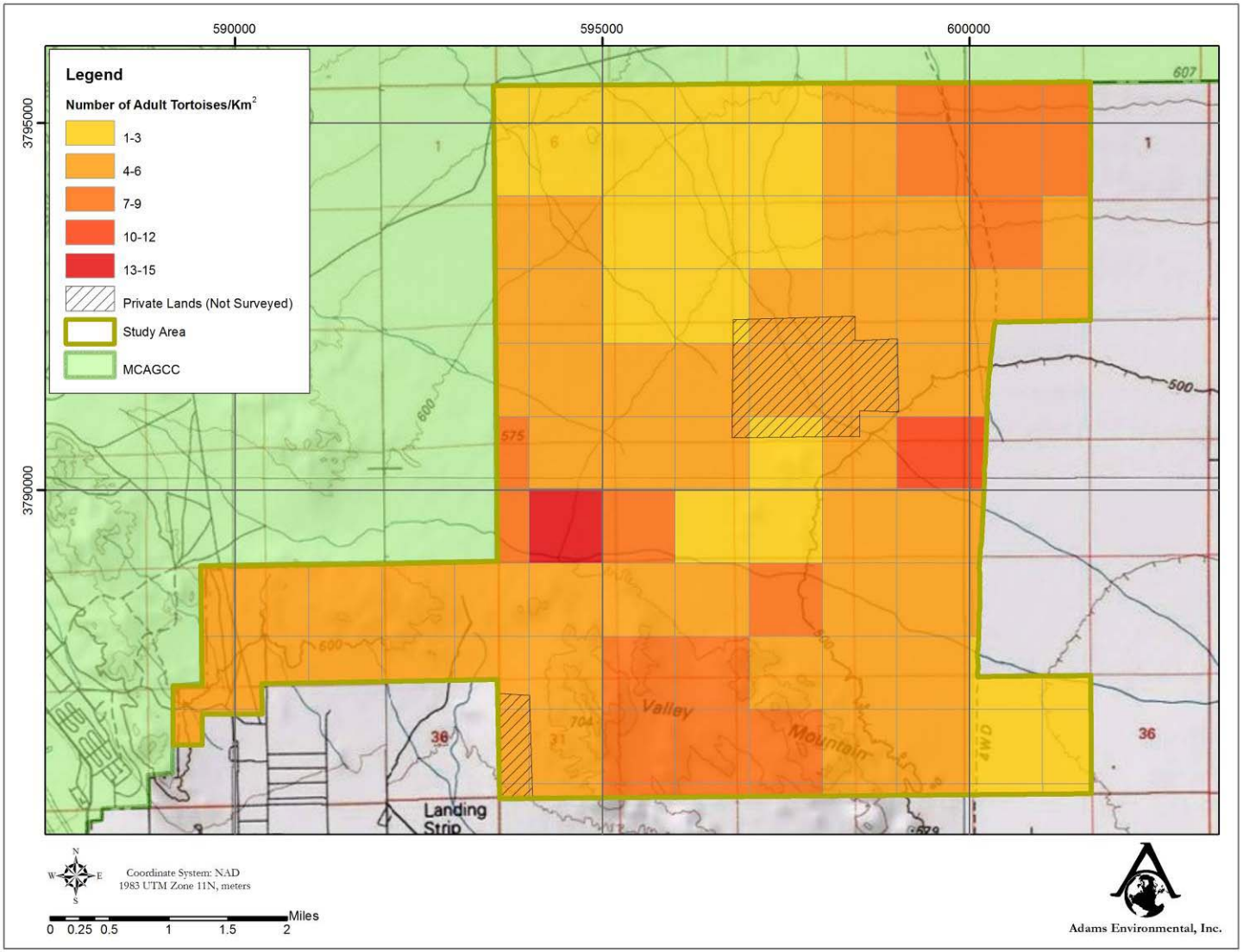


Figure 6. Density of adult tortoises in the SSA in 2009. (Source: Karl 2010a)

Based on the assumptions and methodology described in Appendix C of the BA (Navy 2011a) and using the approved USFWS pre-project protocol method (USFWS 2009a), an estimated 1,105 (95% C.I. 544 – 2,262) adult tortoises[1] in the study areas may be translocated, injured, or killed over the estimated 50-year life of the proposed action (Table 2). Potentially 2100 juvenile may be translocated (Navy 2011a).

Because the features describing high and medium impacts are two to ten kilometers wide, and fencing that would keep tortoises from re-entering the impact areas is not currently proposed, it is anticipated that no tortoise will be moved ≤500 m from its capture point. All tortoises will be moved to well-defined recipient sites that are substantially further from their capture location. It is currently anticipated that none will be moved >40 km, in accordance with USFWS *Guidance* (USFWS 2011b); however, during development of the Final Translocation Plan and further discussions with USFWS, it is possible that some recipient sites will be >40 km from certain individual tortoises.

Table 2. Estimated Number (95% CI) of Adult Tortoises within High- and Medium- Disturbance Zones Under the Proposed Action (Source: Navy 2011a)

Study Area	*Number of Adult Tortoises in High Disturbance Zone*		*Number of Adult Tortoises in Medium Disturbance Zone*	
	TRED Model Survey	*USFWS Protocol (2009a)*	*TRED Model Survey*	*USFWS Protocol (2009a)*
West Study Area	173 (132 – 214)	276 (139 - 547)	433 (325 – 543)	724 (365 – 1436)
South Study Area	14 (10 – 18)	26 (10 - 70)	48 (36 - 59)	79 (30 - 209)
Subtotal for Study Areas	*187* *(142 – 232)*	*302* *(149 - 617)*	*481* *(361 - 602)*	*803* *(395 – 1,645)*
Combat Center	312 (23 – 602)	312 (23 – 602)	1,226 (119 – 2,333)	1,226 (119 – 2,333)
Total	**499** **(165 – 834)**	**614** **(172 – 1,219)**	**1,707** **(480 – 2,935)**	**2,029** **(514 – 3,978)**

Note: Values calculated based on desert tortoise density estimates, using GIS overlay of proposed routes of travel, areas of expected ordnance impact, and other factors. Subtotals may not match the components due to rounding. Estimated tortoise abundance in the impacted portions of the study areas uses data from the TRED model survey (Karl 2010a) and the USFWS model survey (USFWS 2009a). Estimated tortoise abundance in impacted portions of the Combat Center uses data from model surveys that employ Total Corrected Sign. Refer to Appendix C for methodology and definitions of disturbance zones.
Source: Data from Kiva 2001, Karl 2010a.

[1] Note that the USFWS (2009a) protocol labels adults as those tortoises ≥160 mm carapace length. TRED and all other discussions in this document refer to adults as those tortoises ≥180 mm.

2.1.2 Incidence of Disease

Health sampling has not been conducted in the WSA and SSA. However, sampling on the Combat Center was conducted in 2008 (Kiva 2008), 2010 and 2011 (J. Smith, unpub. draft data, 2011) on training ranges bordering the WSA and SSA. In the WSA, 9 samples were taken in 2008 on Sand Hill, 124 samples were taken in 2010 on the Sand Hill and Acorn ranges, and 13 were collected in 2011 on the Emerson Lake and Maumee Mine ranges. In 2008, Kiva (2008) reported that eight of the nine tortoises were seronegative for *Mycoplasma agassizii, M. testudinium,* and herpesvirus; one tortoise was suspect. None had clinical signs for respiratory disease. In 2010, 115 tortoises were seronegative for *M. agassizii*, five were positive, and four were suspect. For *M. testudinium*, 109 were seronegative, seven were positive, and eight were suspect. Six had abnormal nasal discharges and 59 had evidence of shell disease. In 2011, all 13 tortoises were seronegative for both *Mycoplasma* species and none had nasal discharges.

The USFWS 2011 *Guidance* identifies disease prevalence as "the cumulative proportion of tortoises within the population of interest that are seropositive to *Mycoplasma agassizii* antibodies, those that are seropositive to *Mycoplasma testudineum* antibodies, and those that have other clinical signs that disqualify an individual from being translocated" (USFWS 2011c). For 2008 and 2011, disease incidence is zero in the sampled groups. Because the available 2010 data are in draft form and results for specific tortoises are not yet available, a cumulative accounting of diseased individuals is not possible (i.e., some tortoises that are seropositive for *M. agassizii* may also be seropositive for *M. testudinium* and/or have clinical signs). However, a conservative estimate of disease prevalence along the eastern WSA, based on the total combined number of seropositive results for both *Mycoplasma* species plus counts of clinical signs (=18), is 14.5% of the sampled population. So, disease incidence along the eastern WSA falls somewhere between zero and 14.5%.

Adjacent to the SSA, six tortoises were sampled in 2010 in Cleghorn Pass; four were seronegative and two were suspect. None had abnormal nasal discharges and four had abnormal shell presentations. Disease prevalence, then, was approximately 0%.

2.1.3 Habitat

The study areas lie in the Mojave Desert at elevations of approximately 780 to 1830 m (WSA) and 440 to 700 m (SSA). Topography ranges from several playas to rugged mountains in the WSA, while the SSA is primarily dominated by a broad, very gently sloping bajada, with low mountains and foothills in the south. Drainage patterns reflect the local topography. Along the broad bajadas, drainage is primarily characterized by scattered, well-defined washes and networks of numerous, narrow runnels. The former are several-yards-wide, sandy to cobbly drainages that carry periodic runoff to regional drainages. These washes are often incised, from a half to several yards deep, and vegetated along the banks by both shrubs and perennial grasses. In contrast, the numerous, shallow runnels are typically only a yard or less wide, one-to-few inches deep, and irregularly vegetated by locally common shrub species. They typically fail to either flow or provide

through-flow to larger drainages. Sheet flow (i.e., overland flow of water and debris) is evident on several bajadas. Substrates there tend to be more gravelly than non-sheeting habitats due to the hydrologic transport of materials. Throughout the study area, percolation into the plain or nearby playa occurs where slopes are negligible.

The presence of coarse particles in the substrate varies and is largely dependent on the proximity to mountains and attendant hydrologic forces. Hence, boulders and cobbles are common in the upper bajadas and toeslopes, with smaller particles downslope. Desert pavement is intermittently present depending on depositional action and erosion. The playas are largely devoid of coarse particles. Soils range from slightly hard silt in the playas to soft sand and coarse-sandy loams as one proceeds upslope; along mountain slopes, soils tend to be gravelly and hard. Downwind of the playas, sand has been deposited in small to many-acre loose-sandy fields.

Vegetation communities in the study areas are described by several subsets of Mojavean-Sonoran Desert Scrub, Madrean Warm Semi-Desert Wash Woodland Scrub, and Warm Semi-Desert/Mediterranean Alkali-Saline Wetland, all three broad Mojave Desert classifications of the National Vegetation Classification Hierarchy (Federal Geographic Data Committee 2008). The subsets, or alliances, of these broad vegetation groups, developed by Sawyer, Keeler-Wolf and Evens (2009) and used by the California Natural Diversity Data Base (California Department of Fish and Game [CDFG] 2010), include several scrub and wash-scrub communities. Scrub communities in the study areas are largely dominated by two shrub species: creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*). However, common elements variously include white rhatany (*Krameria grayi*), chollas (*Cylindropuntia echinocarpa*, *C. ramosissima*), indigo bush (*Psorothamnus arborescens*), Mormon tea (*Ephedra nevadensis*), and encelia (*Encelia frutescens, E. farinosa*). Drainages often host a distinct suite of species, including cheesebush (*Ambrosia* [*=Hymenoclea] salsola*), galleta grass (*Pleuraphis rigida*), desert peach (*Prunus fasciculatum*), desert lavender (*Hyptis emoryi*), smoke tree (*Psorothamnus spinosus*) and cat's claw (*Senegalia* [*=Acacia*] *greggii*). Understory species are dominated by one exotic grass, split grass (*Schismus arabicus*) and numerous dicot species. The shrub component on upper slopes is more diverse than downslope and often includes Mojave yucca (*Yucca schidigera*). Downslope, near playas, Chenopod scrubs dominate, especially allscale (*Atriplex polycarpa*), grading to inkweed (*Suaeda moquinii*) and iodine bush (*Allenrolfea occidentalis*) at the lake edges. Vegetation in the dunes and sand fields is dominated by creosote bush, galleta grass, and white bursage; Emory dalea (*Psorothamnus emoryi*) is occasional to common. Representative understory species include dune primrose (*Oenothera deltoides*), sand verbena (*Abronia villosa*), forget-me-not (*Cryptantha angustifolia*), Spanish needle (*Palafoxia arida*), and plantago (*Plantago ovata*). Acreage for the major plant communities was quantified in the BA and is presented in Table 3.

Table 3. Plant Communities and Land Classifications[1] on the Combat Center and Study Areas (Source: Navy 2011a)

Plant Community or Land Classification	*Area (Percent of Total for Specific Area)*	*Dominant Species*	*Subdominant Species (If Applicable)*
West Study Area			
Shrub-Dominated Communities			
Creosote bush scrub	138,205 acres (94%)	Creosote bush White bursage Brittlebush Cheesebush	Sweetbush Spiny senna Desert lavender
Black brush scrub	1,709 acres (1%)	Black brush (*Coleogyne ramosissima*) Shadscale (*Atriplex confertifolia*) Creosote bush California buckwheat (*Eriogonum fasciculatum*)	None
Mojave yucca	1,203 acres (0.8%)	Creosote bush White bursage	Mojave yucca Spiny senna Cheesebush Black brush
Tree-Dominated Communities			
Mesquite	297 acres (0.2%)	Honey mesquite	All-scale Bush seepweed Fourwing saltbush
Catclaw acacia	194 acres (0.1%)	Catclaw acacia Cheesebush Smoke tree	Creosote bush Cheesebush Sweetbush Desert willow
Smoketree woodland	126 acres (0.1%)	Smoke tree Desert willow	Sweetbush Catclaw acacia Creosote bush
Other Land Classifications			
Playa	1,544 acres (1%)	N/A	N/A
Subtotal	143,278 acres (98%)		
South Study Area			
Shrub-Dominated Communities			
Creosote bush scrub	19,320 acres (88%)	Creosote bush White bursage Brittlebush Cheesebush	Sweetbush Spiny senna Desert lavender
Tree-Dominated Communities			
Catclaw acacia	115 acres (0.5%)	Catclaw acacia Smoke tree Desert willow	Burrobush (*Ambrosia salsola*) Sweetbush Brittlebush
Other Land Classifications			
Desert dunes	2,364 acres (11%)	No dominant species	Desert twinbugs (*Dicoria canescens*)

Table 3. Plant Communities and Land Classifications[1] on the Combat Center and Study Areas (Source: Navy 2011a)

Plant Community or Land Classification	*Area (Percent of Total for Specific Area)*	*Dominant Species*	*Subdominant Species (If Applicable)*
			Desert sand verbena (*Abronia villosa*) Various buckwheat species (*Eriogonum* spp.) Indian ricegrass
Subtotal	21,799 acres		
Total for all Areas	801,058 acres		

Notes: [1]As defined by Keeler-Wolf et al (2009). Total acreages may not equal those listed for the acquisition areas in Section 1.2 of the BA due to rounding.
Source for Data in Table: USGS 2004 (part of WSA and SSA), California Department of Forestry 2003 (remainder of WSA), AgriChemical and Supply 2008 (Combat Center).

2.1.4 Anthropogenic Uses

WSA

The major current use of the WSA is as an OHV recreation area (U.S. Bureau of Land Management [BLM] 1992, 2005). The entire WSA falls within the BLM's designated Johnson Valley OHV Area (BLM 1998, 2007). OHVs have unrestricted use throughout this recreation area and, as a result, tracks and trails are present throughout the WSA. The greatest concentrations of OHV use are in the central and southern WSA, consistent with camping areas that are accessible to motor homes and trailers. However, evidence of an OHV race (markers, contestants, crushed tortoises) is present near the northeastern boundary of the WSA. An estimated 84,721 acres (343 km^2) in the WSA and SSA, combined, were considered to have high levels of disturbance from past OHV-related activities; an additional 39,273 acres (159 km^2) have experienced moderate levels of disturbance (Karl 2010b).

Historic use of the WSA includes mining and grazing. There are several small mines scattered throughout the area, as well as the larger Bessemer Mine, which has a landing strip and a major, graded dirt road extending south to Highway 62. Based on the lack of obvious recent activity, it appears that most of the mines in the area have been abandoned. Approximately half of the WSA is overlapped by the Johnson Valley sheep grazing allotment (BLM 2005). The allotment was only used one year between 1991 and 2004 and an application for grazing was approved by BLM in 2006 (BLM 2006). However, this allotment is subject to the "9-Mile Rule", whereby sheep are prohibited within nine miles of occupied bighorn sheep habitat, so current and future grazing is highly restricted (Navy 2011b). The northern portion of the WSA overlaps the Ord Mountain grazing allotment. This allotment has a long history of cattle grazing. Per stipulations in the West Mojave Plan (WMP; BLM 2005), cattle grazing was to be excluded during spring and fall throughout this overlap area in years when biomass

production of ephemeral vegetation is below 230 lb/acre (BLM 2006). No cows were seen in 2008 and 2009 surveys in this exclusion area, but we observed old cattle manure (of unknown age).

Other anthropogenic features in the WSA include small dirt roads throughout the area and a high-voltage transmission line corridor that traverses the northwestern border of the WSA. South of the WSA, there are several small housing communities populated by small, and often abandoned, single-family dwellings.

SSA

There is little human use of the SSA. It is not within a grazing allotment (BLM 2005) and no mines were observed. Road access through the SSA is absent and there is only minor use of the southern border area for OHV recreation. South of the SSA, and in the southwestern corner, are scattered, single-family dwellings.

2.1.5 Threats to Desert Tortoises

In addition to anthropogenic impacts described above in Section 2.1.5, ravens, coyotes and domestic dogs are existing threats in the study areas. Recent high mortality rates observed in 2009 at the Emerson Lake plot adjacent to the WSA and at two one-square-kilometer plots (Plot 1 and 6; Karl 2010) in the WSA implicated predation by canids in many of the deaths (Kiva 2009). Nine tortoises had died within the previous four years at Emerson Lake, seven at Plot 1 and eight at Plot 6. Even assuming that some of these carcasses were probably juvenile tortoises, they still represent fairly high mortalities compared to densities of live tortoises - Emerson Lake: 3.0 ± 0 # tortoises/km^2; Plot 1: 7.8 ± 1.3; and Plot 6: 0.0. The primary investigator stated that the causes of death for the Emerson Lake plot and Plot 1 appeared to be primarily due to canids; causes of death on Plot 6 were unknown (Kiva 2009).

On the Sand Hill plot in 2008, nine out of the ten adult tortoises had shell trauma that was attributed to dogs (Kiva 2008). In earlier studies on the Sand Hill and Emerson Lake plots, the principal investigator stated that both plots had tortoises that were severely mauled by free-roaming dogs (Kiva 2001). All 11 live tortoises observed in a 2009 study paralleling the base border of the Sand Hill and West Training Areas had evidence of canid trauma (BT Henen, unpublished data).

The proposed project's expanded training activities may alter the predator community in the study areas (Navy 2011a). Cessation of public OHV use in the exclusive military use area of the WSA would remove most if not all existing predator subsidies (e.g., food and water from OHV users, hikers, and campers) in that area. However, ravens and coyotes may be attracted to heightened scavenging opportunities and water availability associated with military training, especially in parts of the WSA that are not currently heavily used for OHV recreation, and similarly in the little-used SSA. Elevated desert tortoise predation could occur when training personnel complete exercises. Existing trash control and military training cleanup measures should partially ameliorate these effects. Surface

disturbance and reduced plant cover associated with military training activities may also facilitate detection of hatchling and juvenile desert tortoises by predators such as ravens and coyotes.

The construction of communications towers in the WSA and northwest of the WSA, as well as the fenced Company Objectives[2], would provide perching opportunities for ravens and raptors, possibly increasing predation on desert tortoise hatchlings and juveniles. However, standard conservation measures to install deterrents (e.g., spikes) on the towers, as described in the current Integrated Natural Resources Management Plan (INRMP), would ameliorate this potential adverse effect.

2.2 RECIPIENT AREAS

This section describes the proposed recipient areas and alternative areas based on available information. Studies of these areas over the next three years that will provide more information and assist both in refining these areas and determining specific translocation procedures in each are summarized. Similar to the section on the impact areas, this section describes the status of desert tortoises in the proposed recipient areas and the features that make these areas suitable translocation areas.

2.2.1 Number, Location and Size of Recipient Areas

Proposed Recipient Areas

Proposed recipient areas are locations that have been targeted for investigation as suitable tortoise release areas. These areas are larger than the actual release sites ("recipient sites"), which will be determined during baseline studies over the next three years (see Section 2.2.2, below). It is anticipated some parts of these proposed areas may not be suitable for translocation. Conversely, during the upcoming studies, other areas may be determined to be better recipient areas.

For the WSA, six areas are proposed as recipient areas: two proposed Special Use Areas (SUAs) in the WSA; three areas immediately adjacent to the northern border of the WSA ("Ord-Rodman"), one of which abuts an SUA[3]; and two areas on the Sunshine Peak Training Area (Figure 7). Each area is currently about 22-39 km^2 (8.5 to 15 mi^2; Table 4)

---

[2] Two areas within the Restricted Public Access Area (RPAA), each measuring 984 by 984 feet (300 by 300 meters), would be permanently designated as "Company Objective" areas that would remain closed to public access/use year-round and would contain trench lines, obstacles, and bunkers.

[3] SUAs are designated areas within which bivouacs, off-road vehicle use, or training involving vehicle activity, are either restricted (Category 1) or discouraged (Category 2). The new SUAs on the study areas would be designated as Category 1 (no mechanized maneuver), with the exception of a portion of the northern SUA in the WSA, that would be designated as Category 2 from the existing road to the study area boundary.

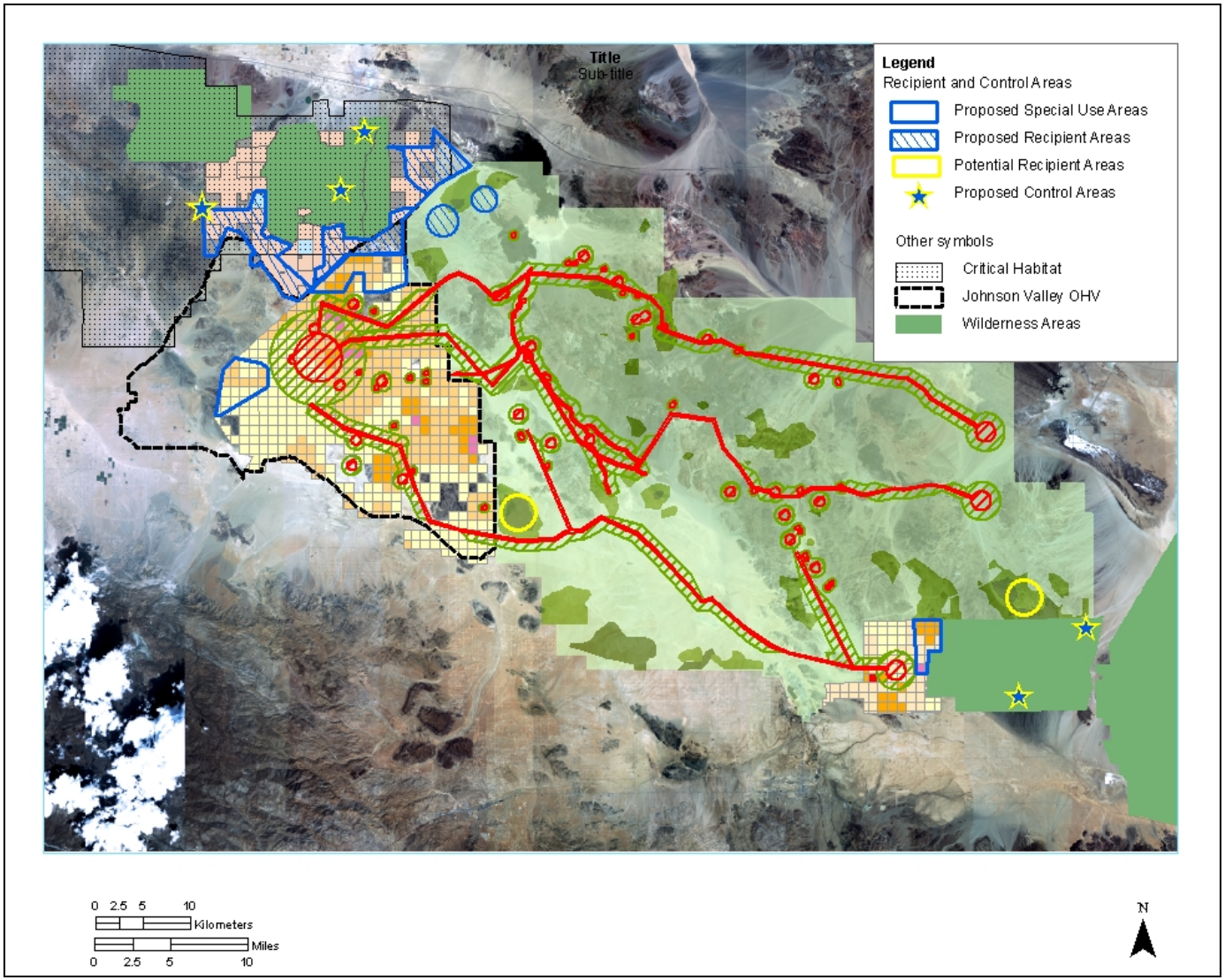


Figure 7. Proposed and alternate recipient areas and proposed control areas for translocation monitoring and research, in the context of MEB-level training (see Figure 3 for explanation) and conservation areas.

in size and together total approximately 153 km^2 (59 mi^2 or 37,855 acres), but these are only approximate sizes and boundaries may change following upcoming studies.

In the SSA, the entire, 2935-acre (11.9 km^2) proposed SUA is proposed as a recipient area (Figure 7).

Table 4. Sizes of proposed and alternative recipient areas

	Study Area	*Recipient Area*	*Size (acres)*	
			acres	*km^2*
Proposed Recipient Areas	WSA	SUAs (combined)	12015	48.6
		Ord-Rodman-combined	19,199	77.7
		Sunshine Peak (combined)	3706.5	15.0
	SSA	SUA	2935	11.9
Total			**37855.5**	**153.2**
Potential Alternate Recipient Areas	WSA	Emerson Lake SUA	2471	10.0
	SSA	Bullion SUA	2471	10.0
Total			**4942**	**20**

Potential Alternative Recipient Areas

In the event that some of the proposed recipient area is found to be unsuitable, two alternative areas are under consideration, one in the Emerson Lake Training Area and the other in the Bullion Training Area (Figure 7). Both locations are in Category 2 SUAs in these training ranges, wherein off-MSR is discouraged, but not restricted, because of biological and/or cultural sensitivities.

2.2.2 Baseline Studies on the Proposed and Alternative Recipient Areas

In the next three years, several surveys will be conducted to provide more detailed information that can be applied to the project translocation. The results of these studies will direct and refine translocation, the final details of which will be in the Final Translocation Plan. These studies are consistent with the USFWS *Guidance* (USFWS 2011b) and include:

- Desert tortoise density and distribution studies on the impact, recipient, and control areas
- Health status of the impact, recipient, and control areas
- Habitat analysis of the recipient and control sites
- Risk analysis in the recipient and control sites

Desert tortoise density throughout the proposed recipient and control areas and in the impact area will be assessed via the TRED (Karl 2002, 2010a) and USFWS protocol (USFWS 2009a) methods that have been used in the project area to determine tortoise density and distribution. Recipient and control areas will be assessed first because (1) there are no current, focused data for most of the areas outside the WSA and SSA and (2) early surveys will help refine the release and control sites in time to choose and survey alternative sites, if necessary. In the final year prior to translocation (2013-2014), tortoise density will be re-evaluated in the impact area, using these same techniques, to provide current densities.

In addition to the more widespread density estimates, focused, mark-recapture surveys will be conducted on 10-12, one square kilometer plots in the recipient and control areas. Four would be in the control sites and eight would be in the Ord-Rodman, Sunshine Peak, and SUA recipient areas. These plots would provide precise density estimates on several sites within these research areas, as well as population size structure, and would provide the pre-translocation temporal control for the translocation effectiveness monitoring program (see Section 2.4, below).

During the density surveys, the health status of desert tortoises in all three areas will be assessed via blood samples and visual observation of clinical signs. Approval to handle tortoises for this purpose will be through an existing NREA recovery permit modification (TE-17730). Methods and equipment for conducting health sampling will be consistent with the current guidelines from the USFWS (2011c). Minimum sample sizes will be determined by the number needed to detect 10-percent disease prevalence at the 95-percent confidence level (USFWS 2011b). Since it is anticipated that approximately 200 tortoises will be needed for effectiveness monitoring in each of the recipient and control sites, the USFWS *Guidance* identifies that a minimum of approximately 25 to 40 individuals must be sampled.

The results of both the density and health surveys will be valid, for purposes of refining the final translocation program, through the development of the Final Translocation Plan. During clearance surveys (see Section 3.2.2, below), density and health will be re-assessed to provide current information.

Habitat will be assessed on the proposed recipient and control areas. At a minimum, habitat will be assessed qualitatively relative to plant species composition, species density and dominance, shrub cover percent, shrub height, common and dominant understory

species, tortoise forage species, soils, substrates, hydrology, and topography. The habitat model currently being developed for desert tortoises by NREA will be implemented on the proposed recipient and control areas to rank sites within each area and refine the final locations for the recipient and control sites. This ranking, plus the tortoise density observed at each site, will assist in determining the stocking (i.e., release) densities at each site.

Current and future anthropogenic disturbances and potential threats in the proposed recipient and control areas (e.g., dogs or elevated coyote or raven populations associated with human development, proximity to major highways, existing and future utility infrastructure, solar and other development) will be evaluated. This will be completed through a combination of literature searches and field surveys. Literature searches will include a review of plans and amendments (e.g, USFWS Recovery Plan supplemental chapter on renewable energy; WMP), projects, documents relating to permits and land uses, and broad-based programs (e.g., Desert Renewable Energy Conservation Plan [DRECP]). Field surveys will include a qualitative and quantitative survey of predator populations (e.g., avian counts, tracking stations) and disturbance types and levels. These surveys will be conducted simultaneously or in association with the desert tortoise density and distribution surveys.

2.2.3 Tortoise Abundance

Proposed Recipient Areas

Tortoise abundance in the proposed SUAs and in the parts of the southern and western proposed Ord-Rodman recipient areas that were originally surveyed for the WSA is known from TRED density surveys in 2009 (Figures 5 and 6; Karl 2010). Point densities ranged from 0 to 12.9 adult tortoises/km^2 (0-33.4 adult tortoises/mi^2) in the northernmost SUA in the WSA and adjacent Ord-Rodman area and <1 to 6.0 adult tortoises/km^2 (<2.6-15.5 adult tortoises/mi^2) in the westernmost SUA. Estimated total abundance of adult tortoises was 131 and 89 in the two SUAs, respectively (Table 5). An estimated 655 and 382 adults were estimated for each SUA, respectively.

In the SSA SUA, tortoise densities ranged from 3.9 to 8.6 adult tortoises/km^2 (10.1-22.2 adult tortoises/mi^2) (Figure 6; Karl 2010a), for a total estimated abundance of 82 adults; 387 juvenile tortoises were estimated (Navy 2011a).

In the Sunshine Peak Training Area, the most recent data are from 1997, when tortoise densities in the proposed recipient area ranged from 2.3 to 7.7 tortoises/km^2 (6-20 tortoises/mi^2) (Jones and Stokes and Kiva 1998). There were higher density areas observed near the proposed recipient areas, but adding more tortoises to a higher density area (should it still be higher) is complicated by carrying capacity considerations. During the next three years' studies, questions about current densities, release sites and habitat capacity to support tortoises in Sunshine Peak will be addressed.

Table 5. Estimated Number (95% CI) of Tortoises within New Special Use Areas That Would Be Established in the WSA and SSA (Source: Navy 2011a.)

Special Use Area	*Adult Tortoises in the New SUAs*		*Juvenile Tortoises in the New SUAs*	
	TRED	*USFWS*	*TRED*	*USFWS*
West Study Area, Northern SUA	139 (111 – 168)	-*	655 (523 – 792)	-
West Study Area, Western SUA	81 (58 – 104)	-	382 (273 – 490)	-
South Study Area SUA	82 (68 – 95)	-	387 (321 – 448)	-
Total	**303 (238 – 367)**	**372 (169 – 823)**	**1,424 (1,117 – 1,730)**	**1,756 (794 – 3,881)**

Notes: Values calculated based on desert tortoise density estimates, using GIS overlay of proposed Special Use Areas (Figure 3-2). *When using the USFWS protocol survey (USFWS 2009a), the Special Use Areas were considered together in order to robustly estimate abundance and 95% CI. Use of the TRED model survey allowed for individual estimates of density and abundance for individual Special Use Areas.

Source: Adult data from Karl 2010a

North of the areas surveyed in the original WSA, the only current information on tortoise density is from the USFWS' rangewide sampling program. Adult tortoise densities in the Ord-Rodman monitoring stratum were estimated in 2010 as 7.5 /km^2 (19.4 tortoises/mi^2) (Table 6; USFWS 2010). Historically, there are a few abundance data from other regional sampling programs. Beginning in 1977, 10-meter-wide, 2.4-km-long belt transects were used to sample broad regions within the desert tortoise's range, including in and around the WSA and SSA, to estimate tortoise abundance. Early transects were spaced at two per township (one township = 36 mi^2; Berry and Nicholson 1984); later transects conducted for the WMP (BLM 2005) were spaced at one or two per 2.59 km^2 (1 mi^2). All size classes of tortoises were considered together. While these transects were poor estimators of tortoise density (Karl 2001), they were useful in suggesting variation in tortoise abundance, especially at the extremes. Transects from the late 1970s estimated tortoise densities in the proposed Ord-Rodman recipient area at approximately 8 to 13 tortoises/km^2 (20-50 tortoises/mi^2) (Berry and Nicholson 1984b). BLM's WMP transects sampled the WSA and areas to the north between 1998 and 2002 and found moderate to fairly high sign counts in the currently proposed eastern and southern Ord-Rodman recipient areas. Several transects had 9-16 or 17-28 Total Corrected Sign (TCS) (9-16 was the middle range of sign categories) (BLM 2005).

Potential Alternative Recipient Areas

A mark-recapture, trend plot lies in each of the Emerson Lake and Bullion potential alternative recipient areas. The Emerson Lake plot was surveyed in 1991, 1997, 2003 and 2009. Numbers of live tortoises declined from 15 to 20 tortoises/km^2 during the three surveys between 1997 and 2003 (e.g., 16.3 $\pm$ 3.0 tortoises/km^2 in 2003) to 3.0 tortoises/km^2 in 2009, a significant difference (Kiva 2009).

Table 6. Comparison of 2009 tortoise densities (# adult tortoises/km^2) with those from the USFWS 2010 range-wide sampling program.

Study Area	*Tortoise Density (# adult tortoises/km^2)*[1]		*Tortoise (# adult tortoises/km^2) in Corresponding USFWS Sampling Strata*[2] *USFWS (2010) Sampling Program*
	TRED Model Survey	*USFWS Protocol (2009a)*	
WSA	3.7	7.1	Western Mojave Recovery Unit – 3.1 Ord-Rodman monitoring stratum[3] – 7.5
SSA	4.9	5.7	Western Mojave Recovery Unit – 3.1 Pinto Mountain stratum – 3.4 Joshua Tree National Park – 2.8

: [1] *Source*: Karl 2010a, except revision for WSA (Navy 2011a) due to decrease in size of study area from 2009
[2] USFWS 2010.
[3] Monitoring strata are "Tortoise Conservation Areas" and essentially overlap both the critical habitat unit and DWMA.

The Bullion plot was surveyed three times between 2001, 2003, and 2008 (Kiva 2008). Overall densities were 31.0 ± 13.3, 42.4 ± 14.4 and 13.4 ± 4.7 tortoises/km^2, respectively. The total numbers of tortoises were somewhat similar in each survey (28 in 2001, 30 in 2003 and 21 in 2008), but the apparent "declines" were due to a decrease in the number of adult tortoises. This size group declined 22.7% from 2001 (22 adults) to 2003 (17 adults) and 35.3% from 2003 to 2008 (11 adults). While the number of adult tortoises declined 50% from 2001 and 2008, the principal investigator stated that the most likely reason for the drop in adult tortoise numbers and estimate/variance was the timing of the 2008 survey. Due to permitting delays, the survey did not occur until late May, whereas both the 2001 and 2003 surveys were carried out in mid/late April, a time period when desert tortoises are predictably more active and more likely to be encountered. Food availability was similar for all three surveys and human impacts appeared to have decreased during the previous eight years; only two adult carcasses were found. Small tortoises, under 140 mm in length, comprised 33.3% of the 21 observed tortoises in 2008, indicating that reproduction and recruitment was occurring.

2.2.4 Incidence of Disease

Proposed Recipient Areas

No data on health assessments or sampling in the proposed recipient areas are available. During the USFWS' line distance sampling program in 2005, blood samples were collected to document disease status, but those data were not reported in the annual reports on line distance sampling (USFWS 2006). In all years, all tortoises observed during line distance sampling also were examined for clinical signs, but those data were not reported.

Potential Alternative Recipient Areas

Health assessments were conducted and blood samples taken on seven tortoises at the Emerson Lake plot in 2011. None was seropositive for *M. agassizii* or *M. testudinium* or had nasal discharges.

No tortoises had signs of respiratory disease on the Bullion plot in 2001, 2003, or 2008 (Kiva 2008). Blood samples were drawn from desert tortoises in 2002, 2003, and 2008 to test for antibodies for *M. agassizii*, *M. testudinium*, and herpesvirus; no tortoise tested positive for any of these diseases.

2.2.5 Habitat

Proposed Recipient Areas

Habitat for the SUAs and much of the Ord-Rodman southern and western areas was described during 2008 and 2009 surveys (Karl 2010a) and discussed in Section 2.1.3, above. Because the remainder of the Ord-Rodman and Sunshine Peak recipient areas are proximal to the previously surveyed areas, it is anticipated that vegetation would be similar to that in the surveyed areas. These proposed recipient areas outside the WSA were chosen based largely on topography (following an examination of protected areas and uses). All are on bajadas and include foothills and small outcrops, so habitats should be similar to those surveyed in the study areas. Over the next three years, however, habitat will be investigated both quantitatively and qualitatively to fully describe it. A habitat model is currently being developed by NREA, the purpose of which is to model both measurable and qualitative abiotic and biotic factors that influence tortoise habitat quality. This model will be employed on the proposed recipient areas in order to refine the final recipient sites within which translocated tortoises will be released and monitored.

Potential Alternative Recipient Areas

The Emerson Lake alternative recipient area has similar habitats to that in the adjacent WSA. It lies on a lower bajadas at about 780 m (2575 ft) in elevation. The plant community is a fairly open, low diversity creosote bush-white bursage scrub. Soils are soft, loamy coarse sands with a high decomposed granite component; substrates have scattered fine gravels. Hydrology is characterized by shallow, occasional sandy washes. This part of the Bullion Training area is biologically somewhat richer than the nearby SSA. The vegetation community is a diverse creosote bush scrub alliance with many large Mojave yucca. Common perennial species include creosote bush, white bursage, Mojave yucca, white rhatany and desert senna (*Senna armata*). Washes are botanically rich with the above species plus sweetbush (*Bebbia juncea*), rayless encelia, catclaw and paper-bag bush (*Salazaria mexicana*) (Kiva 2008). The site lies on a gently sloping alluvial fan bounded on two sides by the Bullion Mountains. Narrow, shallowly incised washes with caliche deposits, and broader, shallow washes intersect the area. Elevations range from 800 to 840 m (2640 to 2772 ft).

2.2.6 Land Management and Conservation Areas

WSA

The Ord-Rodman Critical Habitat Unit and Desert Wildlife Management Area (DWMA) are located immediately north of the WSA (Figure 8). Together, they comprise over 112,000 ha (276,756 acres).

DWMAs act as reserves in which recovery actions identified by the original and revised recovery plans (USFWS 1994a and 2011a) are implemented; they are managed as ACECs by BLM. The recovery plan works in concert with critical habitat units (CHU), designated for *G. agassizii* in 1994 (FWS 1994b), by prescribing management actions to aid recovery, with critical habitat providing legal protection.

The Rodman Mountains Wilderness and Area of Critical Environmental Concern (ACEC) lie immediately north of the WSA (BLM 2005). Wilderness Areas are to be managed "to retain their primeval character and influence, without permanent improvements or human habitation… (and are to be)…protected and managed so as to preserve…natural conditions" (BLM 1995). ACECs have been established to "protect and prevent irreparable damage to important historic, cultural and scenic values; fish, wildlife resources or other natural systems or processes; or to protect human life and safety from natural hazards. ...the management of ACECs is focused on the resource or natural hazard of concern … and in some cases may involve surface disturbing actions" (BLM no date). Another small ACEC ("Upper Johnson Valley Yucca Rings ACEC") lies along the western WSA border and a third ACEC ("Soggy Dry Lake Creosote Rings ACEC") lies immediately south of the WSA, near Bessemer Mine Road.

The majority of the lands north of the WSA are managed by BLM. However, there are scattered to alternating private parcels, especially in the east and western areas, and three sections owned by the State of California.

SSA

The Cleghorn Lakes Wilderness abuts the eastern edge of the SUA in the SSA. The nearest desert tortoise DWMA and critical habitat are the overlapping Pinto DWMA and Pinto Mountains CHU, approximately 20 km to the south.

2.2.7 Anthropogenic Uses and Threats to Desert Tortoises

All SUAs are in the study areas, which were described in Section 2.1, above. The tip of the Johnson Valley OHV Area, about 15 km^2 (6 mi^2), extends into the proposed Ord-Rodman recipient areas. Actual OHV use in the area is not well-documented but some of the area was surveyed during WSA surveys in 2008 and 2009, which surveyed beyond

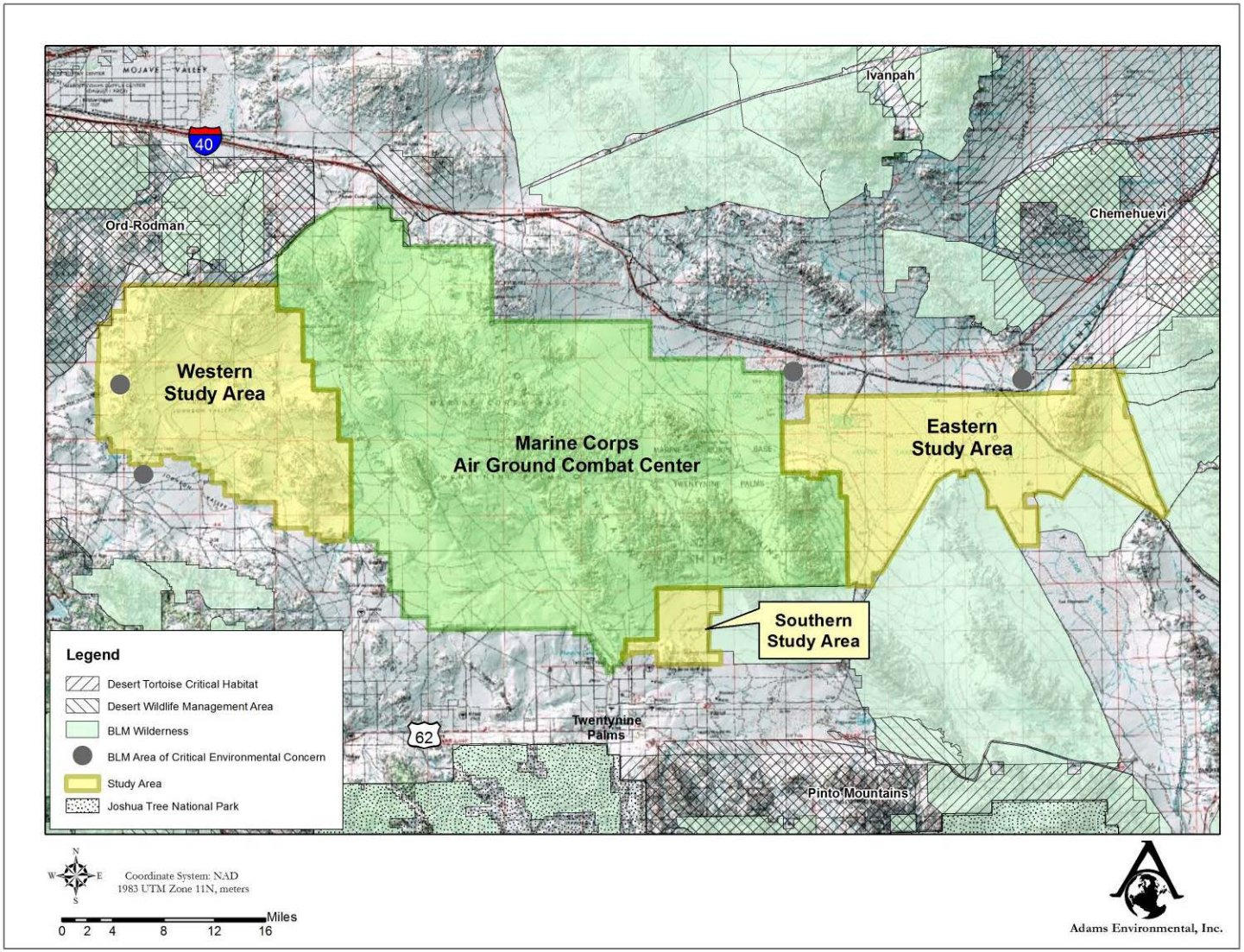


Figure 8. Conservation areas in the MCAGCC vicinity. (Source: Karl 2010a)

the current WSA boundary (Figure 6; Karl 2010a). In general, relatively little OHV use was observed in the northern WSA, compared to central and southern Johnson Valley. There were few dirt roads and those were primarily to access the set of transmission lines.

There was, however, evidence of an OHV race (markers, contestants, crushed tortoises) near the junction of the northern SUA and the proposed Ord-Rodman recipient areas.

As part of an OHV displacement study for the land acquisition and airspace establishment project, increased use in the vicinity of the proposed recipient areas was examined. The study concluded that the Ord Mountain route network would be expected to see a pronounced increase in OHV activity as a result of displaced use from Johnson Valley, due to the area's popularity and spillover from Stoddard Valley (TEC 2011). However, the study cautioned that data on reliable projections of increased OHV activity and locations were unavailable and that "projecting increases in OHV use with any certainty, by specific location with the ODA [Open Desert Area], was described by OHV enforcement experts as a near impossibility – there are too many factors, which change dynamically before they can be studied, to establish a reliable projection."

Historic use of the Ord-Rodman recipient areas includes mining in the adjacent mountains and grazing. There are several small mines scattered in the adjacent mountains, but it is unclear if any are active. The Ord Mountain cattle grazing allotment completely overlaps the proposed recipient areas. However, per stipulations in the WMP (BLM 2005), cattle grazing would be excluded during spring and fall throughout this overlap area in years when biomass production of ephemeral vegetation is below 230 lb/acre (BLM 2006).

Sunshine Peak is an on-base training area that receives extremely little disturbance. The training area is a hung ordnance area, where aircraft try to dislodge ordnance that fail to launch during training exercises. Ground activity, primarily by the Combat Center's Explosive Ordnance Division (EOD), is essentially limited to a few days per year, where EOD detonates or removes ordnance. The extent of disturbance will be assessed during upcoming surveys.

It is assumed that coyotes and ravens, as well as lesser tortoise predators, occupy the recipient areas. Because of the relatively low apparent uses and lack of nearby human habitation, it is unlikely that their numbers are higher than would be expected in a relatively natural setting. However, during upcoming surveys, ravens (individuals, nests) will be counted when observed. The area below nests of both ravens and large raptors will be searched for tortoise remains. Evidence of free-ranging dogs and coyotes will be documented and described.

2.2.8 Validity of the Proposed Recipient Areas for Translocation

There are several criteria for recipient areas that should be met for successful translocation to occur:

1. Translocation lands should be part of a larger block of lands that are either already protected or planned for protection, or feasibly could be protected by a public resource agency or a private biological-reserve organization. The site will be managed for conservation so that potential threats from future impacts are precluded.
2. Lands should be connected to occupied desert tortoise habitat or in sufficiently close proximity to known occupied tortoise habitat that unencumbered genetic flow is possible.
3. Preferably, tortoise populations on and/or near the recipient areas are depleted or depressed, so that translocation repatriates a formerly occupied site and does not conflict with carrying capacity constraints. The lands must comprise sufficiently good habitat that they are either currently occupied or could be occupied by the desert tortoise once they are protected from anthropogenic impacts and/or otherwise enhanced.
4. Habitat on the recipient areas should be suitable for all life stages.
5. Lands should not be subject to such intensive recreational, grazing, or other uses that habitat recovery would be rendered unlikely or lengthy. Nor should those invasive species that are likely to jeopardize habitat recovery (e.g., Sahara mustard [*Brassica tournefortii*]) be present in uncontrollable numbers, either on or immediately adjacent to the parcels under consideration.
6. Lands must have no detrimental rights-of-way (ROWs) or other encumbrances.

These criteria are consistent with the goals, objectives, and recovery strategies of the Recovery Plan USFWS (2011a) and USFWS *Guidance* (USFWS 2011b). The *Guidance* further requires that:

7. Disease prevalence within the resident desert tortoise population is less than 20 percent
8. The lands should be within 40 km of the impact area, with no natural barriers to movement between them, to ensure that the desert tortoises at the two sites were likely part of a larger mixing population and similar genetically
9. Sites must be at least 10 km from major unfenced roads or highways.
10. Recipient sites must include a radius of 6.5 km from release points.

Recipient areas were chosen based on their association with and/or proximity to protected lands, a lower likelihood of negative impacts, likely intact habitat, and connection to adjacent tortoise populations. Assuming that population densities are depressed (based on a pattern of declines both range-wide and locally [see Section 1.1, above]), then augmenting these areas could re-establish tortoises where they have been extirpated, thereby maintaining genetic integrity and connectivity within the population, and/or enhance population viability against stochastic events or chronic and/or gradual impacts.

The new SUAs were chosen further based on their separation from proposed military training activities and their higher tortoise densities relative to the rest of the study areas. So, based on the available information, Points 1, 2 and 8 are largely met by the currently proposed and alternative recipient areas. SUAs would receive substantially greater protection than they currently receive. They would be off-limits to OHV recreation and to military training and vehicle travel off of MSRs, with limited exceptions for Conservation Law Enforcement Officers, authorized Natural Resources and Environmental Affairs (NREA) staff, and water and maintenance crews. Based on previous surveys (see Section 2.2.3, above) tortoises are highly likely to be present in the proposed Ord-Rodman and the Sunshine Peak recipient areas, and just as likely to be depressed relative to historic densities. These populations, along with the northern SUA in the WSA are topographically interconnected and similarly connected to tortoises to the west and north. The entire area receives substantial protection, either as designated critical habitat and/or because it is surrounded by the Combat Center or designated Wilderness and ACECs. The presence of Conservation Law Enforcement Officers in and around the SUA would facilitate detection of illegal OHV activity in the proposed recipient areas to the north. While OHV activity may increase in the proposed Ord-Rodman recipient areas due to displacement from Johnson Valley, this increase is far from certain (see Section 2.2.7, above).

Similar to the WSA, the proposed recipient area (SUA) in the SSA will be protected by the military, and also abuts an existing SUA on the Combat Center and the Cleghorn Lakes Wilderness. Use of this SUA would maintain the current connections within the local tortoise population.

Both alternative sites are in SUAs on base, so they receive some protection from military activities and protection from public encroachment. A possible consideration is to upgrade these SUAs to Category 1 (i.e., restricted), from the current Category 2 designation. The Emerson Lake population is inarguably depressed over prior levels, and the Bullion area, while potentially stable now, has only been studied for 10 years. If consistent with range-wide patterns of declines, densities are probably lower there than historically.

Points 3, 4, 5, and 6 from the above list are likely. Point 7 requires testing but based on studies on base, along the east side of the WSA (see Section 2.1.2, above), it is highly unlikely that disease prevalence will exceed 20%. All of these points will be studied during the next three years. Regarding Point 9, this is true of all sites except the northeastern Ord-Rodman recipient area. The northern edge is a minimum of 5 km from Interstate 40. Finally, releases would occur in several sites within the recipient areas, pending further survey to determine the appropriate locations. The 6.5 km or other practical radius will be identified at that time.

2.2.9 The number of Tortoises that Will Be Released in Each Recipient Area

The USFWS *Guidance* recommends that post-translocation densities (translocatees plus residents) in the recipient area not exceed the 68% confidence interval from the mean

density of the relevant recovery unit (USFWS 2011b). For the land acquisition project, this would result in a post-translocation maximum of 5.55, based on a mean Western Mojave Recovery Unit density of 4.0, with a (USFWS 2011b: Table 3). However, release rates will be higher, to experimentally examine if higher tortoise densities, augmented by translocation, are warranted. Release densities (Table 7) will be, on average, double the current Ord-Rodman density from line-distance sampling, although there will be variability by release site. Because tortoise densities were much higher in the past, prior to line-distance sampling (see Section 1.1, above), and the declines may have little or nothing to do with habitat quality and carrying capacity, it is fully possible that the higher previous densities may be supportable by the existing habitat. Releasing tortoises at this density will also accommodate the 1105 tortoises projected to require translocation (Table 7).

During upcoming studies in the proposed and alternative recipient areas, habitat model factors (see Section 2.2.5, above) will be used to modify the number of tortoises that can be released in each site. The final project translocation plan also will look at existing densities, disturbance levels (current and anticipated) and other potential risks, and other factors to assess appropriate stocking densities.

2.2.10 Recipient Site Preparation

Currently, tortoise exclusion fencing is only under consideration for those borders of the SUAs that face the maneuvers or high use areas. In the WSA, this would be the southern border of the northern SUA and the entire border of the western USA. In the SSA, the SUA would be fenced on the southwest and south. Further fencing of the SUAs or impact areas is currently not being considered, but fencing ultimately may be considered for portions of the maneuvers' high and medium intensity routes that intersect higher tortoise density areas. No fencing will be erected for proposed recipient areas north of the WSA or in Sunshine Peak. (See Section 3.1.6 regarding fencing details.)

Following further investigation of recipient areas, adaptive management measures may be implemented to eliminate or reduce risks, should they be identified, or otherwise improve the recipient sites to make them acceptable for translocation.

2.3 CONTROL AREAS

Per the USFWS *Guidance*, control sites will be approximately 10 km (6.25 mi) from recipient areas. Potential control sites are shown in Figure 7. While some associated with the WSA recipient areas are slightly closer than 10 km to the entire potential recipient area, during baseline surveys in 2012-2014, recipient sites will be carefully chosen within those recipient areas to permit appropriate control sites also to be established approximately 10 km from actual release sites. During these same surveys, control site locations will be refined and others may be considered, to ensure that they meet the goals of the monitoring and research programs.

Table 7. Experimental number of adult tortoises that might be translocated to proposed and alternative recipient areas. Stocking rates are the multipliers of the current Ord-Rodman density estimate of 7.5, based on the USFWS line-distance sampling program (USFWS 2010).

	Impact Areas			Proposed Recipient Areas				Potential Alternative Recipient Areas	
	WSA	SSA	Total	WSA SUAs	SSA SUAs	Sunshine Peak Training Area	Ord-Rodman	Emerson	Bullion
Tortoises[1] to be Translocated	1000	105	1105						
Recipient Area Size (km^2)				48.6	11.9	60.5	77.7	10	10
Density of Tortoises following Translocation (Residents plus Translocatees) at the Following Stocking Rates:									
1.0 (i.e., no tortoises translocated)				7.5	7.5	7.5	7.5	7.5	7.5
1.3				9.75	9.75	9.75	9.75	9.75	9.75
1.5				11.25	11.25	11.25	11.25	11.25	11.25
1.75				13.125	13.125	13.125	13.125	13.125	13.125
2.0 (i.e., as many tortoises are translocated as there are residents; the final density is twice the estimated Ord-Rodman density)				15	15	15	15	15	15
3.0				22.5	22.5	22.5	22.5	22.5	22.5
Total Number of Tortoises that Could be Translocated to Each Area Per Stocking Rate									
1.0				0	0	0	0	0	0
1.3				109.35	26.775	33.75	174.825	22.5	22.5
1.5				182.25	44.625	56.25	291.375	37.5	37.5
1.75				273.375	66.9375	84.375	437.0625	56.25	56.25
2.0				364.5	89.25	112.5	582.75	75	75
3.0				729	178.5	225	1165.5	150	150

1/ All references to tortoises refer to adult tortoises. Juvenile tortoises will be translocated in the same proportion as found in the recipient site studies.

Because the potential areas are in the same watersheds and/or general area as the recipient areas, habitat, land management and uses, tortoise density, and health status is anticipated to be the same as in the recipient areas described above. As previously stated, habitat, health profile and tortoise density surveys in the next few years will quantify and describe these features.

2.4 EFFECTIVENESS MONITORING

This section presents the framework for monitoring the effectiveness of the translocation. The monitoring program presented here is an initial approach and will be refined for the Final Translocation Plan following upcoming studies and in collaboration with the resource agencies. This rigorous monitoring program also will permit the identification of specific factors or thresholds that may require the implementation of adaptive management. The latter will be developed through coordination with USFWS and State wildlife agencies, as appropriate.

Four subject areas will be investigated by monitoring, each of which is described below:

1. Survival
2. Threats to survival
3. Habitat stability/changes
4. Health and disease

Survival
Survival of translocatees is the main metric for evaluating translocation as a take minimization measure. Survival of translocated tortoises will be measured using two methods: mark-recapture plots and tracking.

Mark-Recapture Plots
Because of the size of the translocated population (1105 adults plus 2100 juveniles), tracking all tortoises is impractical. However, substantial information on survival of translocatees, as well as on population demography, repatriation, and health, can be gathered by repeated readings of mark-recapture plots where tortoises have been translocated. A total of 10 to 12, one square kilometer plots will be established in the recipient and control areas. Four will be in the control sites and eight will be in the Ord-Rodman, Sunshine Peak, and SUA recipient areas. Each plot will be re-surveyed for population density and structure every five years for 30 years. Standard mark-recapture techniques (e.g., Lincoln-Peterson) will be employed, wherein at least two passes would be completed and all tortoises captured. All captured tortoises will be weighed, measured, photographed, sexed, and described. Health assessments will be conducted and blood samples collected for all tortoises and habitat variables quantitatively measured (see sections below for the relevant methods).

Tracking

Survival will also be assessed via tracking of a subset of the translocated tortoises, wherein survival will be compared to control and recipient tortoises. It is anticipated that 1105 adults will require translocation, so 20% of those (220) will be monitored, with an approximately equal number of males and females. An equal number of control and resident (recipient) adults will also be tracked, for a total of 660 tortoises. Adults are arguably the critical size group that supports recovery because they are the reproducing group. But, monitoring smaller tortoises also permits an examination of recruitment. So, 5% of smaller tortoises (100) will be followed to monitor survival. An attempt will be made to find smaller tortoises at the resident and control sites, but because of the difficulty of finding them and the decreased effort on the non-clearance sites, a complete cohort of 200 small recipient and control tortoises is unlikely to be found.

Transmitters of appropriate size will be affixed to all study animals (see Section 3.1.4 for details of transmitters and attachment). Tortoises will be handled at capture to affix transmitters and conduct health assessments, during subsequent condition-index measurements and health assessments, and when transmitters require changing. As much as possible, all handling subsequent to the initial transmittering will co-occur. All handling time will be minimized to the extent possible to avoid stress to the animals.

Translocated, resident, and control tortoises will be tracked the first year according to the schedule in the *Guidance* USFWS (2010b). Based on several data sets on translocated tortoises (Nussear 2004, Field et al. 2007, Karl 2006), it is anticipated that translocated tortoises will have settled somewhat into newer home ranges after one year, at which time tracking will be decreased for all cohorts. Tortoises will be tracked weekly during high activity periods - April, May, October and the last half of September, every two weeks from June through the first half of September, and monthly during November through February.

After five years, the study group will be decreased to 150 tortoises (50 per cohort) and monitored via tracking for an additional five years, for a total of 10 years of tracking. Each time the tortoise is located, the behavior and location (UTM), plus other data as observed, will be recorded. Transmitters will be removed unless USFWS and State wildlife resource agencies have determined whether or not further action is warranted (USFWS 2011b).

Should a transmittered tortoise die, the cause of death will be determined to the extent possible. This information, along with the location and any other analysis that could assist the USFWS, CDFG, and BLM will be provided to these agencies verbally within 48 hours, or via e-mail within five business days. All fresh carcasses will be salvaged and submitted for necropsy upon direction from USFWS, CDFG, and/or BLM.

Threats to survival

Anthropogenic disturbances and potential risks to recovery and translocation success threats will be assessed both qualitatively and quantitatively and compared to current levels. During all tracking activities, observations of unusual raven or coyote activity, illegal or elevated legal OHV activity, or other unexpected or intense potential risks to tortoises will be documented. Included also will be other potential risks observed during the baseline studies during 2012 to 2014.

During each reading of the mark-recapture plots, predator populations and disturbance types and levels will be quantified. Raven numbers (individuals and nests) will be recorded and the area below nests of both ravens and large raptors will be searched for tortoise remains. Surface disturbance will be measured, by type and age, on vegetation transects (see below) on each plot. Qualitatively, OHV recreation, unforeseen developments, and any evidence of free-ranging dogs and/or coyotes will be documented and described. If warranted and practical, quantitative measurements may be collected on these factors.

For both general observations during project activities and focused observations on mark-recapture plots, adaptive management strategies, where necessary and applicable, will be discussed with the resource agencies to determine the best approaches for eliminating or decreasing the risks to tortoise recovery.

Habitat Stability or Changes

During each reading of the mark-recapture plots, habitat will be assessed to monitor changes or stability. On standardized transects, percent cover, density, frequency, species richness, species evenness, and robustness of perennial plants will be measured. On the same transects, hydrology and surface disturbance (see above) will be measured. On these same transects, annuals (percent cover and biomass by species), substrates and soils will be measured on stratified-random quadrats. All annuals present on each transect, including all tortoise forage species, will be inventoried. Exotic annuals will also be included in these measurements, to document spread and population increases. Perennials, soils, substrates, and hydrology will be measured every 10 years for 30 years. Annuals and surface disturbance will be measured every five years, with biomass measured on a subset of the mark-recapture plots every five years.

Health and Disease

Recipient Sites

The incidence of disease and other health issues will be monitored using body condition indices (mass to volume ratios [*cf* Loehr et al. 2004), clinical signs of disease, serology, and visual inspection for injuries. This will be accomplished using both telemetered tortoises and all tortoises captured on mark-recapture plots.

A subset of 50 transmittered tortoises from each cohort (i.e., 50 translocatees, 50 residents, and 50 controls) will be sampled annually during the first five years when the initial stressors from translocation are likely evident, then at 10 years when transmitters are removed. Formal health assessments will be conducted in October (prior to brumation) and possibly at other times during the year.. At these times, body condition (mass to volume ratio) also will be measured (mass, carapace length, width at Marginal 5 or 6, height). Blood samples and oral swabs will be taken and analyzed annually in the fall (before 31 October), concurrent with the evalutation of condition. In addition, any time a tortoise is handled, it will be examined for clinical signs of disease.

When mark-recapture plots are conducted, health assessments will be performed and tissue samples collected as for the telemetered group. The exception will be for those plots that are worked in the spring Prior to 15 May – USFWS *Guidance* (USFWS 2011b)states that health assessments and tissue collection will not occur until after 15 May or four weeks from the time individual tortoises have become active after winter brumation. Although mark-recapture plots will be worked only at five-year intervals, this interval is consistent with time frames in Strategy 4 of the revised Recovery Plan (USFWS 2011a).

Mycoplasma agassizii, *M. testudineum*, and *herpesvirus* are the major pathogens currently being sampled, but other pathogens may be tested as their evaluation techniques become validated for desert tortoises. Blood samples will be taken via subcarapacial or jugular venipuncture; oral mucosa may be sampled with oral swabs. A physical examination, including the oral cavity, will focus on clinical signs of disease, body condition, and ectoparasites. Methods detailed in *Health Assessment Procedures for the Desert Tortoise (Gopherus agassizii): a Handbook Pertinent to Translocation* (USFWS 2011c) will be followed for all sampling techniques and equipment. Careful attention will be paid to sample collection, processing, storage, shipping and disease transmission to optimize the sampling program and minimize any risks to tortoises. If a tortoise voids, it will be re-hydrated using epicoelomic injection of sterile saline or by nasal/oral administration of drinking water. Tortoises <100mm only will be offered fluids nasally or orally.

Any health problems observed (*e.g.*, rapid declines in body condition, perceived outbreaks of disease, mortality events) will be reported to the USFWS, CDFG and BLM such that appropriate actions can be taken in a timely manner.

Disease Enclosures

Some tortoises in the impact area may not be suitable candidates for translocation because of a moderate to severe nasal discharge, oral plaques, or other conditions that may compromise survival (USFWS 2011c). Based on the available current information on disease incidence in the project vicinity, only 4.1% (6 of 146 tortoises) along the eastern WSA boundary had abnormal nasal discharges (see Section 2.1.2, above). Using 4.1% and assuming that 1105 tortoises may need to

be translocated, then 45 tortoises may have abnormal nasal discharges. At least half of these tortoises (20) will be established in experimental disease pens to examine vertical transmission of disease (i.e., through eggs) and disease progress of individual tortoises. The pens will be on base, probably at the Tortoise Research and Captive Rearing Site (TRACRS) for protection. There are already pens at TRACRS, but should any additional pens be constructed, then any resident tortoises will be removed and relocated a short distance away (<200 m). Pen design and tortoise maintenance will follow the recommendations in Attachment 1 of the *Guidance* (USFWS 2011b). Health assessments will be conducted and blood samples taken on the schedule for all health sampling (see above). Female tortoises will be radiographed and monitored for oviposition, in order to examine vertical transmission of disease in progeny, using techniques currently permitted on the Combat Center for headstarting purposes.

2.5 RESEARCH

In addition to effectiveness monitoring, the research portion of the translocation program presented here is the initial approach and will be refined for the Final Translocation Plan following upcoming studies and in collaboration with the resource agencies.

Two main research topics will be explored, both of which are anticipated to provide robust results that are topical and important for recovery:

1. Experimental translocation densities
2. Repatriation

No other research is currently proposed. However, other post-translocation research topics offering the possibility of providing robust results that might assist in future recovery actions, including translocation, may be considered during the pre-translocation study period from 2012-2014.

Experimental Translocation Densities

The USFWS *Guidance* recommends that post-translocation densities (translocatees plus residents) in the recipient area not exceed the 68% confidence interval from the mean density of the relevant recovery unit (USFWS 2011b). For the land acquisition project, this would result in a post-translocation maximum of 5.6, based on a mean Western Mojave Recovery Unit density of 4.0 (USFWS 2011b: Table 3). However, release rates will be higher for the land acquisition project, up to 15 tortoises/km^2 (Table 7), double the current density of 7.5 tortoises/km^2 in the Ord-Rodman sampling stratum within the Western Mojave Recovery Unit. This approach is supported by the much higher tortoise densities seen in the last 15 to 30 years (see Section 1.1, above), and tests the hypothesis that the declines may have little or nothing to do with the carrying capacity of the existing habitat. Rather, the habitat may be capable of supporting higher densities

than are currently present in the recipient area. Also, this experimental approach will assist USFWS in guiding future post-translocation densities.

To address these questions, stocking densities on the eight mark-recapture plots in the recipient areas (see Effectiveness Monitoring, above) would be moderate (1.5 times the Ord-Rodman density) on four plots and high (2.0 times the Ord-Rodman density) on four plots. The four plots in the control areas would serve as the lowest stocking densities as they would receive no translocated tortoises. The location of these 12 plots, and even the number of plots, would be refined during density and habitat studies over the next three years, to maximize the quality of the research.

Survival, population density, population structure, condition indices, and health status would be measured on these 12 plots every five years for 30 years. Habitat variables, disturbance, and threats would be measured at the same time. (Methods are discussed in Effectiveness Monitoring, above.) For the first five years after translocation, a single pass (as opposed to two passes for mark-recapture), at 100% coverage, would be made over each plot to identify mortality, presence of translocatees, and approximate number of tortoises during the early phases of translocation. During each survey, all tortoises and carcasses would be recorded (by each animal's number) and clinical signs examined.

Repatriation

Repatriation is a technique wherein tortoises are translocated to a site formerly or currently inhabited by tortoises (*sensu* Dodd and Siegel 1991) in an effort to either repopulate the site or elevate the densities. But, unlike simple translocation to unfenced sites where tortoises may travel away from that site, the translocatees are fenced for a period of time so that, when the fences are removed, the tortoises remain because they have established home ranges and become part of the social hierarchy. In this way, specific locations can be augmented, a critical feature if translocation is targeting depressed, depleted or other specific areas. Results from one repatriation study in the western Mojave Desert (Karl 2006) strongly suggest that the technique has merit.

Repatriation experiments associated with the land acquisition project will evaluate this technique as a recovery action, especially for depressed or depleted populations. Four to six sites, each 2.59 km^2 (1 mi^2) in size, will be identified on which tortoise exclusion fencing (see Section 3.1.6, below, for fencing details) will be established around the perimeter. The most likely locations will be on the proposed SUAs Other sites will be explored in the next few years based on upcoming surveys, as well as refinements and changes (if any) in project maneuvers in the WSA.

The number of tortoises that will be translocated to these sites will attempt to result in post-translocation densities of residents and translocatees that approximate historic densities (Table 8). It is assumed that the SUAs hosted higher densities than have been documented in the last decade, based on earlier surveys and documented declines. In total, approximately 110 tortoises will be translocated to the repatriation sites.

Table 8. Number of tortoises to be translocated to four potential repatriation sites.

Proposed Repatriation Area	Current Tortoise Density[1] (# tortoises/km^2)	Post-Translocation Density (# tortoises/km^2)	Number of Tortoises to be Translocated
Northern SUA in WSA – two sites	12.9	26	
Site 1			13 x 2.59 = 34
Site 2			13 x 2.59 = 34
SSA SUA – two sites	7.9-8.0	16	
Site 1			8 x 2.59 = 21
Site 2			8 x 2.59 = 21
Total			**110**

Tortoises in the repatriation study will be transmittered and monitored for survival and general health through body condition indices, clinical signs, and serology identically to the methods and schedule identified above in the section on Effectiveness Monitoring. Tracking will follow the schedule for all telemetered tortoises in the translocaton program, during which locations, burrow use, and behavior will be recorded. The tortoise exclusion fencing will be removed two years after initial translocation to assess site repatriation and permit tortoises to become members of the greater population (i.e., rather than segregated from the population). Site repatriation will be assessed by continued monitoring of subsequent tortoise movements and comparing them to those of control tortoises. (The same control used for tracking the larger group of translocated tortoises will be used.) Tracking will end at Year 10, consistent with the cessation of tracking on the larger telemetered group.

Variations in removal time of fences, the number and size of repatriation sites, and other experimental features may be refined prior to the Final Translocation Plan if newer information suggests such changes.

3.0 PHYSICAL PROCESSES OF TRANSLOCATION

The following section describes procedures to be conducted prior to and during translocation. Several must be completed and approved by USFWS before translocation can begin. In addition, no tortoises will be translocated until the Biological Opinion is issued and certain other conservation actions completed per the BA (e.g., land transfer

[Navy 2011a]). In addition, all surface-disturbing activities that may affect cultural resources will be conducted in coordination with NREA..

3.1 PROCEDURES APPLICABLE TO ALL ACTIVITIES

3.1.1 Authorized Handlers

USFWS describes a single designation for biologists who can be approved to handle tortoises - "Authorized Biologist" (AB) (http://www.fws.gov/ventura/speciesinfo/protocols_guidelines/docs/dt; USFWS 2009a). Such biologists have demonstrated to USFWS that they possess sufficient desert tortoise knowledge and experience to handle and move tortoises appropriately. Specific ABs will be approved to conduct specific tasks, including such specialized tasks as health assessments, blood sampling and transmitter attachment. Only those biologists authorized by USFWS and CDFG can conduct specific tortoise handling tasks and clearance surveys. For USFWS, ABs are permitted to approve specific desert tortoise monitors to assist in certain tasks, at the AB's discretion, without further approvals from USFWS. Direct supervision of monitors by the AB (i.e., voice and sight contact) is required for all clearance surveys and certain other specialized tasks, but limited tortoise handling (e.g., removal from harm's way) may occur without supervision, following appropriate training and approvals from the ABs.

3.1.2 Handling Techniques and Temperatures

All tortoise handling will be accomplished by techniques outlined in the USFWS *Field Manual* (2009b: Sections 7.6-7.8), including the most recent disease prevention techniques (e.g., USFWS 2011c).

Handling will adhere to USFWS (2010b) handling guidelines for temperatures which state that tortoises can only be handled when air temperatures, measured at 5 cm (2 in) above the ground (shaded bulb), are not expected to exceed 35°C (95°F) during the handling session. If the air temperature exceeds 35°C during handling or processing, desert tortoises will be kept shaded in an environment where the ambient air temperatures do not exceed 32.7 °C (91°F) and air temperature does not exceed 35°C. The desert tortoise will not be released until air temperature at the release site declines to 35°C.

Tortoises must go underground to escape surface heat at ground surface temperatures of 43°C (109°F) (Karl unpub data) to 45°C (113°F) (Zimmerman et al., 1994). Because surface temperatures can easily exceed 43°C when air temperatures at two inches are still below 35°C, the more conservative temperature will govern all tortoise handling described in this Plan, to minimize harm to tortoises. In other words, the USFWS guidelines will be followed except in situations where ground temperature exceeds 43°C.

Releases at translocation should occur when air temperatures at 5 cm (2 in) above the ground surface range from 18-30°C (65-85°F) and are not forecasted to exceed 32°C (90°F) within 3 hours of release or 35° (95°F) within 1 week of release (USFWS 2011b).

The rationale for the higher temperature constraints is that tortoises must find or dig new refuges in the potentially unfamiliar translocation area prior to the onset of lethal daily temperatures. Additionally, forecasted daily low temperatures should not be cooler than 10° C (50°F) for one week post-release.

3.1.3 Data Gathered During Initial Capture

Each captured tortoise will be processed at initial capture. This will apply to baseline surveys during 2012 to 2014, and clearance surveys. The gender, carapace length, width along the widest area between and inclusive of Marginals 5 and 6, height at the third vertebral, distinguishing morphology, clinical signs of disease, injuries (location, severity, source, state of healing), capture site location and description, and the amount of void, if any, will be recorded. In addition, the tortoise will be photographed and drawn. Each tortoise will be assigned an individual number, with a number series to be provided by USFWS. Marking techniques will be approved by USFWS, but temporary marks using very small epoxy numbers (e.g., clear epoxy over a small, indelible number on a correction fluid [Wite-Out©] background) on a costal or interior marginal area that receives little to no abrasion are suggested, with a project-specific identifier. Such numbers will last for several years.

3.1.4 Transmitters

Larger tortoises will receive Holohil R1-2B transmitters (24 mm wide by 11 mm thick; 14.5 g; www.holohil.com); juvenile tortoises will receive smaller transmitters (e.g., Holohil BD-2 – 2.0 g), appropriate for their mass and size, in no case >10% of the tortoise's mass. Transmitters will be epoxied to a carapace scute using five-minute gel epoxy. For males and juveniles, transmitters will be affixed to the fifth vertebral; for females, transmitters will be affixed to the anterior carapace in the most appropriate location for the animal's shell shape that will preclude interference with righting. The transmitter antenna will be fed through a plastic sheath with a diameter slightly greater than the antenna. This sheath will be epoxied low on the carapace, just above the marginal scutes, and split at the scute seams (growth areas) to preclude distortion of the tortoise's shell during growth. This technique permits the antenna to remain protected from abrasion, but move freely, thereby not affecting tortoise growth. Because the antenna sheath is tightly curved on a very small tortoise, potentially constricting antenna movement with subsequent growth distortion, much more of the antenna will remain free on small tortoises. Transmitter specifics (manufacturer, serial number, frequency, installation and all change dates) will be recorded in a project spreadsheet for all tortoises. Transmitters will be changed as necessary, earlier than battery life suggests or when the units appear to be malfunctioning.

3.1.5 Tortoise Transportation and Holding

Tortoises that only need to be moved a few hundred feet (e.g., during fencing) will be hand-carried to the release site. Each tortoise that is hand-carried will be kept upright and the handler, wearing disposable examination gloves (one pair per tortoise), will move the

tortoise as quickly and smoothly as possible. Tortoises that must be moved farther from the capture site or temporarily held in a climate-controlled situation will be sequestered in individual, sterilized plastic tubs with taped, sterilized lids or single-use cardboard boxes with lids. During transport by vehicle, the tortoise tub will be kept shaded and the tub will be placed on a well-padded surface that is not over a heated portion of the vehicle floor. These measures are consistent with USFWS guidelines (2009a: Section 7.10).

Depending on environmental conditions and hydration states, tortoises to be translocated may need to be hydrated within 12 hours before release, according to existing protocols (USFWS 2011b). The latter may include epicoelomic injection of sterile saline or nasal/oral administration of drinking water, at rates identified in USFWS (2011c). Tortoises <100mm will only be offered fluids nasallly or orally. The tortoise's mass following this procedure will be recorded. Should a tortoise void between capture and release, it will be re-hydrated using these techniques and thoroughly rinsed to remove potential attracting odors to predators.

3.1.6 Exclusionary Fencing

Fence construction may be completed during any time of the year (USFWS 2011b).

Exclusion fence material will be galvanized one-inch by two-inch vertical wire mesh fence, extending at least two feet above the ground and buried at least one foot. Although unlikely, where burial is impossible, the mesh will be bent at a right angle toward the outside of the fence, at or below ground level, with the bent portion anchored by stakes and further secured by rocks and soil to prevent tortoises from digging under the fence. Tortoise-proof gates will be established at all site entry points, to remain closed except during entry by vehicles. If shown to be effective and not potentially dangerous to tortoises, tortoise "cattle guards" may be installed instead of or in addition to gates.

Temporary fencing will follow guidelines and materials for permanent fencing except in very temporary situations, when silt fencing may be used. Rebar may replace t-stakes or chain link poles for temporary fencing. In both cases, supporting stakes will be spaced sufficiently (e.g., ≤8 ft for wire mesh; ≤5 ft for silt fencing) to maintain fence integrity. Fencing may be buried if it would not create a biologically significant disturbance; where surface disturbance could be biologically significant, it will be bent outward at the ground level, with the bent portion tacked and/or held down by rocks, soil, and/or ground staples; anchors will be driven a minimum of every two feet.

All permanent exclusion fencing will be inspected monthly and during/immediately after all rainfall events where soil and water flow through washes or overland and could damage the fence or erode the soil underneath. Temporary fencing will be inspected at least weekly if activities are occurring in the vicinity that could damage the fence. Any damage to any fencing, either permanent or temporary, will be repaired immediately. If it cannot be repaired immediately, any gaps that are open to tortoise habitat will be continuously monitored until the gap can be repaired, to ensure that a tortoise has not

entered the site through the gap. For permanent fencing, gaps must be repaired within two days.

3.2 CLEARANCE AND TRANSLOCATION DURING SPECIFIC PROJECT PHASES

Tortoise clearance and translocation may occur during fence construction on the SUAs and repatriation sites and prior to the first MEB exercises.

3.2.1 Exclusionary Fencing

Fencing may occur on those sides of the SUAs that are near proposed maneuver areas, on the repatriation sites, and potentially on other areas to exclude tortoises from high-use areas (e.g., OHV areas). Temporary fencing may be used to exclude tortoises until the permanent fence is installed or where the AB believes that it would provide better protection than monitoring by BMs.

Surveys and Monitoring during Fence Construction

Within 24 hours prior to fence installation, biologists will survey the staked fenceline for all burrows that could be used by tortoises and for tortoises. Surveys will provide 100% cover for all areas to be disturbed by fencing and a swath of at least 90 ft centered on the fenceline, using 5-m-wide transects. Tortoise burrows will be mapped using Global Positioning System (GPS), and the burrow size and occupancy recorded; if not occupied, indications of how recently the burrow was used will be recorded. Occupancy will be determined by a combined use of reflective mirrors, probing, tapping the entrance, listening, and/or scoping with a fiberoptics scope. In all cases, occupancy will only be verified only if all interior edges of the burrow can be felt, such that a “hidden” chamber at the end is not missed. Any tools used inside a burrow that could be used by a tortoise will be disinfected before use in another burrow, via the most recent disease prevention techniques (e.g., USFWS 2011c). Burrows may be flagged, if it will not attract poaching. (Flagging also may attract predators, but can be placed at a standardized distance and direction from burrows.)

Because fencing does not need to follow straight lines or property boundaries, all burrows over 0.5 m meter in length, or any active burrows, will be avoided to the side of the fence opposite intensive future MEB exercises. Shorter burrows will be visually and tactilely examined for occupancy by tortoises and other wildlife. If occupancy is negative or cannot be established, the burrow will be carefully excavated with hand tools, using standardized techniques approved by USFWS (2009a) and the Desert Tortoise Council (1994), including disinfection techniques for all tools.

All fence construction will be monitored by approved biologists to ensure that no desert tortoises are harmed. The level of monitoring will depend on the specific fencing activity,

but at least one BM will accompany each separate construction team, such that no driving, trenching, fence pulling, or any surface disturbing activities will occur without the immediate presence of a BM. Maps of burrows from the pre-construction survey will be provided to all BMs to assist in protecting tortoises. Such maps will also be potentially useful for relocating tortoises.

If exclusion fencing is installed when tortoises are known to be active, either from spring through fall or in winter during unusually warm weather, then all installed exclusion fence (partial or complete) will be checked 2-3 times daily for two weeks to ensure that no tortoise is fence-walking to the point of exhaustion or overexposure. If midday temperatures are above thresholds at which tortoises must go underground to escape heat (approximately 42ºC ground temperature), then one of the fence checks should occur one hour prior to this threshold being reached. This same process should occur for the first 2-3 weeks of the activity season if the fence is installed in winter, when tortoises are underground.

Any fence-walking tortoise would be relocated as described below in Tortoise Disposition during Fence Construction.

Tortoise Disposition during Fence Construction

All tortoises found during fencing will become part of the translocation study, either as translocatees (if moved from fenced portions of the maneuvers' routes) or residents. However, none will be translocated until such time as the translocation begins for the entire cohort. All will receive health assessments, if they have not been previously assessed, and transmitters will be attached.

3.2.2 Clearance Surveys in the Acquisition Areas

A clearance survey for tortoises and nests will be conducted inside the designated MEB medium- and high-intensity areas, in the autumn prior to the initial MEB exercises the following year. At this time, this is anticipated to occur in Fall 2014, with translocation occurring late in the fall or the following spring. Tortoises will be transmittered at this time and a current health assessment and blood sampling completed, if one has not been done in the previous year. All tortoises will be monitored *in situ* until translocation the following spring. A translocation review package, including a disposition plan, health assessment sheets will be submitted to the USFWS for review (USFWS 2010b). Juvenile tortoises that are too small to wear transmitters will be moved to established juvenile pens at TRACRS or SUAs where they may become part of the head-starting program or be held until translocation the following spring.

Clearance surveys during September and October will coincide with heightened tortoise activity to maximize the probability of finding all tortoises. Per USFWS (2009b) guidelines, surveys will include at least two passes. All tortoise sign will be mapped and evaluated (e.g., type, age, size) during all passes, and all scat collected. During subsequent passes, areas where fresh scat is found will prompt concentrated searches. If,

on the second pass, a tortoise is found, *or* no tortoise has been found where there is a concentration of recent sign, *or* fresh scat or burrows are found without an associated tortoise, then a third pass will be conducted in the area of sign. On each subsequent pass, an attempt will be made to view all shrubs and the terrain from as many angles as possible. To achieve this, transects programmed into GPS units will be either perpendicular, parallel but offset, and/or approached from the opposite direction on each subsequent pass (Karl and Resource Design Technology, Inc., 2007).

Transects will be spaced a maximum of 5 m (15 ft). Transects narrower than 5 m wide will be used if dictated by dense shrub vegetation or where visibility is otherwise compromised. Generally, burrows are excavated and collapsed during clearance surveys, to ensure that all tortoises have been found. However, the training areas will not be fenced, so tortoises will be able to move into those areas. Furthermore, other wildlife use the burrows. So, only those burrows that are fresh will be excavated to determine occupancy, but none will be collapsed. To assist the identification of currently used burrows, all burrows will be inspected and assessed for occupation or recent use by tortoises, on each pass, gated with small sticks along the entrance to detect future use, mapped and flagged. During excavation, attention will be given to potential tortoise nests (see below). This method also will be used the following spring, during translocation, if no transmittered tortoise is in the burrow.

Tortoises will be translocated the following spring at least one week before daily, midday temperatures are expected to exceed 32°C (90°F) air temperature (at 5 cm) or 109°F (43°C) ground surface temperature, whichever is lower. The rationale is that tortoises must find or dig new refuges in the potentially unfamiliar translocation area, prior to the onset of lethal daily temperatures. But, it is always important to consider that project scheduling may change from the current, anticipated schedule. This could result in clearance surveys being conducted at a later date or outside temperatures that are higher than the USFWS guidelines for translocation. For instance, even though clearance surveys are permitted to be conducted during periods of elevated tortoise activity - April, May, September and October-, much of this period is well past the time when it is safe to translocate in spring or prior to safe, autumn translocation temperatures. In most cases, tortoises would be monitored in situ, via telemetry, until the next period when ambient temperatures permit translocation. In all cases where a change in schedule would alter the methods in this translocation plan, any new approach will be submitted to and approved by the USFWS prior to translocation.

3.2.3 Final Surveys on Recipient and Control Sites

A search of tortoises on the recipient and control sites will be conducted during the Spring 2014 and during autumn when clearance surveys are conducted. During this survey, the designated number of resident and control study animals (see Sections 2.4 and 2.5, above) will be sought, transmittered and assessed for health (visual assessments and blood sampling). Survey data will be submitted on the translocation review package submitted to USFWS following Fall 2014 surveys of the impact area.

3.2.4 Translocation

No tortoise will be moved without USFWS approval of the Final Translocation Plan and the translocation review package. Tortoises will be moved under the temperatures and handling constraints identified in Section 3.1., above. All tortoises will be released under shrubs and the UTM coordinates recorded. Artificial burrows may be dug with gas-powered augers. The USFWS (2011b) recommends releasing tortoises to unoccupied shelter sites but this is problematic on two levels. Such sites need to be found, which could be difficult even though the sites will have been previously surveyed. Secondly, during an 11-year study of over 130 tortoises, it was observed that tortoises typically did not use the burrows of other tortoises, even unoccupied burrows (AE Karl, unpub. data). (Some had alliances with one or several tortoises and were often found together with these same tortoises in the same burrow. But, it was extremely rare to find them in a different tortoise's burrow.)

Juvenile tortoises, especially those under 4.4 inches (110 mm) in length, are highly subject to depredation by canids, badgers, and ravens, and require special consideration for successful translocation. Depending on the number of juveniles that are translocated, one or more predator-proof enclosures may be constructed in the northern WSA SUA and SSA SUA to facilitate safe translocation. Materials will either be five-foot-tall "Non-Climb", two- by four-inch vertical mesh fencing, buried at least one foot and with avian netting over the top, or other suitable predator-proof construction (e.g., TRACRS design). The size of the enclosures would depend on the number of tortoises found, but would be a minimum of 8 m x 8 m in diameter, or larger as necessary, to accommodate more juvenile tortoises and/or a longer period of penning. (Morafka *et al*. 1997 successfully penned juvenile tortoises at the density of 152 to 305 animals per hectare [62 to 123 tortoises per acre].) All pens will be monitored daily until all juvenile tortoises are translocated, to ensure that predators are not damaging the enclosure. Juveniles may be translocated passively or actively, depending on predator interest in the enclosure, juvenile tortoise behavior in the enclosure, or other information. Modifications to the design and process will incorporate new and relevant head-starting techniques used at TRACRS.

Any nests found between November 1 and April 15 are unlikely to be viable and will not be moved; hatching is typically completed by October (Henen and AE Karl, unpub. obs.). In the event that nests are found between April 15 and October 31, the nests will be moved. Eggs will be inspected to determine if they are viable and, if so, will be moved to an identical microsite (e.g., cover, plant species, soil type, substrate, aspect) on the recipient sites using standard techniques (e.g. Desert Tortoise Council 1994, USFWS 2009b). Translocated nests will be fenced with open-mesh fencing (e.g. 3-5 cm wide mesh) that will permit hatchlings to escape but prevent depredation by canids that might be attracted by human scent to the new nests Open-mesh fencing or avian netting also will be installed on the roof of the nest enclosure to prevent predator entry. Nests will be monitored from a 30-foot distance once a month until late November, at which time they will be excavated for examination. If possible, hatchlings will be weighed, measured,

photographed, described and marked. Alternatively, hatchlings will be released to nearby tortoise or rodent burrows (Henen pers. obs.)

All transmittered translocated tortoises will be located via telemetry daily for the week following translocation to ensure that no tortoise is compromised and to help avoid losing the tortoise's signal if it walks out of transmission range.

Desert tortoises that are not suitable for translocation due to moderate to severe nasal discharge, oral plaques, or other conditions that might affect survival (USFWS 2011a), and are not being used for the disease study (see Section 2.5, above) may be sent to an agency-approved facility where they will undergo further assessment, treatment, and/or necropsy.

3.2.5 Subsequent Clearances Prior to Maneuvers

During each year when maneuvers are conducted in the land acquisition area, clearance surveys would be conducted in the high- and moderate-impact areas to remove remaining desert tortoises (Navy 2011b). For any tortoise found, the standard measurements and assessments that were used on other tortoises will be completed and the tortoise numbered. Pending USFWS approval of the translocation review package, all tortoises that are suitable candidates for translocation, based on the health assessment, will be translocated to the designated recipient sites, but not in a mark-recapture plot area. All clearances will be consistent with methods described above.

4.0 REPORTING

Per the USFWS *Guidance* (USFWS 2011b), a reporting schedule will be developed during the upcoming planning process and will be delineated in the Final Translocation Plan.

5.0 ANTICIPATED SCHEDULE

Table 9 identifies the approximate schedule for translocation activities, as discussed in this plan and as are currently known.

Table 9. Schedule for translocation activities.

Date	Activity
2011	Submit General Translocation Plan
2012-2013	Recipient and Control Areas:
	Evaluate current health status, density, habitat features, risks, and land uses
	Refine site locations
2013-2014	Impact Area:
	Evaluate density
Spring 2014	Recipient and Control Areas:
	Begin surveys for study cohorts and attach transmitters/health assessments
Summer 2014	Submit Final Translocation Plan
Fall 2014	Impact Area:
	Clearance surveys; conduct health assessments, attach transmitters, monitor tortoises *in situ*
	Submit translocation review package to USFWS
	Recipient and Control Areas:
	Finish surveys for study cohorts and attach transmitters, conduct health assessments
	Build fences, disease pens and other enclosures
Spring 2015	Impact Area:
	Translocate tortoises and initiate monitoring program

6.0 LITERATURE CITED

Berry, K.H. and L.L. Nicholson. 1984. The distribution and density of desert tortoise populations in California in the 1970s. Chapter 2 *in* K.H. Berry (ed.) Status of the Desert Tortoise (*Gopherus agassizii*) in the United States. Unpublished Report from Desert Tortoise Council to U.S. Fish and Wildlife Service, Sacramento, California. Order No. 11310-0083-81.

Boarman, W.B. Kristan, III, and A.P. Woodman. 2008. Neither here nor there: current status of Sonoran desert tortoise populations in Arizona. Paper presented at the 2008 Desert Tortoise Council Symposium, Las Vegas, NV.

California Department of Fish and Game, Natural Diversity Data Base. 2010. Natural Communities List. Available online at http://www.dfg.ca.gov/biogeodata/vegcamp/natural_comm_list.asp.

Desert Tortoise Council, 1994 (rev. 1999). Guidelines for handling desert tortoises during construction projects. E.L. LaRue, Jr. (ed.) Wrightwood, CA.

Dodd, C.K. and R.A. Seigel. 1991. Relocation, repatriation, and translocation of amphibians and reptiles: are they conservation strategies that work? Herpetologica 47(3):336-350.

Federal Geographic Data Committee. 2008. National Vegetation Classification Standard, Version 2. FGDC-STD-005-2008. FGDC Secretariat. U.S. Geological Survey, Reston, VA.

Field, K.J., C.R. Tracy, P.A. Medica, R.W. Marlow, and P.S. Corn. 2007. Return to the wild. Translocation as a tool in conservation of the desert tortoise (Gopherus agassizii). Biological Conservation 136:232-245.

Jones and Stokes Associates, Inc. and Kiva Biological Consulting. 1998. Technical synthesis report for a desert tortoise survey on the Marine Corps Air Ground Combat Center Twentynine Palms, California. Contract No. DACW05-95-D-0003, Task Order 0039. Prepared for the U.S. Army Corps of Engineers, Sacramento District, Sacramento, California. 90 pp.

Karl, A.E. 2006. Hyundai Motor America Proving Grounds desert tortoise translocation study. 2006 annual report. Prepared for Hyundai America Technical Center, Inc. 19 pp.

---. 2001. Desert tortoise abundance in the Fort Irwin National Training Center land acquisition area: a review. Unpublished report to Chambers Group, Inc., Irvine, CA. 44 pp plus appendices.

---. 2002. Desert tortoise abundance in the Fort Irwin Training Center Land Acquisition Area: second year studies. Unpublished report prepared for Charis Corporation, Temecula, California. 46 pp plus appendices.

---. 2004. Drought: acute effects and impacts to recovery of the desert tortoise. Paper presented at the 2004 Desert Tortoise Council Symposium, Las Vegas, NV.

---. 2010a. Marine Corps Air Ground Combat Center. Desert tortoise density in the land acquisition study areas. Submitted to Naval Facilities Engineering Command Southwest, San Diego, California. 36 pp plus appendices.

---. 2010b. Disturbance in the West and South Study Areas. Disturbance in the west and south study areas: draft summary of methods and results. 23 pp.

---. 2010c. Ridgecrest Solar Power Project. Analysis of population and species impacts to the desert tortoise, due to the siting of this project in its current location. Docketed 29 April 2010. 19 pp.

--- and Resource Design Technology, Inc. 2007 Mesquite Regional Landfill. Initial desert tortoise clearance-October 2005. Submitted to the Los Angeles County Sanitation Districts, Whittier, CA. 28 pp plus attachments.

Kiva Biological Consultants. 2001. Technical synthesis report for desert tortoise surveys at Marine Corps Air Ground Combat Center Twentynine Palms, California. Prepared for Natural Resources and Environmental Affairs Division, Marine Corps Air Ground Combat Center, Twentynine Palms, California. 68 pp.

---. 2008. Summary report for two two desert tortoise trend study plots, health assessments, and focal observations conducted on the Marine Corps Air Ground Combat Center Spring 2008. Prepared for Naval Facilities Engineering Command Southwest, San Diego, California. 39 pp.

---. 2009. Preliminary Report for Mark-Recapture Plots. 27 July 2009 letter to Brian Henen, NREA. 7 pp.

Loehr, V.J.T., B.T. Henen, and M.D. Hofmeyr. 2004. Reproduction of the smallest tortoise, the Namaqualand speckled padloper, *Homopus signatus signatus*. Herpetologica 60:444-454.

Morafka, D.J., K.H. Berry, and E.K. Spangenberg. 1997. Predator-proof field enclosures for enhancing hatching success and survivorship of juvenile tortoises: a critical evaluation. Pp. 147-165 *in* the New York Turtle and Tortoise Society, Proceedings: Conservation, Restoration, and Management of Tortoises and Turtles – an International Conference.

U.S. Department of the Navy. 2011a. Final Biological Assessment Land Acquisition and Airspace Establishment to support large-scale Marine Air Ground Task Force live-fire and maneuver training. July 2011. Prepared by AMEC Earth and Environmental, Inc.

---. 2011b. Final Environmental Impact Statement Land Acquisition and Airspace Establishment to support large-scale Marine Air Ground Task Force live-fire and maneuver training. October 2011. Prepared by TEC, Inc.

McLuckie, A.M., M.R.M. Bennion, R.A. Fridell, and R. Radant. Status of the desert tortoise in the Red Cliffs Desert Reserve. Paper presented at the 2006 Desert Tortoise Council Symposium, Las Vegas, NV.

Nussear, K.E. 2004. Mechanistic investigation of the distributional limits of the desert tortoise, *Gopherus agassizii. Ph.D. Diss.* University of Nevada, Reno.

Sawyer, T., T. Keeler-Wolf, and J.M. Evens. 2009. A manual of california vegetation. Second Edition. California Native Plant Society Press. Sacramento, CA. 1300 pp.

Smith, J. 2011. Health sampling results for 2009 and 2010. Unpublished NREA data.

TEC. 2011. Draft displaced off-highway vehicle recreation study. Prepared for the EIS for land acquisition and airspace establishment. Marine Corps Air Ground Combat Center, Twentynine Palms, CA. 102 pp.

United States Bureau of Land Management. 2005. Final environmental impact report and statement for the West Mojave Plan, a habitat conservation plan and California Desert Conservation Area Plan amendment. BLM California Desert District Office, Moreno Valley, CA.

---. 2006. Environmental assessment livestock grazing allotment authorization: EA Number EA-680-06-78. Allotment Name: Ord Mountain. BLM Barstow Field Office. 84 pp.

United States Department of the Navy. 2011a. Final Biological Assessment Land Acquisition and Airspace Establishment to support large-scale Marine Air Ground Task Force live-fire and maneuver training. July 2011. Prepared by AMEC Earth and Environmental, Inc.

---. 2011b. Final Environmental Impact Statement Land Acquisition and Airspace Establishment to support large-scale Marine Air Ground Task Force live-fire and maneuver training. October 2011. Prepared by TEC, Inc.

United States Fish and Wildlife Service. 1994. Desert Tortoise (Mojave Population) Recovery Plan. U.S. Fish and Wildlife Service, Portland, OR. 73 pp. plus appendices.

---. 2006. Range-wide monitoring of the Mojave Population of the desert tortoise: 2001-2005 summary report. Prepared by the Desert Tortoise Recovery Office, Reno, NV. 96 pp.

---. 2009a. Preparing for any action that may occur within the range of the Mojave desert tortoise (*Gopherus agassizii*). U.S. Dept. of the Interior, USFWS, Ventura Field Office, Ventura, California. Available at:

http://www.fws.gov/ventura/speciesinfo/protocols_guidelines/docs/dt/DT%20Pre-project%20Survey%20Protocol_2009%20Field%20Season.pdf.

---. 2009b. Desert tortoise field manual. Available online at (http://www.fws.gov/ventura/speciesinfo/protocols_guidelines/docs/dt/dt_fieldmanual)

---. 2010. Draft range-wide monitoring of the Mojave Population of the desert tortoise: 2010 annual report. Desert Tortoise Recovery Office, Reno, NV. 51 pp.

---. 2011a. Revised recovery plan for the Mojave Population of the desert tortoise (*Gopherus agassizii*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. 222 pp.

---. 2011b. Translocation of Mojave desert tortoises from project sites: plan development guidance. Desert Tortoise Recovery Office, Reno, NV. 27 pp.

---. 2011c. Health assessment procedures for the desert tortoise (*Gopherus agassizii*). A handbook pertinent to translocation. Desert Tortoise Recovery Office, Reno, NV. 83 pp.

Zimmerman, L.C., M.P. O'Connor, S.J. Bulova, J.R. Spotila, S. J. Kemp, and C.J. Salice. 1994. Thermal ecology of desert tortoises in the eastern Mojave Desert: seasonal patterns of operative and body temperatures, and microhabitat utilization. Herp. Monogr. 8:45-59.

APPENDIX A-3
MARCH 2016 TRANSLOCATION PLAN

This page intentionally left blank.

DESERT TORTOISE TRANSLOCATION PLAN FOR THE MARINE CORPS AIR GROUND COMBAT CENTER LAND ACQUISITION

Natural Resources and Environmental Affairs Division,
Marine Corps Air Ground Combat Center
Twentynine Palms, California 92278

March 3, 2016

Prepared by:

Alice E. Karl, Ph.D.
P.O. Box 74006
Davis, California 95617
heliophile@mindspring.com

Brian T. Henen, Ph.D.
MAGTFTC NREA, MCAGCC
Twentynine Palms, CA 92278
brian.henen@usmc.mil

TABLE OF CONTENTS

List of Tables

Attachment 1 - Figures

DESERT TORTOISE TRANSLOCATION PLAN FOR THE MARINE CORPS AIR GROUND COMBAT CENTER LAND ACQUISITION

1.0 INTRODUCTION

1.1 BACKGROUND

The Marine Corps Air Ground Combat Center (MCAGCC) at Twentynine Palms, California (the "Combat Center") is a unique Marine Corps training installation that provides a realistic battlefield environment for live-fire maneuvers. A large-scale Marine Air Ground Task Force (MAGTF) training area would include areas on the existing Combat Center as well as additional lands west and south of the Combat Center, currently known as the Western Expansion Area (WEA) and the Southern Expansion Area (SEA)[1], respectively. Associated training would enable Marine Expeditionary Brigade (MEB)-level training exercises, involving large-scale, integrated, live-fire maneuvers. MEB training exercises and supporting activities are detailed in the *Biological Assessment for the Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training* (BA; Department of the Navy [Navy] 2011a).

The BA (Navy 2011a) identified that Agassiz's desert tortoise (*Gopherus agassizii*), a federally and state-listed threatened species, is likely to be adversely affected by the proposed land acquisition and airspace establishment action. The US Fish and Wildlife Service (USFWS) issued a biological opinion (BO) in response to the BA (USFWS 2012). Several conservation actions were recommended in the BA, and approved in the BO, among them a plan to translocate tortoises from high & medium impact areas in the WEA and SEA (Figure 1) prior to training exercises. High-intensity battle activity (i.e., that likely to result in high-intensity disturbance) would occur in the more level, gently sloping terrain of the project area. While steeper and rockier areas likely would be subject to less disturbance (typically medium- or low-intensity disturbance), certain vehicles and equipment would be used to fight from covered terrain, such as rocks and reverse slopes of hills that provide cover. Wheeled re-supply and other vehicles would regularly use the Main Supply Routes (MSRs) in the project area during training.

Soil and vegetation necessary for desert tortoise habitat would be expected to be severely degraded or lost in high intensity use areas; and degraded, if not lost, in medium-intensity use areas (Navy 2011a). The proposed action is anticipated to result in major degradation (i.e., complete or nearly complete loss of vegetation and disruption of substrates) of an estimated 4,273 ha (10,559 ac) of occupied desert tortoise habitat in the high-intensity disturbance zone of the study areas. MEB training and MEB Building Block training

[1]The expansion areas were originally called "Study Areas" and "Acquisition Areas". For purposes of this plan, all are now called "Expansion Areas".

would also result in a lesser degree of degradation of an estimated 39,067 ha (96,537 ac) of occupied desert tortoise habitat in the medium-intensity training disturbance zone of the project area.

MEB training for 50 years is not compatible with the continued existence of desert tortoises in the high and medium intensity areas. If not translocated, an estimated 1105 adult tortoises and potentially 2100 juveniles would be lost from these zones of the WEA and SEA due to the intensity of training exercises (Navy 2011a). Such a loss of tortoises and tortoise habitat is not compatible with recovery of this threatened species (Navy 2011a). These numbers represent 34% and 23%, respectively, of the adult and juvenile tortoises currently living in the local population. Desert tortoises have experienced long-term and severe declines throughout their geographic range in the past two decades (Karl 2004 and 2010, McLuckie et al. 2006, Boarman et al. 2008, USFWS 2015b). Further losses of over 1000 breeding age tortoises and 2000 smaller tortoises would further compromise species recovery.

In addition, the intensive degradation of over 43,000 ha (100,000 ac) would eliminate that habitat and/or leave it in sufficiently poor quality to render it largely unusable to tortoises. Any surviving tortoises from those areas would need to re-locate to areas with intact habitat that could support them. Since the areas slated for maneuvers in the WEA are in multiple places, tortoises dispersing from the MEB disturbance zones could move into equally dangerous areas. Actively translocating these tortoises to designated locations with suitable habitat that is safe from further anthropogenic degradation, would optimize dispersal.

Translocation is necessary to support the continued existence of this population by maintaining tortoise abundance and genetic integrity. Long-term monitoring of the translocation efforts for this large cohort of tortoises will provide valuable information on translocation efficacy as a tool for species recovery. Studies that can be completed ancillary to translocation will provide important information for recovery methods. Such monitoring and studies are consistent with strategies outlined in the revised desert tortoise Recovery Plan (USFWS 2011a). In particular, the translocation of tortoises to areas with depressed or depleted populations is consistent with Recovery Plan Strategic Element 3. Monitoring survival, disease, habitat, and threats in the studies are consistent with Strategic Element 4. Performing research on translocation effectiveness, constrained dispersal, stocking densities, habitat, and disease are consistent with Strategic Element 5.

1.2 PRE-TRANSLOCATION INVESTIGATIONS AND ACTIVITIES

The BO required that three years of baseline data be collected prior to translocation. Translocation is planned for early Spring 2016, prior to the initial MEB exercises in Summer 2016. This schedule prompted a substantial amount of pre- translocation activities:

- An initial General Translocation Plan (GTP) was developed in December 2011 (Karl and Henen 2011) to provide a basic framework for translocation and further investigations prior to translocation in 2016.

- Recipient and control sites were suggested in the GTP based on a desktop analysis of several factors (e.g., proximity to WEA and SEA, elevation, land uses, long-term protection). Since 2011, these sites have been modified, deleted, and added based on a combined approach of surveys, agency consultation (USFWS, Bureau of Land Management [BLM], and the California Department of Fish and Wildlife [CDFW]), investigations of current and future land uses, and examination of data from other projects originally targeted for those sites.

- Beginning in 2012 and ongoing, field surveys have been performed to examine translocation-associated factors in both the impact areas and the recipient and control sites. These factors include:

  <u>Tortoise Density</u>
  - ◊ Mark-recapture – Established 6 new, 1 km^2, mark-recapture plots in the WEA (3) and nearby translocation area (3) in 2013; established an addtional 8 plots in translocation areas in 2015.
  - ◊ Tortoise Regional Estimate of Density (TRED) transects (Karl 2002) in the WEA and SEA (2012) and translocation areas (2013-2015).

  <u>Habitat Analyses</u>
  - ◊ Qualitative and quantitative transects in the WEA, SEA, and translocation areas, 2012-2015.

  <u>Baseline Disease Status and Behavior</u>
  - ◊ Health assessments, with tissue sampling, on 359 tortoises in two translocation areas and the impact areas, Fall 2013 and Spring 2014.
  - ◊ Attached transmitters to 114 tortoises in two translocation areas and the impact areas, Fall 2013 and Spring 2014; tortoises tracked monthly after initial two weeks of heightened tracking.

  <u>Predation</u>
  - ◊ Focused raven abundance and nest surveys in the translocation area, Spring 2014 (pilot study) and Spring 2015, continuing.
  - ◊ Canid-related trauma - analysis from health assessments on recipient and control sites, 2015 surveys.

  <u>Genetics Analysis</u>
  - ◊ Assessment of genetic differentiation among the impact and translocation areas, using a subset of 135 samples from the impact areas and disparate recipient and control sites.

- We completed tortoise clearance surveys on over 205 km^2 comprising the WEA and SEA high and medium impact areas, from September 2014 through October 2015. In brief, clearance surveys coincided with heightened tortoise activity in spring and fall to maximize the probability of finding all tortoises.

Two complete passes were walked, with transects spaced at five-meter intervals; the second pass was walked perpendicular to the first to maximize observing all surfaces. Teams were limited to five people for maximum search efficiency, with the central navigator following designated coordinate lines ("UTMs") to ensure complete coverage of the survey area. Recent tortoise sign was mapped and qualified relative to size and age to assist in finding every tortoise associated with fresh sign; additional, concentrated surveys occurred where no tortoise was initially found near any fresh sign. Similarly, when new hatchlings were found, a concentrated search was employed to find other hatchlings from the clutch.

All tortoises of adequate size were transmittered; juvenile tortoises too small to wear transmitters were moved to new holding pens at Natural Resources and Environmental Affairs Division's (NREA's) Tortoise Research and Captive Rearing Site (TRACRS). *In situ* monitoring of all tortoises with transmitters was accomplished by monthly tracking, following an initial two-week period of intensive tracking after transmitter attachment. We conducted health assessments on all tortoises per USFWS current guidelines (USFWS 2015a; see Section 6.3, below, for details of these techniques.)

To help understand mortality rates, we recorded each tortoise shell remain that was sufficiently complete to represent a single tortoise. Each shell was sexed, sized, and aged relative to time since death, and the cause of death was recorded, if determined.

- Holding pens with 186 individual units were built in 2015. These were constructed at the TRACRS headstarting facility to resemble the existing pens.

- Tortoises were sought on the recipient and control sites in Fall 2015 to transmitter resident and control tortoises. We used standardized, 10 meter-wide transects throughout most of each site to sample representative habitats that would be occupied by translocatees and residents, adding focused searches in better habitats. Shell remains were recorded as for clearance surveys. We performed health assessments on all transmittered tortoises, plus additional tortoises encountered to augment our knowledge of each site's disease status.

This final plan incorporates these additional data and analyses, as well as collaboration with the resource agencies.

2.0 IMPACT AREA BASELINE DATA

2.1 NUMBER OF TORTOISES TO BE TRANSLOCATED

We found 1,410 tortoises during clearance surveys of government lands in the WEA and SEA, of which 1,175 adult and juvenile tortoises were transmittered and an additional 235 smaller tortoises were transferred to TRACRS holding pens (Table 1). Private lands within the WEA that are still in negotiation should provide approximately 18 additional tortoises. Subtracting lost tortoises due to inactive transmitters and mortality, MCAGCC anticipates translocating 1,138 transmittered tortoises next spring, plus juveniles from the holding pens that have grown large enough to avoid raven predation.

The BO (USFWS 2012) requires MCAGCC to perform subsequent clearance surveys on any square kilometer where at least three tortoises were found on the previous survey. Estimates of survey efficacy (Karl 2002) combined with findings from previous surveys suggest that another 104 adult and juvenile tortoises will be found in these subsequent surveys. After five years, we estimate that the cumulative total of tortoises to be translocated will approximately equal 1,495 tortoises, including 998 tortoises ≥160 mm in carapace length (MCL) and 497 smaller tortoises (Table 1).

Table 1. Cumulative number of tortoises expected to be translocated from the impact areas, including those already found (Found) and those anticipated from future clearances (Additional). MCL=Midline Carapace Length.

Tortoises	**≥160 mm MCL**			**<160 mm MCL**	
	Male	**Female**	**Unknown Sex**	**Transmittered**	**Holding Pens**
Found:					
WEA	457	334	43	218	235
SEA	41	40	1	4	0
Subtotal	*498*	*374*	*44*	*222*	*235*
Total for Size Group	916			457	
Additional:					
13 km^2 of Private Lands	12			6	
Subsequent Annual Clearances[1]	70			34	
Total	998			497	

1 The number of additional tortoises is based on finding 74% of the tortoises present on each pass (Karl 2002), or 93% cumulatively after two passes.

The actual number of tortoises ultimately found may exceed estimates, which are based on density inside the impact area. Our surveys capture not only tortoises that may live primarily inside the impact area, but those outside whose home ranges overlap the impact area. Based on a 720 m home range diameter (TRW 1999), any male tortoise within 720 m of the impact area could be captured. The large edge-to-interior ratio of the battalion routes, especially, but also the boundary of the main objectives, increases the possibility that additional tortoises will be captured.

3.0 RECIPIENT AND CONTROL SITES

3.1 SITE CHOICE AND CRITERIA

Recipient and control sites were identified and refined relative to size and location following the three-year program of surveys, literature review, and discussions with the resource agencies and stakeholders. The final number of tortoises found during the clearance surveys further dictated the number and sizes of the sites.

Recipient areas must meet several important criteria to ensure that translocation will successfully support tortoise recovery:

- Sites should be part of a connected system of occupied desert tortoise habitat.
- Preferably, tortoise populations on and/or near the recipient areas are depleted or depressed, so that translocation repatriates a formerly occupied site and does not conflict with carrying capacity constraints.
- The lands must comprise sufficiently good habitat that they are either currently occupied or could be occupied by the desert tortoise. Habitat on the recipient areas must be suitable for all life stages.
- Sites that are protected or receive adequate protection because of proximity to conservation lands are preferred.
- Lands should not be subject to elevated threats (e.g., predation, disease, exotic invasive plant species) or intensive historic, current or future land uses (e.g., recreational use, development, habitat degradation) that could compromise habitat recovery or render it too lengthy to be useful during the initial translocation years. These considerations also must extend to surrounding lands onto which tortoises might disperse.

These criteria are consistent with the goals, objectives, and recovery strategies of the Recovery Plan USFWS (2011a) and USFWS translocation guidance (USFWS 2011b). The latter further requires that:

- Disease prevalence within the resident desert tortoise population is less than 20 percent.

- Recipient sites should be within 40 km of the impact area, with no natural barriers to movement between them, to ensure that the desert tortoises at the two sites were likely part of a larger mixing population and similar genetically.
- Release sites must be at least 10 km from major unfenced roads or highways.
- Recipient areas include a dispersal radius of 6.5 km from release points.

MCAGCC will translocate more wild desert tortoises than any prior translocation. The magnitude of successfully translocating roughly 1500 tortoises not only elevates the recovery concerns, but elevates the logistical complexities in determining the locations, number and sizes of recipient sites and corresponding control sites. USFWS (2011b) recommends that post-translocation densities of adult tortoises not exceed one standard deviation (SD) of the most current density in the recovery unit. For MCAGCC, the mean Western Mojave Recovery Unit density is 2.8 adult tortoises/km^2 (USFWS 2015b), which translates to a post-translocation maximum of 3.7, an increase of 0.9 tortoises/km^2. Thus, translocating 998 adults (Table 1) would require 1108 km^2.

Beyond the basic criteria for recipient sites that will optimize translocation, there are additional considerations pertaining to monitoring and research, which are critical components for evaluating the success of the translocation program:

- Replicates, both among sites and individuals, are crucial for statistically examining translocation effects.
- Control sites must be similar to recipient sites, but not influenced by translocation to recipient sites. USFWS (2011b) recommends a separation distance of approximately 10 km (6.25 mi).
- Experimental sites must be sufficiently separated to avoid co-interference.
- The intensive tracking schedule required by USFWS (2011b, 2012) requires that individuals be found virtually weekly throughout the year, largely because translocatees travel erratically and unpredictably and can be lost easily. The tracking requirements for Year 1 are:

  Within 24 h of release
  Twice weekly for first two weeks
  Weekly from March through early November
  Twice monthly from November through February

  Years 2-5 are only slightly less intense. Accordingly, access to transmittered individuals must be continuous. Because range access on the Combat Center is highly restricted due to training exercises, transmittered animals cannot be released on the Combat Center without considering alternative tracking schedules and other monitoring efforts.. For the Sunshine Peak portion of the Rodman-Sunshine Peak dispersal area, the Combat Center will implement a combination of occasional radiotracking combined with multiple line transects to span most of the Sunshine Peak Training Area (Section 4.1.1).

3.2 RECIPIENT AND CONTROL SITE SELECTION

Six recipient areas and seven control sites were designated (Figure 2). Recipient areas include both a release area and a dispersal area. Each recipient area is paired with a control site(s) to match genetics, habitat and local weather patterns.

Generally speaking, recipient areas meet the criteria listed in Section 3.1, above. None is more than 40 km from the impact areas (Table 2), although they are up to 53 km from the furthest edge of the relevant impact area. These distances are much less than the conservative 200 km recommended physical limit before incurring risk of outbreeding depression (Averill-Murray & Hagerty 2014).

Translocation to depleted populations is highly likely to occur for this project. Tortoise populations have declined severely throughout their geographic range (Karl 2004 and 2010, McLuckie et al. 2006, Boarman et al. 2008, USFWS 2011a, 2015b). In the MCAGCC area, specific tortoise declines have been documented on several sites:

- The Emerson Lake, Sand Hill and Bullion training ranges adjacent to the impact areas - Numbers of live tortoises at the Emerson Lake Plot declined from consistent levels of 15 to 20 tortoises/km^2 on three surveys between 1997 and 2003 to 3.0 tortoises/km^2 in 2009 (Kiva 2009). The Sand Hill permanent study plot (Plot #2) plot declined from 37.8 to 10.4 tortoises/km^2 between 1991 and 2008 (Kiva 2008) and to 3 tortoises/km^2 in 2013 (A.P. Woodman, unpubl. data). The Bullion plot had 31 and 42 tortoises/km^2 in 2001 and 2003, respectively (Kiva 2007, unpub. data) and 15 tortoises/km^2 in 2015 (clearance data).
- The BLM's Johnson Valley long-term study plot declined from 69 tortoises/km^2 in 1980 to 6 tortoises/km^2 in 1992 (Berry 1996 in BLM 2005).
- USFWS' line distance sampling program has recorded continuous declines in the Ord-Rodman sampling stratum, from 8.2 to 3.6 tortoises/km^2 between 2007 and 2015 (USFWS 2009b, 2015b).

By contrast, no regional increases in tortoise density near MCAGCC have been documented. Accordingly, the recipient sites for the MCAGCC translocation are all likely depleted. Whether they are below carrying capacity is unknown. The term "carrying capacity" has been used historically to characterize, both empirically and mathematically, the sustainability of a species in a given area or habitat. Exact definitions vary (Edwards and Fowle 1955, Dhondt 1988), but a reasonable working definition refers to the maximum population of a given species that can be supported in a defined habitat without permanently impairing the productivity of that habitat (Rees 1996).

Examining changes in habitat is a reasonable first approach to evaluating if a particular area may have a long-term higher carrying capacity than the current populations suggest. Because the topography, hydrology, and surface disturbance appear to be unchanged in the recipient areas, there is a reasonable likelihood that the carrying capacity can support more tortoises than are currently present. Declines may have little to do with the inherent carrying capacity of the abiotic and biotic features of the habitat, but more to do with

Table 2. Relationship of impact, recipient (R) and control (C) sites. Each recipient area is paired with one or more control sites. The natural and artificial features that separate the recipient and control sites from the impact areas and separate the paired sites are listed. Mountains that are impermeable to tortoises are considered to be barriers. Permeable but difficult terrain is considered a deterrent.

Site	Size (km^2)[1]	Separation from Impact Area		Paired Site			Number of Mark-Recapture Plots
		Distance from Impact Area (km)[2]	Other Separation Factors	Paired Site	Distance from Paired Site (km)[3]	Other Separation Factors	
Recipient				**Control**			
Rodman Sunshine Peak N	103.4	6.9	low mountains (a deterrent, not a barrier)	Rodman Sunshine Peak S	6.5	low mountains (a deterrent, not a barrier)	3
				Daggett	38	Newberry Mountains (barrier), residential development, poor (playa) habitat	
Lucerne-Ord	162.5	12.5	Fry Mountains (barrier)	Rodman Sunshine Peak S		Fry Mountains (low; a deterrent, not barrier)	1
				Daggett	23	Ord Mountains (barrier)	
Broadwell	52.4	28.5	broad lava flow (barrier), freeway, poor habitat	Calico	3.3	Cady Mountains (low; a deterrent, not a barrier)	
Siberia	63.8	27.8	Combat Center, several mountain ranges	Ludlow	5.8	low mountains (a deterrent, not a barrier)	1

Cleghorn Recipient	8.1	1	tortoise exclusion fence	Cleghorn Control	3.0	tortoise exclusion fence	1
Bullion (R)	52.7	9.9	tortoise exclusion fence	Bullion (C)	5.6	tortoise exclusion fence	1
Control				**Recipient**			
Rodman Sunshine Peak S	54	0.5	tortoise exclusion fence	Rodman Sunshine Peak N, Lucerne-Ord	---	---	1
Daggett	22	31.6	Rodman and Newberry Mountains (barrier)	Rodman Sunshine Peak N, Lucerne-Ord	---	---	1
Calico	16.7	23.3	broad lava flow (barrier), freeway, poor habitat	Broadwell	---	---	
Ludlow	11	27.9	Combat Center, several mountain ranges	Siberia	---	---	1
Cleghorn (C)	9.5	1.7	No barrier, although localized topographic features (incised washes, low hills) on control site probably encourage tortoises to remain locally	Cleghorn (R)	---	---	1
Bullion (C)	12	15.7	Bullion Mountains (barrier)	Bullion (R)	---	---	1

1. For Recipient sites, this is the size of the release and dispersal area (=recipient area). For control sites, it is the approximate study area size.

2. Distance is from nearest edge of the impact area.

3. Distance is from edge of the release area

extrinsic factors (e.g., predation, disease, drought). Hence, augmenting the recipient areas' populations may bolster the populations' ability to withstand stochastic events or chronic and/or gradual impacts.

3.3 DESCRIPTIONS OF THE RECIPIENT AND CONTROL SITES

Specific characteristics of each recipient site, and issues related to translocation, are discussed below. Control sites have been included to demonstrate that they have essentially the same conditions as the paired recipient sites, and have adequate conditions to support a long-term study (e.g., conservation areas). Land uses and long-term protection[2] are detailed in Table 3 and Figures 2 and 3. We evaluated specific mortality factors at each site (Table 4, Figures 4 and 5) that included disease and predation. Because many of these data were collected this fall, the analysis has not been completed; accordingly, the results we present here are preliminary. Using data on the shells found during tortoise searches, we assessed mortality rates for the last four years for adult tortoises (≥180 mm in carapace length [MCL]). Enzyme-Linked ImmunoSorbent Assay (ELISA) results provided disease status for *Mycoplasma agassizii* and *M. testudineum*. We evaluated trauma from canids (coyotes and dogs) based on trauma data gathered during health assessments. Raven risk was derived from raven point counts and nest surveys begun in Spring 2015. None of the sites is perfect for translocation due to the many constraints, but they are the best feasible sites.

---

[2] BLM manages Areas of Critical Environmental Concern (ACEC's), National Landscape Conservation System (NCLS) lands, Wilderness Areas and Wilderness Study Areas (WSAs)

- ACECs were established to "protect and prevent irreparable damage to important historic, cultural and scenic values; fish, wildlife resources or other natural systems or processes; or to protect human life and safety from natural hazards. ...the management of ACECs is focused on the resource or natural hazard of concern … and in some cases may involve surface disturbing actions" (BLM no date).
- Desert Wildlife Management Areas (DWMAs) were identified in the original and revised recovery plans (USFWS 1994a and 2011a); they are managed as ACECs by BLM. DWMAs act as reserves in which recovery actions are implemented.
- NCLS lands comprise a collective system of conservation lands that are managed "to ensure their conservation, protection, and, if needed, restoration for the long-term benefit of surrounding communities" (BLM 2015).
- Wilderness Areas are to be managed "to retain their primeval character and influence, without permanent improvements or human habitation… (and are to be)…protected and managed so as to preserve…natural conditions" (BLM 1995). Wilderness Study Areas are managed to preserve wilderness characteristics until Congress makes a final determination on the management of WSAs.

USFWS is responsible for Critical Habitat (CH) and for the development of Tortoise Conservation Areas (TCAs)

- CH, designated for *G. agassizii* in 1994 by USFWS (1994b), provides legal protection for key areas for recovery where conservation actions can be focused.
- TCAs are focus areas within existing desert tortoise conservation areas where aggressive management is recommended to ensure that populations remain distributed throughout the species range (USFWS, no date).

MCAGCC has established Special Use Areas (SUAs) on MCAGCC that are off limits to military training and vehicle travel off of Main Supply Routes (MSRs), with limited exceptions for Conservation Law Enforcement Officers (CLEOs), authorized NREA staff, and water and maintenance crews.

Table 3. Characteristics of recipient and control areas that are related to site choice. Recipient areas include release plus dispersal areas; control sites are the approximate areas within which tortoises were sought or studied. Conservation areas include existing areas and new areas proposed by the DRECP, Feinstein Bill, and Cook Bill. The Cook Bill resembles the Feinstein Bill in most areas relevant to the MCAGCC translocation and is incorporated by reference except where it diverges. See text for explanation of conservation areas.

Site	Associated Conservation Areas[1]	Land Uses
Recipient Areas		
Lucerne-Ord	Substantially overlaps: Ord-Rodman ACEC Ord-Rodman Critical Habitat Unit Proposed National Landscape Conservation System (DRECP) Ord-Rodman Tortoise Conservation Area	Large transmission line corridor Limited Use OHV designation but possible proliferation anticipated Overlaps Ord Mountain grazing allotment Mixture of federal and private lands Scattered occupied residents >6.6 km south of the release area
Rodman Sunshine Peak North	Substantially overlaps: Ord-Rodman ACEC Ord-Rodman Critical Habitat Unit Proposed National Landscape Conservation System (DRECP) Sunshine Peak Training Area Ord-Rodman Tortoise Conservation Area Bordered by Rodman Mountains Wilderness	Large transmission line corridor No projected future use of area[3] Overlaps Ord Mountain grazing allotment ~3 km^2 All lands federally owned
Siberia	In: Proposed Mojave Trails National Monument (Feinstein Bill) Proposed ACEC (DRECP) Overlaps: Proposed National Landscape Conservation System (DRECP) Borders MCAGCC	Negligible recreation use, although gas pipelines provide ingress routes No projected use of area[3] but large block of private lands in west - former proposed solar energy project Mixture of federal, state and private lands
Broadwell	Substantially overlaps: Cady Mountains Wilderness Study Area Proposed National Landscape Conservation System (DRECP) Proposed ACEC (DRECP) Proposed Mojave Trails National Monument (Feinstein Bill) Near Kelso Dunes Wilderness	Retired grazing allotment Negligible recreation use No projected future use of area[2] Large transmission line corridor Nearly all lands federally owned
Cleghorn Recipient	Entirely on MCAGCC- Cleghorn Lakes RTA SUA Adjacent to Cleghorn Wilderness	Scattered occupied houses with dogs, 6.7 km south
Bullion Recipient	Entirely on MCAGCC - Bullion RTA SUA	Training will occur in the recipient area outside the SUA

Control Areas		
Rodman Sunshine Peak South	On MCAGCC SUA Substantially overlaps: Ord-Rodman ACEC Ord-Rodman Critical Habitat Unit Proposed National Landscape Conservation System (DRECP) Sunshine Peak Training Area Ord-Rodman Tortoise Conservation Area Bordered by Rodman Mountains Wilderness	Large transmission line corridor Residual Open OHV Area to north (will be fenced with tortoise exclusion fencing) Proposed expanded Open OHV Area to west (Cook Bill) Overlaps Ord Mountain grazing allotment All lands federally owned
Daggett	In: Ord-Rodman ACEC Ord-Rodman Critical Habitat Unit Proposed National Landscape Conservation System (DRECP) Abuts Rodman Mountains Wilderness	Large transmission line corridor Mixture of federal and private land No projected future use of area[3] ≥1.3 kms south of I-40 and Daggett
Ludlow	In: Proposed Mojave Trails National Monument (Feinstein Bill) Proposed ACEC (DRECP) Overlaps: Proposed National Landscape Conservation System (DRECP) Near MCAGCC	Negligible recreation use, although gas pipelines provide ingress routes Mixture of federal and state lands
Calico	Substantially overlaps: Proposed National Landscape Conservation System (DRECP) Proposed ACEC (DRECP) Abuts Proposed Mojave Trails National Monument (Feinstein Bill) Cady Mountains Wilderness Study Area	Retired grazing allotment Negligible recreation use No projected future use of area[2] Large transmission line corridor Mostly federal land ownership
Cleghorn Control	Entirely on MCAGCC- Cleghorn Lakes Training Area SUA Adjacent to Cleghorn Wilderness	Scattered occupied houses with dogs, 5.5 km southeast
Bullion (C)	Entirely in Cleghorn Wilderness Borders MCAGCC	

1. Sources: *West Mojave Plan (BLM 2005), DRECP* (CEC et al 2014), *Feinstein Bill* (Feinstein 2015), *Cook Bill* (Cook 2015)
2. C. Otahol (2015a)
3. C. Otahol (2015b)

Table 4. Mortality factors at the translocation and impact areas. Incidence of disease (positive (P) or suspect (S)), canid trauma and mortality rates include substantial data collected in Fall 2015 that are not yet fully analyzed. Disease data are from Fall 2014 and 2015 unless noted. Canid trauma ranks follow trauma scoring in Berry and Christopher (2001): mild (2); moderate (3); and severe (4). Cumulative ranks are a combined ranking of canid-related trauma for gulars, flares, and limbs. Raven survey information is incomplete because surveys were expanded after the nesting season in 2015 to accommodate several new sites. "Offending raven" nests have juvenile tortoise remains beneath (USFWS 2008). N.A.=Not Available

Site	Incidence of Disease[1]						Canid Trauma					Ravens
	M agassizii		*M. testudineum*		Total Analyzed	% of Total That Are Seropositive	Rankings			Total analyzed	% of Total with Rank 3 or 4	Nests/ "Offending Raven" Nests
	P	S	P	S			2	3	4			
Impact												
WEA	18	77	8	21	1056	2.5	NA					NA
SEA	0	4	0	0	89	0	NA					NA
Recipient (R)												
Rodman Sunshine Peak N	0	2	0	0	24	0	32	24	12	121	29.8	11/ 2
(2014)[2]	0	1	0	1	16	0	4	1	1	17	11.8	
Lucerne-Ord	3	1	6	16	100	8.0	19	23	16	102	38.2	8/1
	NA											
Broadwell	3	2	0	3	25	12.0	6	6	1	27	25.9	NA
Siberia	0	3	0	1	40	0.0	10	8	3	41	26.8	NA
Cleghorn (R)	0	0	0	0	21	0	6	5	8	19	30.8	NA
Bullion (R)	0	0	0	0	13	0	4	3	1	13	30.8	NA
(2013)	1	0	0	3	22 [3]	4.5	NA					
Control (C)												
Rodman Sunshine Peak S	1	9	0	0	22	4.5	NA					1 / 0
Daggett	7	5	3	0	53	18.9	33	24	16	100	40.0	9 / 0
	NA						11	3	2	37	13.5	NA
Calico	2	1	0	1	26	7.7	8	5	1	27	22.2	NA
Ludlow	9	0	0	2	37	0.0	11	3	2	37	13.5	NA
Cleghorn (C)	1	2	0	0	17	2.6 (Cleghorn R+ C)	8	3	5	18	40.0	NA
Bullion (C)	0	0	0	0	10	0	4	1	1	10	20	NA

1.Results as of 1 Nov 15. Total is number of samples analyzed to date. Percent of total is for tortoises that are seropositive for one or both species of *Mycoplasma*.
2. Source: P. Woodman, unpub. data
3. Source: Kiva (2013)

3.3.1 RECIPIENT AREAS

Lucerne Ord

This site is a broad area of mixed fair to good quality habitats. It lies in a large bowl with natural topographic barriers (Ord Mountains) to the west and north. There are no highways or heavily used roads. While it receives substantial protection from future development via its overlap with multiple conservation areas (Table 3, Figure 3a), the edges of the dispersal area abut the Johnson Valley Open Off Highway Vehicle (OHV) Area. Although the recipient area is BLM-designated for Limited Use (i.e., travel on existing routes only), OHV use is moderate to high near low mountains and along some roads. OHV proliferation may occur due to loss of parts of the Johnson Valley Open OHV area for the MCAGCC expansion. The MCAGCC expansion Environmental Impact Statement (EIS; Navy 2011b) concluded that the Ord Mountain route network would be expected to see a pronounced increase in OHV activity as a result of displaced use from Johnson Valley, due to the area's popularity and spillover from Stoddard Valley (TEC 2011). However, the study cautioned that data on reliable projections of increased OHV activity and locations were unavailable and that "projecting increases in OHV use with any certainty, by specific location with the ODA [Open Desert Area], was described by OHV enforcement experts as a near impossibility – there are too many factors, which change dynamically before they can be studied, to establish a reliable projection."

The southern edge of the Ord Mountain grazing allotment intersects the northern roughly third of the recipient area (47 km^2 of overlap). This allotment has a long history of cattle grazing and an allowable limit of 302 cattle (3632 Animal Unit Months [AUMs]) (BLM 2006), although only approximately 30 or fewer cows have been grazed for the last few years (A. Chavez, 2015). Per stipulations in the West Mojave Plan (WMP; BLM 2005), cattle grazing is to be excluded during spring and fall throughout this overlap area in years when biomass production of ephemeral vegetation is below 230 lb/acre (BLM 2006). There are no water sources for cattle in Lucerne Valley (BLM 2006).

The transmission line subsidizes nesting for ravens, and eight active raven nests within 6.5 km of the recipient area were present on the power poles in Spring 2015 (Table 4). One was an "offending raven" nest, under which hatchling tortoise remains were observed. Late spring and summer point counts in 2015 suggested relatively low raven density, generally none, but up to 2 ravens per 10 km^2 (Figure 4). But, during other surveys in September, flocks of dozens of ravens were seen daily flying through the valley.

Domestic dogs were responsible for mauling and killing tortoises in the southern portion of the recipient area in previous years (Jones 2002). However, many of the houses in Lucerne Valley are now abandoned; the nearest occupied house is 6.6 km south of the release site. Elevated canid trauma (Ranks 3 and 4) was evident in 38.2 % of the 102 tortoises (Table 4), but all trauma was healed. This may suggest that dogs are no longer roaming the area.

Despite these potential or realized threats, mortality is not unusually high compared to other sites. Preliminary estimates suggest annual mortality rates of fewer than 0.5 adult tortoises per km^2 in the last four years. While not as high as Rodman-Sunshine Peak North or Daggett Control, this is still high compared to the 2% suggested by Turner and Berry (1984) as "normal" for a sustainable population. This consistently high mortality rate throughout the study sites is very possibly the result of the multi-year drought in this region. Forage production in this area was negligible in 2012, 2013, and 2015 (A. Karl, field notes). Drought has been implicated in documented mortality episodes (Peterson 1994, Longshore et al. 2003, Karl 2004, Lovich et al. 2014).

Rodman-Sunshine Peak North

This site is a broad bajada of mixed fair, medium and moderately good habitat. A broad, lava flow provides an impermeable barrier to tortoise movement toward Interstate-40 (I-40). No future development is anticipated, and with the exception of a transmission corridor with three high-voltage transmission lines, and a distribution line, there is little current disturbance. All of the lands are federally-owned (San Bernardino County 2015). This site is relatively protected by its large overlap with conservation areas and Sunshine Peak Range Training Area (RTA), and adjacency to the Rodman Wilderness (Figure 3b). Sunshine Peak receives extremely little disturbance. It is a "hung ordnance" area, where aircraft try to dislodge ordnance that fail to launch during training exercises. Ground activity, primarily by the Combat Center's Explosive Ordnance Division (EOD), is limited to a few days per year, when EOD detonates or removes ordnance.

This site was configured to avoid dispersal into Wilderness, per BLM (Symons 2015), and provide at least a 6.5 km distance from the MEB northern battalion route. Because of the constraint to avoid Wilderness, most tortoises will have to be translocated to the Sunshine Peak RTA. To avoid translocation and tracking constraints due to limited access to the Sunshine Peak RTA, the Combat Center will implement a monitoring effort that varies from the other sites (Section 4.1.1, Tracking).. Despite these challenges, this remains a valuable recipient site due to its land use protections, and the proposed monitoring will provide useful information.

Mortality rates and factors are still being analyzed, but preliminary results suggest relatively high annual mortality rates of roughly 2 adult tortoises per km^2 for the last four years. The other recipient and control sites had annual mortalities below 0.7 over the same time period, except the Daggett Control site (see below). Infection by *M. agassizii* and *M. testudineum* appears to be very low; none of the 24 samples analyzed to date were positive for either pathogen and only two were suspect (Table 4). These results are virtually identical to those for 2014 (A.P. Woodman, unpub. data) in the same area. We are awaiting the lab results on the remaining samples from this site.

Nearly 30% of live tortoises exhibited elevated levels of trauma from canids (Ranks 3 and 4) at this site; 12 of 68 had fresh trauma. Trauma was largely confined to the furthest west areas closer to the freeway rest area and the Newberry Springs residences, mostly beyond the dispersal area (Figure 5b). The transmission line subsidizes nesting for

ravens, and 11 raven nests within 6.5 km of the recipient area were present on the power poles in Spring 2015 (Table 4). One was an "offending raven" nest, under which hatchling tortoise remains were observed. A second offending raven nest was inactive. Otherwise, ravens were observed at the site in generally low numbers (Figure 4).

Many of the shells were intact, suggesting that most tortoises died of causes other than predation. Given the relatively localized canid trauma and the apparent lack of Mycoplasmosis, a regional factor such as drought is a more likely the cause of the elevated mortality. In addition, a flood event in late Summer 2014 likely buried many tortoises. High mortality on this site would support the interpretation of a depleted population.

Siberia

The Siberia recipient area lies on a narrow, steep alluvial fan out of the Bullion Mountains. There is no current use of the site that would negatively impact tortoises (Table 3), but it was formerly the site of a proposed solar plant ("Siberia"). A large block of private lands in the west leaves open the possibility of future development, although this area is no longer in a solar energy development zone (CEC et al. 2014). Currently, the area is proposed for conservation in the Desert Renewable Energy Conservation Plan (DRECP; California Energy Commission et al 2014), the California Desert Conservation and Recreation Act ("Feinstein Bill"; Feinstein 2015), and California Minerals, Off-Road Recreation and Conservation Act ("Cook Bill"; Cook 2015).

The release area here was constrained by three major factors: (a) proximity to MCAGCC; (b) distance to State Route 66 (SR 66); and (c) poor habitat in the center of the site. Without fencing, there are no barriers preventing tortoises from travelling onto MCAGCC. However, the USMC has agreed to fence the border with tortoise exclusion fencing to solve this problem. SR 66 is 6.5 km east at the nearest point. While this old highway is not heavily travelled, tortoise mortality is possible. Finally, most of the center of the fan is very poor habitat. The heavy monsoon during late Summer 2014 scoured the large wash system in the center of the fan, and little soil remains. Few tortoises remain in this scoured wash as well. During solar site surveys in 2012, 24 tortoises were found in this wash (URS 2014); during 2015 searches, only a single tortoise was found.

Preliminary analyses suggest annual mortality rates of roughly 0.7 adult tortoises per km^2 in the last four years; this is consistent with most of the other recipient and control sites and may reflect both the drought and the flood. Canid trauma was moderate, and consistent with most of the sites; 26.8% of the tortoises had elevated levels of trauma (Table 4). None of the canid trauma was fresh.

Broadwell

This site lies on a large, steeply sloping bajada bordered by low to tall mountains. Much of the bajada has only moderate utility to tortoises because of the densely cobbly and gravelly substrates; the low species richness and plant volume is an indicator of this

lower quality habitat. Not surprisingly, tortoises were disproportionately found in the incised washes of the upper bajada near the mountain toeslopes; these also had a high component of caliche cavities that are favored as burrows by tortoises.

The site achieves moderately high protection from overlapping and nearby existing and proposed conservation lands (Table 3, Figure 3d) and nearly all of the lands are federally owned. There is little current use of the area with the exception of a transmission corridor with two high-voltage transmission lines, and future development is not anticipated. The transmission line provides raven nesting subsidies, but has not been studied, so the degree of raven use of the area is unknown.

Preliminary analyses suggest annual mortality rates of fewer than 0.3 adult tortoises per km^2 in the last four years, consistent with most of the other recipient and control sites. Broadwell has a higher disease prevalence relative to *Mycoplasma* than some of the other sites – 12% of the tortoises sampled (n=25) were positive for *M. agassizii* (Table 4). Canid trauma was moderate, and consistent with most of the sites; 25.9% of the tortoises had elevated levels of trauma (Table 4). None of the canid trauma was fresh.

Cleghorn Recipient and Control

These sites are discussed together because they are only three kilometers apart, but separated by a tortoise exclusion fence. The recipient site will be completely fenced with tortoise exclusion fence and studied as a constrained dispersal site (Figure 3e; also see Section 4.2.3 below). After two years, the constraining fence on the east will be removed (the fence between the constrained dispersal area and SEA impact area will remain in perpetuity). A mark-recapture plot was established outside the current constrained dispersal area, and will be used as an additional control site until tortoises are released from the constrained dispersal pen.

Both the control and recipient sites are in undeveloped native habitat. They are on MCAGCC (the recipient site is in a Special Use Area [SUA]) and adjacent to Cleghorn Wilderness, so are protected from public use or development. Disease incidence relative to *Mycoplasma* is low. Only one in 38 tortoises was positive or suspect for *Mycoplasma* spp. in 2015 (Table 4). This is consistent with earlier surveys in 2010 in Cleghorn Pass RTA adjacent to the SEA – of six tortoises, none was positive and two were suspect (J. Smith 2011, unpub. NREA data).

While preliminary mortality rates are not higher than other sites (0.5 adult tortoises per km^2 per year in the last four years), canid trauma is the highest of any site. For the combined sites, 59.5% of the tortoises had elevated levels of trauma (Table 4). None of the trauma was fresh and there was no clear distributional pattern that would that suggest that dogs from the houses in Wonder Valley to the south were preying on tortoises (Figure 5e). Most of the trauma occurs within 6 km of the houses, but some is well north, near the mountains. There may well be two sources of canid trauma, domestic dogs and coyotes. Assuming that dog trauma is occurring (dogs could be heard during our surveys), we moved the constrained dispersal site beyond 6.5 km from the houses.

Further, we plan to implement an information outreach program to encourage people to confine their dogs. We will also conduct a study to monitor dog and coyote presence, install deterrents for the constrained dispersal pen (e.g., hot wire), and implement a canid control program.

Bullion Recipient and Control

The major site constraint is the limited access for monitoring. Access to both sites is through the Bullion RTA and the sites are both remote, requiring substantial time to get there, and access may be limited by the schedule of training activities. Consequently, the tracking schedule in the BO (USFWS 2012) may prove infeasible.

These sites have good habitat quality and receive high protection from public activities or development. Bullion Control is in the Cleghorn Wilderness and far from any human impacts. Bullion Recipient is in the Bullion RTA but largely in the SUA. Future threats appear to be limited to training activities, outside the SUA. Raven surveys have not been performed and mortality rates and trauma due to canids are under analysis, but disease levels are low. Of 23 tortoises sampled in 2015, none was seropostive or suspect for *Mycoplasma*. Historically, no tortoises had signs of respiratory disease or were seropositive for *Mycoplasma* on the Bullion demographic plot in 2001, 2002, 2003, or 2008 (Kiva 2008). In 2013, one tortoise tested seropositive for *M. agassizii* and three were suspect for *M. testudineum* (Kiva 2013).

3.3.2 OTHER CONTROL SITES

Rodman-Sunshine Peak South

This control area is in an SUA adjacent to the WEA. It comprises a substantial area of moderately good and good habitat that is relatively protected by its large overlap with conservation areas and the SUA, and proximity to the Rodman Mountains Wilderness (Figure 3b). The main issue with the site is the tortoise exclusion fences. Tortoises will be separated from the training exercises by a tortoise-proof fence, but with tortoises fenced in on three sides, this does not represent a perfect, unmanipulated site.

Future OHV impacts are questionable. A small triangle (~12 km^2) of Johnson Valley Open OHV remains north of the SUA (Figure 3b). At this time, the only access to this triangle is the transmission line maintenance road, so it is uncertain whether this area would be visited by recreationists. This could change, however, if the Cook Bill (Cook 2015) creates a broader connection between this isolated triangle and the main Open OHV area (Figure 3b).

Mortality factors (e.g., rates, canid predation) are not yet known. The transmission line subsidizes nesting for ravens but only one active raven nest was observed within 6.5 km (Table 4). Only one tortoise of the 22 sampled is seropositive for *M. agassizii*. We will complete surveys to find and transmitter additional control tortoises in early Spring 2016.

Daggett

This site was chosen because of its higher quality habitat over a relatively broad area and its separation from, but proximity to, the Rodman-Sunshine Peak North and Lucerne-Ord recipient sites. While a mixture of public and private lands, its location within conservation lands provide impediments to further development (Table 3, Figure 3g); BLM is not aware of any proposals for development (Otahol 2015b).

Preliminary mortality analyses suggest that annual mortality is relatively high, roughly 1.8 adult tortoises per km^2 for the last four years. This site is subject to the same regional drought-related pressures discussed earlier. Predator pressure is also high. Of 100 tortoises sampled, 40% have elevated levels of canid-related trauma (Table 4); 11 of 73 tortoises had unhealed injuries. There was no direct evidence of dogs (dogs or scat) during the surveys in Fall 2015 or pattern of trauma nearer the houses that would suggest domestic dogs (Figure 5f). Also, it seems unlikely that dogs would traverse the freeway from the towns of Daggett or Yermo to prey on tortoises; there is only one occupied house on the south side of the freeway and we don't know if dogs live there. Coyotes that are attracted to the residential and agricultural development at Daggett may be the canid predator at the Daggett control site. Further monitoring may provide answers.

The transmission line subsidizes nesting for ravens. Nine active raven nests were observed within 6.5 km (Table 4). Raven presence from May through July was relatively low, 0.5 ravens per 10 km^2 during point count surveys (Figure 4). However, agriculture, residential development, and the freeway provide several local food subsidies. Raven populations are likely to be moderately high in the area, with concomitant high predation on juvenile tortoises.

The presence of *Mycoplasma* infections is unusually high compared to other sites (Table 4), with 18.9% of the 53 tortoises analyzed to date are positive for *M. agassizii* and/or *M. testudineum*.

Ludlow

This site comprises fair to moderately good habitat, and is very similar to occupied areas of the paired Siberia site. It is relatively undisturbed by human activities; only a pipeline currently provides access, and use by the public appears negligible. Preliminary estimates of mortality suggest an annual rate of 0.7 adult tortoises per km^2 for the last four years, relatively consistent with most other recipient and control sites. Canid trauma was the lowest observed at any site – 13.5% (Table 4). Incidence of disease is not yet available.

Calico

This paired site to the Broadwell Recipient Site lies on a small south-facing bajada against the foothills of the Cady Mountains. It is relatively undisturbed by human activities and the former grazing allotment has been retired. It is marginally protected from development, based on current and proposed conservation designations (Table 3,

Figure 3d). Impacts are similar to the Broadwell site. Infection by *Mycoplasma* spp. occurs in 7.7% of the tortoises tested (Table 4), which is slightly higher than most other recipient and control sites, but more similar to Broadwell (12%). Canid trauma was moderate, and consistent with most of the sites; 22.2% of the tortoises had elevated levels of trauma (Table 4) but none was fresh.

3.4 RECIPIENT SITE PREPARATION

3.4.1 TORTOISE EXCLUSION FENCING

Permanent tortoise exclusion fencing will be installed:

- Between impact areas and recipient areas and/or SUAs, to keep tortoises from entering the impact areas (Figures 3b and 3e);
- Between recipient areas and the Open OHV Area north of the WEA (Figure 3b); and
- Along the Combat Center border at the Siberia site, to keep transmittered tortoises from crossing into the Combat Center (Figure 3c).

Temporary tortoise exclusion fencing will be installed at two locations to keep tortoises from dispersing into the Cleghorn Wilderness:

- The constrained dispersal plot in Cleghorn Lakes RTA (Figure 3e); and
- The southern portion of the Bullion RTA (Figure 3f).

Materials and Design

Exclusion fence materials and design will comply with USFWS (2009a) specifications. For temporary fencing, rebar or other sufficiently sturdy posts may replace t-stakes. In all cases, supporting stakes will be spaced sufficiently to maintain fence integrity. Tortoise-proof grates ("cattle guards") will be installed at entry points where unimpeded vehicle traffic is necessary.

Surveys and Monitoring during Fence Construction

Within 24 hours prior to fence installation, biologists will survey the staked fenceline for tortoises and for all burrows that could be used by tortoises. Surveys will include 100% of all areas to be disturbed by fencing and a swath of at least 90 ft centered on the fenceline, using 5 m-wide transects. Tortoise burrows will be mapped using Global Positioning System (GPS), and the burrow size and occupancy recorded. If not occupied, indications of how recently the burrow was used will be recorded. Occupancy will be determined by a combined use of reflective mirrors, probing, tapping the entrance, listening, and/or scoping with a fiberoptics scope. In all cases, occupancy will be verified only if all interior edges of the burrow can be felt, such that a "hidden" chamber at the end is not missed. Any tools used inside a burrow will be disinfected before use in another burrow, using the most recent disease prevention techniques (e.g., USFWS

2015a). Burrows may be flagged, if it will not attract poaching. Flagging also may attract predators, but can be placed at a standardized distance and direction from burrows.

All burrows will be visually and tactilely examined for occupancy by tortoises and other wildlife. If occupancy is negative or cannot be established, the burrow will be carefully excavated with hand tools, using standardized techniques approved by USFWS (2009a) and the Desert Tortoise Council (1994), including disinfection techniques for all tools.

The fencing will be shifted to avoid all burrows over 0.5 meters in length and all active burrows, with the fence placed between the avoided burrows and future intensive training. Fence construction may occur during any time of the year (USFWS 2011b). All fence construction will be monitored by approved biological monitors (BMs) to ensure that no desert tortoises are harmed. The level of monitoring will depend on the specific fencing activity, but at least one tortoise monitor will accompany each separate construction team, such that no driving, trenching, fence pulling, or any surface disturbing activities will occur without the immediate presence of a monitor. Maps of burrows from the pre-construction survey will be provided to all BMs to assist in protecting tortoises. Such maps may also be useful for relocating tortoises.

All exclusion fencing will be inspected monthly and immediately after all rainfall events where soil and water flow could damage the fence or erode the soil underneath. Any damage to any fencing, either permanent or temporary, will be repaired immediately. If exclusion fencing is installed when tortoises are known to be active, either from spring through fall or in winter during unusually warm weather, then all installed exclusion fence (partial or complete) will be checked 2-3 times daily for two weeks to ensure that no tortoise is fence-walking to the point of exhaustion or overexposure. If midday temperatures are above thresholds at which tortoises must go underground to escape heat (approximately 43ºC ground temperature), then one of the fence checks should occur one hour prior to this threshold being reached. This same process will occur for the first 2-3 weeks of the activity season if the fence is installed in winter, when tortoises are underground.

Tortoise Disposition during Fence Construction

Any nests found between November 1 and April 15 are unlikely to be viable and will not be moved; hatching is typically completed by October (BT Henen and AE Karl, unpub. obs.). In the event that nests are found between April 15 and October 31, the nests will be moved. Eggs will be inspected to determine if they are viable and, if so, will be moved to a similar microsite (e.g., cover, plant species, soil type, substrate, aspect) on the recipient sites using standard techniques (e.g. Desert Tortoise Council 1994, USFWS 2009b). Translocated nests may be fenced with open-mesh fencing (e.g. 3-5 cm wide mesh) that will permit hatchlings to escape but prevent depredation by canids that might be attracted by human scent to the new nests. Alternatively, smaller mesh fencing or other techniques may be used to prevent ground squirrel predation on nests. Open-mesh fencing or avian netting also will be installed on the roof of the nest enclosure to prevent predator entry. Nests will be monitored from a 30-foot distance once a month until late November, at

which time they will be excavated for examination. If possible, hatchlings will be weighed, measured, photographed, described, and marked.

3.4.2 PREDATOR MONITORING AND CONTROL

Predator monitoring is a crucial part of the translocation program. We will continue with the current raven point counts and nest surveys, expanding them to the remaining (more recently designated) translocation areas. The main purpose will be to identify ravens that are killing tortoise and, secondarily, to examine predation pressure. Where appropriate, USDA Wildlife Services will be notified to dispatch offending ravens.

Canid predation is occurring on all sites (Figures 5a to 5g) and in the impact areas. Beyond that, our knowledge is limited to understanding that coyotes are present naturally, are undoubtedly subsidized by humans, and that free-roaming dogs chew on tortoises. There is much that we do not understand that would help us evaluate the canid predation on tortoises and try to devise feasible solutions. For instance:

- Near some human interfaces, we do not know if domestic dogs or coyotes, or both, are chewing on tortoises.
- What is the abundance of canid populations and their use patterns?
- What are the factors that drive local population cycles?
- What factors attract canids to tortoises and what are the modifiers?
- What deterrents or other control methods are possible and practical?

We are currently developing a program to answer the first two questions. This will likely include transects for sign, and monitoring by camera, at a minimum.

In the interim, we will attempt to decrease the vulnerability of translocated tortoises, which spend more time aboveground early in the translocation and may choose poorer coversites. At the constrained dispersal site, we will implement Conservation Law Enforcement Officer (CLEO) monitoring, and a canid control program. A standard livestock "hot" wire, lightly electrified to deter passage, may be installed above the constraining fence. NREA also will implement a neighborhood outreach program to notify border residents that free-roaming dogs are not permitted on MCAGCC. Dogs that enter the constrained dispersal area may be controlled.

Coyote control may be implemented elsewhere in the translocation areas. While coyotes are native, their populations are enhanced by human activities (Esque et al. 2010). Coyote populations are unlikely to be harmed by removal of some animals. By contrast, tortoise populations are already strongly diminished and the species is imperiled. The intent of the MCAGCC translocation is to augment tortoise populations and improve recovery possibilities, not subsidize coyotes in the form of translocated tortoises. Accordingly, coyotes may be controlled in the translocation areas.

3.5 DISPOSITION CRITERIA

Three questions must be answered to determine where individual tortoises will be translocated:

1. How many tortoises go to each site?
2. Which individuals will go to which site?
3. Of the group in #2, which tortoises will keep transmitters (only 225 of the existing 1138)?

The answer to the first question is based on experimental augmentation densities as explained in Section 4.2.1, below (also see Table 6). The second and third are subject to a number of criteria, including, but not limited to:

- Demography – maintaining capture area sex ratios and population size structure.
- Social groups – Male tortoises are known to be familiar and mate with specific females in their area. While social "groups" may be difficult to determine without extensive observation or genetic paternity testing, geography may serve as a logical surrogate for moving groups of tortoises together.
- Habitat types – While tortoises are highly opportunistic and may thrive in new habitats, tortoises accustomed to living in certain topographies (e.g., rocky slopes; incised washes; gentle bajadas with deep, friable soil) may adjust more readily to a new location if the habitat is similar to that at the capture location. The Combat Center will generally move tortoises to new locations with topographies similar to their home sites. However, to limit the distance from impact area to recipient site, some tortoises from different topographies in the WEA will be moved toLucerne-Ord, where they may spread to nearby topographies most similar to their home sites.
- Disease Levels – Epidemiological considerations related to seropositive, suspect, or clinically ill tortoises will be evaluated to minimize the spread of *Mycoplasma* spp. Some tortoises in the impact area may not be suitable candidates for translocation because of a moderate to severe nasal discharge, oral plaques, or other conditions that may compromise survival (USFWS 2015a). While there are no tortoises in the WEA or SEA that are known to currently meet these latter criteria, conditions could change.

Disposition plans for every tortoise (or groups) are currently under development and will submitted to USFWS for approval in ample time for review.

4.0 MONITORING AND RESEARCH

Choice of recipient sitesis critical towards a better chance for translocation success, but we will know how well we succeed through carefully defining and evaluating variables to monitor. The overarching goal is to minimize losses and maximize assimilation into the existing population. Monitoring and research are essential to quantify how well the translocation addresses this goal. This translocation provides numerous opportunities to

answer research questions that increase our understanding of the species and translocation, and advance population management and species recovery. However, we prioritize a successful translocation above research.

4.1 SURVIVAL AND ASSIMILATION

4.1.1 SURVIVAL

Survival will be examined primarily from tracking observations of radiotelemetered animals (Table 5). However, the survivorship or mortality of marked tortoises will also be analyzed from mark-recapture surveys, health assessment records, and transect surveys. The combination of health assessments (general observations and specific USFWS health assessments) and habitat analyses are planned to help interpret the factors affecting survivorship, assimilation, and abundance. Each technique is described below with a discussion of the data analyses.

Tracking

Survival will be assessed via tracking 675 telemetered tortoises, 225 each of translocated, control, and resident groups, with 225 representing approximately 20% (190 tortoises) of the adults, and 5% (35 tortoises) of the juveniles originally anticipated to be translocated (Table 1, USFWS 2012). Translocated, resident, and control tortoises will be tracked the first year according to the schedule in the *Guidance* USFWS (2011b; see Section 3.1, above). We anticipate that translocated tortoises will settle somewhat into newer home ranges after one year (Nussear 2004, Karl and Resource Design Technology 2007, Field et al. 2007), at which time we will track them less frequently: weekly during high activity periods - April, May, October and the last half of September; every two weeks from June through the first half of September; and monthly during November through February (~26 locations per tortoise per year).

After five years, the transmittered group will be decreased to 150 tortoises (50 per group) and monitored via tracking for five more years, using the decreased tracking schedule above. Then we will remove these transmitters unless MCAGCC and the resource agencies determine that additional monitoring would be productive.

During tracking, for every live, numbered tortoise observed, we will record location (UTM), behavior (e.g., foraging, mating, fighting, other tortoise interactions, walking), position (sheltered in shade, above-ground, or burrowed), burrow attributes (length, type, distance of tortoise in burrow), and health, if possible. We will photograph any dead, numbered tortoise and record data on time since death, cause of death and rationale, and percent of shell remaining. Trackers will note unusual raven or coyote activity, illegal or elevated legal OHV activity, or other unexpected or intense potential risks to tortoises.

We will analyze survivorship of the translocated and resident tortoises compared to control tortoises, with most data gathered during the first active season (release until brumation), each of the first five years (675 transmittered tortoises), and for years six to

ten (n=150 transmittered tortoises). We will use Kaplan-Meier methods to evaluate survivorship for and among groups (controls, residents and translocatees), and comparisons among periods (e.g., months, seasons, years and extended periods), sites, sexes, sizes, age classes, health status (e.g., *Mycoplasma* test results and Body Condition Scores), and other independent variables (e.g., habitat type and levels of ground disturbance or predator sign). Kaplan-Meier curves may be compared with log rank tests or hazard ratios (Rich et al. 2010). We may also compare survivorship among groups and independent variables using contingency table analyses (e.g., Zar 1999 & Field et al. 2007). We will consider AIC_c – based model selection to evaluate models including group, site, sex, and other variables (e.g., Nussear et al. 2012).

Rodman-Sunshine Peak North - We propose a combination of radiotracking, mark-recapture plots (see methods below), and transect surveys of tortoise density (USFWS 2010; see Dispersal Area Monitoring below) to monitor survivorship, tortoise density, health (methods below), and habitat quality (see Dispersal Area Monitoring, below) at the Rodman-Sunshine Peak North site. Due to limited access to the Sunshine Peak Training Area (TA), we will not track many telemetered tortoises at the normal schedule used at other sites. However, when we have access to Sunshine Peak TA, we will track those animals, determine individual survivorship, measure their health status, and identify their location for simple dispersal measurements (e.g., distance from release sites; Field et al. 2007 & Nussear et al 2012). The ability to track these individuals will provide powerful, repeated measures on individuals. For those individuals that do not stay in or disperse into Sunshine Peak, we will monitor them per normal schedules. We will collect frequent measurements on locations, calculate home ranges (and overlaps with residents), and record behavior and general status and health at radiotracking events. Transmitters for these animals will be removed prior to battery expiration so tortoises are not burdened with non-functioning transmitters.

Additionally, when we have access to Sunshine Peak TA, we will perform, for the first three years, a series of line transects across the broad dispersal area to a) estimate tortoise density for the dispersal area, and b) collect data on as many tortoises, residents, translocatees, transmittered, untransmittered, marked, and unmarked tortoises in Sunshine Peak. This will help us find animals in each of these categories that are translocatees or residents and enable us to perform health assessments, increasing sample sizes and statistical power. We anticipate access two to four times per year. During the first couple of years tortoises will likely disperse across most of the dispersal area. After the first three years we will use these data to determine if there are suitable plot locations for long-term (e.g., 5-year intervals) monitoring, or sustain monitoring via the line transects.

We will consider Global Positioning System (GPS), satellite, or cellular transmitters for monitoring when the technology becomes suitable to not compromise tortoise survivorship.

Table 5. Main study objectives, methods used, and variables used in two critical facets of effectiveness monitoring: Survival and Assimilation. For each Method, we list the primary dependent variables (indicator variables) and secondary indicators gathered while measuring primary dependent variables. Independent or predictor variables range from select categorical variables (e.g., treatment group) to uncontrolled continuous variables (e.g., rainfall or annual plant biomass); they are not listed with any one method. BCS = body condition score. COD = cause of death

Study Objective	Methods	Dependent Variables, primary	Secondary indicators, from Method	Independent Variables
Survival	Tracking	Individual, annual & percent survivorship (per group, site, sex, age, etc.)	COD estimation (e.g., predator, drought, disease or vehicle strike)	Groups - Translocatees, Residents, Controls
			Simple health measures - trauma & clinical sign	Site
			Behavior (e.g., fighting, pacing, active, dormant or thermoregulating), time spent aboveground, and coversite choice & formation	Research treatment (density, grazing, constrained dispersal, translocation distance, headstart); not independent of site
			Spatial - movement frequency, distance & displacement; home range or activity areas	Sex - male, female, undiscernible or juvenile
	Mark-Recapture Plots	Density; among-year recaptures and carcass information contribute to survivorship estimates, as above	Health, behavior, movement & COD as above	Size & condition[1] - body mass, carapace length, shell volume (covariate); BCS & body density (see also Secondary Indicators)
			Changes in population density and demography (size and sex frequencies) may support or contradict survivorship measures	Time since translocation
			Growth - change in mass, length, volume, and secondary sexual characters	Weather, especially rainfall (mm) per winter, season or other relevant period, including prolonged drought; dichotomous, index or continuous-scale (ratio-scale) data from gauges
	Health Assessments	Recapture and carcass information contribute to survivorship estimates, as above	Full health measures, incidence (ranking, %) and severity (categorical or indices) of trauma and clinical signs, condition indices, ELISA results (positive, negative or suspect categories, for both *Mycoplasma* spp.), growth	Habitat condition, change; annual plant cover, invasive plant cover

			COD, behavior and growth as above; palpation of eggs	Cattle grazing - dichotomous, index or continuous-scale (ratio-scale)
	Transects	Recapture and carcass information contribute to survivorship estimates, as above	Density, demography, COD, and general health, behavior & growth as above	Ground or vegetation disturbance (e.g., vehicle) - dichotomous, indexed or continuous-scale (e.g., vehicle track counts)
				Predator counts (e.g., Common Raven and coyote) - presence or absence, indices, point counts or point count rates
				Proximity to predators & subsidies (e.g., transmission lines, raven nests, human communities or recreation areas)
Assimilation	Microsatellite markers & single nucleotide polymorphisms	Egg and clutch paternity (group assignment)[2]	Annual egg & hatchling production, # per female	Group (Translocatees, Recipients, Controls), site, treatment, translocation distance (e.g., WEA or SEA to Bullion) and time since translocation (e.g., 3, 5, 7 & 9 years post-translocation); see Survival above for additional variables, such as body size
	Tracking, health assessment and transect encounters	Behavior (e.g., fighting, mating, egg-laying, pacing, active, dormant or poor thermoregulation), responsiveness, posture, and coversite co-use (e.g., mixed group)	Spatial - movement frequency, distance & displacement; palpation for eggs: during health assessments (in season)	as above
	Tracking	Spatial - overlapping home range or activity area	Behavior, as above	as above

1. Growth and condition can be used as an indicator or predictor variable, depending on the particular analysis.
2. Davy et al. (2011) & Rico & Murphy, unpublished data for NREA, MCAGCC

Table 6. Number of tortoises to be translocated to each recipient site. Size categories for adults (carapace length ≥160 mm) and juveniles (carapace length < 160 mm) follow USFWS (2012). Juveniles with carapace length < 110 mm will be translocated after headstarting.

Recipient Site	Initial Density (tortoise/km2)	# Adults to Translocate	Density Increase	# Juveniles to Translocate
Lucerne-Ord	5.2	450	53% [1.57SE]	224
Rodman-Sunshine Peak North	4.9	186	37% [1.08 SE]	105
Siberia	2.6	115	71% [1.90SE]	57
Broadwell	5.1	47	18% [0.49 SE]	23
Cleghorn Recipient (constrained)	6.5	52	100% [2.32 SE]	4
Bullion Recipient	10.4	148	27% [1.90 SE]	84
Total		443		497

Table 7. Approximate number of transmittered resident and control tortoises targeted for each site. Sex ratios mirror sex ratios on the relevant impact area (1.3:1 for the WEA, 1.0:1 for the SEA).

Size Cohort	≥160 mm MCL			~120-159
(Sex/Transmitter Size)	Male	Female	Total	(RI2B-6 g)
RECIPIENT SITES				
Lucerne-Ord	35	25	60	15
Rodman-Sunshine Peak North	23	17	40	20
Siberia	11	9	20	0
Broadwell	11	9	20	0
Cleghorn Recipient	10	10	20	0
Bullion Recipient	15	15	30	0
TOTAL Resident Tortoises			190	35
CONTROL SITES				
Rodman-Sunshine Peak South	25	19	44	15
Daggett	31	24	55	20
Ludlow	12	9	21	0
Calico	11	9	20	0
Rodman	11	9	20	0
Cleghorn Control	10	10	20	0
Bullion Control	15	15	20	0
TOTAL Control Tortoises			190	35

Mark-Recapture Plots

We will repeatedly evaluate mark-recapture plots at control and recipient sites to help monitor the survival of translocatees and residents (see above for approach to survival analyses). These plot analyses will also provide estimates of tortoise density (tortoises per km^2) and demography (e.g., sex and age structure), and support planned measures of site fidelity (e.g., Nussear et al. 2012), health assessments (see below), and other variables (e.g., habitat condition and health parameters) that may determine or help explain the survivorship of the groups at the translocation and control sites. These plots, especially control plots, will also provide a general reference for population monitoring in the area.

Twelve 1-km^2 plots have been established in the recipient and control areas, five in control sites and seven in recipient areas (Table 2). Each plot will be surveyed for population density and structure every five years for 30 years, an interval consistent with Strategy 4 of the revised Recovery Plan (USFWS 2011a). Standard mark-recapture techniques (e.g., Lincoln-Peterson) will be employed, with at least two passes, and all captured tortoises weighed, measured, photographed, sexed, and described. For these demographic plans, we will collect the additional data identified above for live and dead tortoises found during tracking. We will assess health, test for *Mycoplasma* spp. antibodies (see Section 6.3, below), and store blood sample residues for genetic (see Section 4.2.4, below) analysis.

During each reading of the mark-recapture plots, we will assess habitat to monitor changes or stability. We will use standardized transects to measure percent cover, density, frequency, species richness, species evenness, and robustness of perennial plants. On these same transects, hydrology, annuals (percent cover and biomass by species), substrates, and soils will be measured on stratified-random quadrats. All annuals present on each transect, including all tortoise forage species, will be inventoried. Exotic annuals will also be measured to document spread and population increases. Surface disturbance will be measured by type and age. Perennials, soils, substrates, and hydrology will be measured every 10 years for 30 years. Annuals and surface disturbance will be measured every five years on all plots. Biomass will be measured on a subset of the mark-recapture plots every five years.

Further, we will quantify predator use of the site, documenting species, abundance, and distribution. Raven numbers (individuals and nests) will be recorded and the area below nests of both ravens and large raptors will be searched for tortoise remains. Qualitatively, OHV recreation, unforeseen developments, and any evidence of free-ranging dogs and/or coyotes will be documented and described. We have started raven surveys (Figure 4) and canid surveys (February 2016).

Health Assessments

The tortoise health assessments will help us find marked tortoises, transmittered or not, and monitor their survivorship. The assessments will provide health, disease, and trauma

indicators to help interpret group survivorship at and among sites and other categories (e.g., sex or age).

We will monitor disease incidence and other potential health issues via standardized assessments (USFWS 2015a, Berry and Christopher 2001) of clinical sign, injury, *Mycoplasma* spp. antibodies, cutaneous dyskeratosis, body condition scores, and mass-to-volume ratios [*cf* Loehr et al. 2004]) of telemetered tortoises, all tortoises captured on mark-recapture plots, and opportunistically on transect surveys (see *Transects*, below). For telemetered tortoises, a minimum of 150 transmittered tortoises (50 from each group, and at least 10 per site) will be assessed. A high site incidence of disease or trauma may trigger additional assessments for that site. We will assess health two times a year at each site, but once per individual tortoise per year, during the first five years when the initial stressors from translocation may be greater. We will repeat health assessments at 5 and 10 years when transmitters are removed. Formal health assessments and tissue collection (blood samples and oral swabs) will be performed in October (prior to brumation) and April when activity monitoring substantiates that tortoises are active enough to express immune system responses. In addition, each time a tortoise is handled it will be examined for clinical signs of disease and trauma.

Dispersal Area Monitoring

Although the radiotracking will provide the strongest information about survivorship via its relatively high sample size and repeated measures statistical analyses, the mark-recapture, health assessment, and density transect surveys will provide additional monitoring of the three groups (translocatees, residents, and controls). The mark-recapture data are limited to 12 localized sites, but tortoise density transects over dispersal areas can provide survivorship data of marked (transmittered or not) translocatees, residents, and controls over large areas of the study sites. These surveys will help us find these tortoises, help us estimate survivorship of groups, and help us quantify tortoise density (USFWS 2010), tortoise sign, predator sign, and anthropogenic disturbance. The latter measures will help interpret influences on tortoise survivorship. We will survey 1-km to 12-km long, line transects spaced over the recipient and control areas. Depending on tortoise density and the size of the dispersal area, there may be as many as 5 to 10 transect passes per km^2.

Also, we will use rain gauges at all sites to measure precipitation. We may install more sophisticated weather stations (e.g., Onset HOBO U30) at more protected sites to augment weather data (e.g., ambient temperature, wind speeds, relative humidity) collected by radiotrackers.

Data Analysis

We will analyze data from these for methods to evaluate the survivorship of the translocated and resident tortoises compared to control tortoises. Values not statistically different from the control values may be considered most successful (see Kaplan-Meier in Tracking, above). The additional data on behavior, burrow use, health status, habitat

quality, and other secondary variables (Table 5) may also be analyzed for effects on survivorship. We will consider additional tests and comparisons (e.g., analyses of variance comparing health status among controls, residents and translocatees, or between those that survive and those that died recently) as these may help explain the proximate causes of mortality. The number of comparisons possible is extensive, but may also include Analyses of Covariance (ANCOVA or MANCOVA) to evaluate categorical differences after correcting for covariates such as body size, body condition scores, distances moved, rainfall, or annual plant production. We may also consider multimodel inference analyses to evaluate effects of group, sex, site, rainfall, and other variables (e.g., Burnham and Anderson 2002; Nussear et al. 2012).

4.1.2 ASSIMILATION

Assimilation into the population would be accomplished if translocated tortoises reproduced successfully with resident tortoises. Results for Fort Irwin (R.C. Averill-Murray, pers. comm.) suggest that translocated males were not assimilating to the resident population (they did not produce offspring), but the translocated females produced offspring from resident males. There may be a period that translocated animals need to assimilate.

The main question is to what degree translocated tortoises assimilate with residents. Also, we may be able to use control values as an additional comparison for some measures of assimilation. We will evaluate assimilation via genetic analyses, but will also consider phenotypic data (e.g., home range overlap and site fidelity; Nussear et al 2012) that may indicate potential for mixing of individuals, or settling of individuals in the recipient areas. Genetic assimilation can be measured by paternity of individuals, clutches, and the combination for each group (translocatees and resident), by using assignment tests to compare offspring genetics (e.g., 20 microsatellite loci from genomic DNA; Davy et al. 2011) to those of the parent populations, translocatees, and residents (genetic results evaluated using discriminant analyses; Y. Rico and R. Murphy, unpublished data). The mixture of offspring among the two parent groups indicates a degree of assimilation. Little is known about the long-term viability of stored sperm, and how quickly new inseminations may influence offspring parentage. We may be able to evaluate the rate (e.g., years) at which clutches become more mixed, and what is the equilibrium state of mixing.

We propose evaluating genetic assimilation at years 3 and 5 post-translocation, and if data indicate assimilation requires longer, at later times (e.g., years 7 and 9). The blood sample residues, from which the DNA is analyzed (Rico and Murphy, unpublished data), are retained (banked) from the health assessment studies for the translocatees and the transmittered residents. More residents can be sampled opportunistically in future health assessments. In late April 2019, we will assess whether females are gravid (via palpation, ultrasound scanning, or X-ray radiography) and transport gravid females to TRACRS to lay eggs, eat, and have a chance to rehydrate before being returned to the recipient site. When clutches hatch, we will analyze egg-shell DNA (or a small drop of hatchling blood) for individual and clutch paternity to assess genetic assimilation.

There are phenotypic data that suggest potential for assimilation, but are not as demonstrative as genetic assimilation described above. Movement distances or displacement (point to point), home range size and overlap, and indices of site fidelity (based on movement data) indicate how much space and habitat the translocatees share with residents (see Field et al. 2007 and Nussear et al. 2012). If they share these resources simultaneously, not segregated in time, it shows a strong potential for interaction and assimilation. Behaviors detected during tracking and other efforts (e.g., male-to-male fighting, sharing burrows, pacing site perimeters away from other animals), and isolated pockets of healthy animals or diseased animals of one group, also provide indices of isolation, conflict, or assimilation (e.g., lack of fighting, sharing burrows, restricted spread of disease). Home range overlap (% and unit areas), degree of agonistic behavior (number and intensity of bouts), and disease incidence (% clinically ill or ELISA positive) will be compared to those in control groups.

The reproductive output of female desert tortoises may also provide an index of assimilation. Isolated females or females with limited interaction with males can stop reproductive cycling (Gerald Kuchling & Brian Henen, unpublished observations) in captivity. This could happen in the wild if the females do not integrate well with the other group. Based on the Ft Irwin results translocated females may not limit assimilation (i.e., produce offspring with resident males) whereas translocated males may be limited in contributing to clutches of resident females. When we assess females for reproductive status in spring 2019, we can assess female reproductive status (gravid, non-gravid, and perhaps vitellogenesis; Henen and Hofmeyr 2003). Reduced cycling or vitellogenesis may take years post-translocation because females contain more than one size class of follicles in their ovaries and may take months to resorb follicles.

Assimilation may take time and will be monitored for change over time. Many of the same independent or predictor variables will be analyzed for assimilation as for survival (see Survival, Data Analysis above), with genetic, behavioral, and spatial (home range size and overlap), and genetic indicators of assimilation for each site. Comparing assimilation among translocatees, residents, and controls is the central question, but we will also analyze for effects of site, sex, health status, habitat condition, and weather.

4.2 OTHER RESEARCH

Although the main focus of a successful translocation is to maximize the survivorship and assimilation of the translocatees and residents, we are proposing five main recovery research questions and will consider other recovery-oriented research. We will perform these studies in concert with the primary survivorship and assimilation analyses, so most of the field and analytical methods outlined in Section 4.1.1, will be used to address these questions.

The five main research topics include:

1. Experimental translocation densities
2. Cattle grazing compatibility with desert tortoises

3. Efficacy of constrained dispersal as a tool for translocation
4. Effects of translocation distance
5. Efficacy of headstarting as a translocation tool

4.2.1 EXPERIMENTAL TRANSLOCATION DENSITIES

The primary emphasis of the translocation density analysis is to evaluate whether areas can support densities (number of tortoises per unit area, e.g., adults per km^2) higher than existing densities (Table 6).Densities have declined considerably throughout much of the Mojave Desert (see Section 1.1 above), so habitat in these recipient areas may support higher than current densities. Second, the current guidance (USFWS 2011b) of post-translocation densities (one standard deviation, SD, above the mean for the recovery unit) is deliberately cautious and conservative, but needs experimental testing. For this region, the Western Mojave Recovery Unit, the mean and SD are 2.8 & 0.9 adults/km^2, respectively (USFWS 2015b).

We will test translocation density increases that are 0.5SE (0.9 adult/km^2) to 2.3SE (6.4 adults/km^2), or 17% to 100%, higher than current densities (Table 6) to determine if these areas can support higher densities of tortoises.

We will assess survivorship of controls, residents and translocatees as described above (4.1.1), including Kaplan-Meier and contingency table analyses for survivorship of animals monitored primarily via radiotracking but also via mark-recapture plots, health assessments and dispersal area assessments. We hypothesize that survivorship among the groups (controls, residents and translocatees) would not differ among the translocation density categories (translocation densities). The alternative results (or hypotheses) would include translocatee survivorship is lower at the higher translocation densities (consider survivorship plotted against translocation densities (e.g., % or SE increase, Table 6). Resident survivorship may also be lower at higher translocation densities.

Within the context of translocation density tests for sites, we will also consider variation due to other categorical or continuous variables (e.g., sex, age, size, health status, habitat condition, rainfall, or indices of predator abundance). As with Nussear et al. 2012, we will consider AIC_c – based model selection to evaluate models including group, site, sex and other variables.

As described above for assimilation, we will evaluate genotypic assimilation including clutch paternities and genetic distances of offspring relative to the resident condition and translocatee condition (genetic diversity and genetic distance from residents). We hypothesize that offspring paternity and genetic diversity will be mixed intermediates including parents of both resident and translocatee parents, and genetic distances intermediate between resident and translocatee conditions. The number of translocatees relative to residents may influence the frequency of intermediate paternity clutches and average genetic distance between the two groups. These may also change over time, as described above (Section 4.1.1), but may settle within two years as translocatees settle and develop new site fidelities (Nussear et al. 2012). Hopefully they will settle within the

first five years of monitoring (with the larger samples sizes, n=225 per each group). Differences may be more difficult to detect as animals settle, and as radiotransmitter sample size is reduced to 50 per group in year six post-translocation.

We also hypothesize that the phenotypic variation (e.g., movements, home range size, home range overlap, site fidelity measures) of residents and controls will not differ between residents and translocatees within sites, and among translocation densities. If translocation density affects phenotypic variation, we may see differences among controls, residents and translocatee indices of assimilation (e.g., movements, home range size) with translocatees moving more and having different shaped or larger home ranges than residents have (Field et al. 2007, Nussear et al 2012). The differences may also disappear over time as translocatees settle (ca., in 2 years, Nussear et al. 2012).

We will also use various types of ANOVA to analyze for effects of group, sex, size, behavior, health status and other variables that may help explain different levels of phenotypic variation between groups, and between those that survive and those that die.

Each year for the first five years, we will also assess tortoise density via USFWS-(2015b) and TRED-consistent (Karl 2002) methods that have been used to evaluate tortoise density on the expansion areas and Combat Center since 2008.

4.2.2 CATTLE GRAZING COMPATIBILITY WITH DESERT TORTOISES

Grazing may contribute to the decline of desert tortoise populations (USFWS 1994a, 2011a, Boarman 2002). While there is a substantial body of information that shows both long-term and short-term changes to habitats as a result of grazing, the detrimental effects are not consistent and some benefits may accrue (Ellison 1960). Specific to desert tortoises, little definitive and focused research has been completed on the effects of cattle grazing (Avery 1998, Lovich and Bainbridge 1999). In the absence of information, but assuming that grazing is detrimental, landscape-level conservation actions have targeted the closure of allotments and have revised grazing management of other allotments (USFWS 2011a).

Studies to illuminate the specific grazing factors that affect desert tortoises will assist USFWS and CDFW in recovery efforts. These studies also may assist the allotment operator in revising grazing management practices to accommodate both cattle and tortoises, as an alternative to retiring the allotment. Such studies are encouraged by the revised desert tortoise recovery plan (USFWS 2011a:78). The Ord Mountain Cattle Allotment overlaps the Lucerne-Ord Recipient Site, thus providing an opportunity to examine the effects of grazing on desert tortoises. Both historic and current data on tortoise populations and grazing practices are available, thereby permitting an analysis of both long-term and short-term effects. The design of this study is currently under development and will be provided to USFWS for comment and approval prior to implementation.

We will measure the same basic survivorship, assimilation, tracking, plot density assessments, health assessments, dispersal area evaluations, and secondary or explanatory measurements indicated above. These analyses will be completed in a dispersal area next to a grazing allotment and within the grazing allotment. We will perform the same data analyses and statistical comparisons among groups, residents, translocates, and controls, but also with the comparison of data between grazed and ungrazed areas. We will use more than one control area (e.g, Daggett and Rodman-Sunshine Peak South) to bolster statistical power. Our null hypothesis is that there will be no difference between grazed and ungrazed areas for all of our comparisons.

4.2.3 EFFICACY OF CONSTRAINED DISPERSAL FOR SPECIES RECOVERY

Constrained dispersal is a technique wherein tortoises are translocated to a fenced site to encourage settling before the fence is removed.Unlike simple translocation to unfenced sites where tortoises may travel away from that site, the tortoises remain because they have established home ranges and become part of the social hierarchy within the fenced area. In this way, specific locations can be augmented, a critical feature if translocation is targeting depressed, depleted, or other specific areas. Results from one constrained dispersal study in the western Mojave Desert (Karl 2006) strongly suggest that the technique has merit.

We propose a constrained dispersal experiment to evaluate constrained dispersal as a recovery action, especially for depressed or depleted populations. The Cleghorn Recipient Site will be the single constrained dispersal site. Because the habitat has remained undisturbed in this area the number of tortoises that will be translocated to this site will attempt to result in post-translocation densities that may approximate historic densities. Current data for tortoises ≥160 mm indicate densities in the Cleghorn Lakes RTA ranging from 3.2 to 16.5 tortoises/km^2 (Table 8). The Cleghorn Recipient mark-recapture plot was sited in the square kilometer with the highest indication of tortoise density based on 2015 TRED transects (A.E. Karl, unpub. data). By contrast, the mean density for the West Mojave Recovery Unit (USFWS 2015) is substantially lower than actually observed locally. To maximize translocation success while still examining constrained dispersal as a translocation tool, 52 tortoises will be translocated to the constrained dispersal site. This is based on mean density measured during clearance surveys.

MCAGCC will install temporary tortoise exclusion fencing around the site perimeter (see Section 3.4.1, above, for fencing details). All tortoises in the constrained dispersal study will be transmittered and monitored for survival, assimilation, movements, home ranges, health, disease, and additional explanatory variables (e.g., demographics, predator indices, and weather), identical to the methods and schedule identified above (Section 4.1.1). Tracking will follow the schedule for all telemetered tortoises in the translocation program to support collecting data on locations, movements, burrow use, and behavior. MCAGCC will remove the tortoise exclusion fencing two years after initial translocation to permit tortoises to join the greater population. Repatriation will be assessed by continued monitoring of subsequent tortoise movements and comparing them to those of

control tortoises at the Cleghorn Control Site. Tracking will end at Year 10, consistent with the cessation of tracking on the larger telemetered group.

Table 8. Tortoise density data at the Cleghorn Lakes RTA and the number of tortoises that can be translocated into the Cleghorn Constrained Dispersal Site based on a 100% increase in population size. Density is calculated from two mark-recapture plots and clearance surveys in the SEA impact area[1]. Mean density for the West Mojave Recovery Unit (USFWS 2015b) is provided for comparison.

Source	**Current Tortoise Density (Point Estimate)** (# tortoises/km^2)	**Post-Translocation Density-100% Augmentation** (# tortoises/km^2)	**Alternatives for Number of Tortoises to be Translocated for 9.2 km^2 Constrained Dispersal Site**
Cleghorn Recipient Mark-Recapture Plot (2015)	16.5	33.0	16.5 * 8.1 = 134
Cleghorn Control Mark-Recapture Plot (2015)	12.1	24.2	12.2*8.1 = 99
Clearance Surveys for 12 km^2 (2015)	Mean = 6.4 (3.2-11.8)	12.8	**6.4*8.1 = 52** **(selected)**
West Mojave Recovery Unit Mean	2.8	5.6	2.8*8.1 =23

1. Density is the number of tortoises found in each full survey cell, assuming 74% of tortoises found on each pass, 93% cumulative.

We will record the same variables and complete the same analyses as for other sites. However, we anticipate that the constrained dispersal may expedite rates of assimilation, development of site fidelity, and home range overlap compared to the control site and other sites; we may advance comparisons to earlier periods compared to other experimental analyses. After the eastern fence is removed in 2018 or 2019 we anticipate very little additional dispersal will occur, as residents and translocatees will have settled inside the pen with their new neighbors. Still, we must document this settling and site fidelity by continued monitoring of transmittered animals (circa 20 tortoises per group during the first five years) and untransmittered animals in surveys.

4.2.4 Effects of Physical and Genetic Distance

Translocation risks mixing tortoises with different genotypes (see review and analysis by Averill-Murray and Hagerty 2014) and phenotypes, although the former is typically emphasized when evaluating translocations. In this translocation, we have the opportunity to evaluate both over a relatively short distance (<100 km). See Section 4.1.2, above, for additional details, especially concerning metrics besides genetic distances.

We have mapped genetic distances among tortoises of the WEA, SEA, and a few additional areas within MCAGCC, including the Bullion RTA. Similar to early studies

(Murphy et al. 2007, Hagerty et al. 2011, Averill-Murray and Hagerty 2014), there is a general pattern of divergence by distance (Rico & Murphy, unpubl data), with sites near the WEA clustering, sites near the SEA (Cleghorn Lake & Bullion RTA) clustering, but genetic distance substantial between the Bullion RTA and some WEA tortoises. The Bullion recipient area is only 60 to 70 km from the WEA tortoises, and about 10 km from the SEA tortoises, the latter probably linked to the Bullion RTA via the Cleghorn Lakes Wilderness (Figure 2b). Both of these distances are much less than the more than 200 km recommended physical limit for translocation before incurring a risk of outbreeding depression (Averill-Murray & Hagerty 2014). This is an opportunity to evaluate the relative success of translocating tortoises with some physical and genetic distance.We propose to move 112 and 36 tortoises from the WEA and SEA, respectively, to the Bullion Recipient site, a 100% experimental increase in density (Table 6). We would select WEA tortoises that had habitat similar to the SEA tortoises. The main difference between this and other recipient sites would be the physical and genetic distances. With data collected during survivorship monitoring (see Section 4.1.1, above), we could compare data among the WEA, SEA, residents, and Cleghorn Lake controls for patterns of mixing or segregation.

Having the DNA samples from the tortoises will also allow us test whether clutches produce offspring that are segregated or mixed among the WEA, SEA, and residents, and quantify the amount of mixing (see Assimilation, above). We would test this at about three years post-translocation, after tortoises have had time to settle. In late April 2019, we will collect gravid females and analyze eggshell DNA, as detailed in Section 4.1.2, above, to assess genetic assimilation among WEA, Bullion Residents, and SEA tortoises. We will repeat this prior to removing transmitters at the five year mark, and on subsets of translocatees that are monitored for the ten year period.

Our analyses will evaluate the effect of translocation distance on degree of assimilation. However, shorter translocations are likely to be less distinct genetically (shorter genetic distances, F_{ST}, between populations) and more difficult to distinguish offspring from either parent population.

We will record the same variables and complete the same analyses as for other sites and research questions. We hypothesize (null hypothesis) that there will be no significant differences between groups, sites, and sexes for most variables including survivorship, movements, site fidelity, demographics, and health. Also, the assimilation measures will be similar among sites, with the exception of the degree of genetic diversity among offspring, and perhaps the net genetic distance of sites relative to other sites. As genetic distance tends to be correlated to physical distance between sites, we anticipate little net increase in offspring genetic diversity at recipient sites close to donor sites (e.g., Bullion relative to Cleghorn impact areas) but a larger increase in offspring genetic diversity with more disparate sites (e.g., Bullion relative to WEA donor areas). Between close sites, it may be difficult to measure statistical differences in net diversity change because both sites should already be similar, at least compared to sites separated by greater distances.

4.2.5 THE USE OF HEADSTARTING IN TRANSLOCATION

MCAGCC is researching the efficacy of headstarting using long-term efforts. We may supplement these headstart data by monitoring the survivorship, growth, and health of small tortoises to be translocated. Almost nothing is known of the survivorship of juvenile tortoises, and these data for small tortoises will provide a comparison to the wild juvenile, translocatees, residents, and controls being monitored (35 per group).

MCAGCC is holding, protecting, and feeding 235 small, WEA & SEA tortoises at the TRACRS headstart facility because these tortoises are too small to receive radiotransmitters, and would be nearly impossible to find again in the clearance surveys. We will monitor their survivorship, growth, condition, and disease status at the facility and after the translocation. These data will be compared to those of large and small translocated, resident, and control tortoises. However, the post-translocation data for holding pen tortoises will be most robust for the largest tortoises (ca. 30) that we fit with radiotransmitters prior to their translocation.

We will measure and analyze the same survivorship, movement, dispersal, behavior, burrow use, growth, and health for comparing adults and juveniles in the initial translocation. We hypothesize the headstart animal data will be similar to that of residents and controls of similar body sizes (e.g., near 120mm carapace length [CL]). We also hypothesize that juvenile survivorship, movement, and dispersal will be lower than that of adults and large juveniles (ca. 160 mm CL) of all groups for each site. This may be explained by body size effects (e.g., surface to volume ratios) if larger tortoises experience higher survivorships, and larger tortoises perform better (e.g., survivorship, body condition scores and being healthy) in drought seasons and years. These data will be analyzed via the same statistical methods as indicated above for survivorship and other research questions, but assimilation measures would be restricted to phenotypic variables since these animals will not be reproductive.We may repeat similar levels of monitoring for additional cohorts of the headstarted animals, but may release some without transmitters after headstarting them to 100-120mm CL. As described for all translocatees, we will document the survivorship and other data of these released, holding-pen tortoises when we find them opportunistically or in mark-recapture plot and transect surveys.

5.0 PHYSICAL PROCESSES OF TRANSLOCATION

5.1 TORTOISE COLLECTION AND PROCESSING

Translocation in 2016 will occur in very early spring, shortly after tortoises become active. Tortoises must have adequate time to find or dig new refuges in the unfamiliar recipient areas prior to the onset of lethal surface temperatures, roughly 43-45°C (Zimmerman et al. 1994, Karl unpub data). Translocation can only occur if ambient temperatures will not exceed 35° (95°F) within one week of release and 32°C (90°F) within three hours of release (USFWS 2011b). Translocation in future years may occur in early spring or fall, in accordance with published guidelines (USFWS 2011b).

To meet the temperature goals, we expect to translocate approximately 100 tortoises per day, completing the translocation for the 1,138 tortoises by the end of the first week in April (or earlier if temperatures are unusually warm). Authorized handlers (see Section 6.1, below) will find and collect the tortoises, which will have been radio-tracked within one week prior to facilitate finding them. All tortoises will be transported in individual, sterilized plastic tubs with a lid and brought to local processing centers, where they will receive a visual health assessment. Any tortoise with clinical signs of disease will be transported to the TRACRS holding pen and not translocated (USFWS 2012), unless notified otherwise by USFWS. Transmitters will be removed from the tortoises that are not part of the study.

Depending on environmental conditions and hydration states, tortoises to be translocated may need to be hydrated within 12 hours before release, according to existing protocols (USFWS 2011b). The latter may include soaking in shallow water or epicoelomic injection of sterile saline or nasal/oral administration of drinking water at rates identified in USFWS (2015a). Tortoises <100mm will only be offered fluids nasally or orally. We will record the tortoise's mass before and after this procedure. Should a tortoise void, it will be re-hydrated using these techniques and rinsed thoroughly to remove predator-attracting odors.

5.2 TORTOISE TRANSPORTATION AND RELEASE

Each tortoise will be boxed and walked or driven to one of several dispatch points, where groups of tortoises will be flown by helicopter (preferably) or driven to a drop-off point at the relevant translocation area, according to the approved disposition plan for that tortoise. Biologists will carry the tortoises from the drop-off point to release them at designated release sites. During all transportation, tortoises will be kept shaded, away from hot surfaces, and padded as needed to avoid shell or internal trauma.

All tortoises will be released under shrubs and the UTM coordinates recorded. Juvenile tortoises are highly vulnerable to predation and require special consideration for successful translocation. Small tortoises will be released in the morning to avoid inadvertently attracting nocturnal predators to a release site. All juveniles will be released near inactive rodent burrows or other protective cavities.

6.0 PROCEDURES APPLICABLE TO ALL ACTIVITIES

6.1 AUTHORIZED HANDLERS

USFWS describes a single designation for biologists who can be approved to handle tortoises - "Authorized Biologist" (AB) (http://www.fws.gov/ventura/speciesinfo/protocols_guidelines/docs/dt; USFWS 2009a). Such biologists have demonstrated that they possess sufficient desert tortoise knowledge and experience to handle and move tortoises appropriately. Specific ABs will be approved to perform specific tasks, including such specialized tasks as health assessments, blood sampling, and transmitter attachment. Only those biologists authorized by USFWS and CDFW can perform

specific tortoise handling tasks and clearance surveys. For USFWS, ABs are permitted to approve specific desert tortoise monitors (BMs) to assist in certain tasks, at the AB's discretion, without further approvals from USFWS. Direct supervision of monitors by the AB (i.e., voice and sight contact) is required for all clearance surveys and certain other specialized tasks. All ABs will be authorized via MCAGCC permits from USFWS (TE17730-5) and CDFW (Scientific Collecting Permit [SCP] 10112).

6.2 HANDLING TECHNIQUES AND TEMPERATURES

All tortoise handling will be consistent with NREA permits and the BO (USFWS 2012) and will be accomplished by techniques outlined in the USFWS *Field Manual* (2009b: Sections 7.6-7.8), including the most recent disease prevention techniques (e.g., USFWS 2015b). Handling time will be minimized to the extent possible to avoid stress to the animals. Handling will adhere to USFWS (2010b) handling temperature guidelines; tortoises may be handled only when air temperature measured at 5 cm (2 in) above the ground (shaded bulb), is not expected to exceed 35°C (95°F) during the handling session. If the air temperature exceeds 35°C during handling or processing, desert tortoises will be kept shaded in an environment where the ambient air temperatures do not exceed 32.7 °C (91°F) and air temperature does not exceed 35°C.

6.3 HEALTH ASSESSMENTS

Methods detailed in *Health Assessment Procedures for the Desert Tortoise (Gopherus agassizii): a Handbook Pertinent to Translocation* (USFWS 2015a) will be followed for all sampling techniques and equipment. Health assessments and tissue collection will not occur until after 15 May or four weeks from the time individual tortoises have become active after winter brumation, unless approved by USFWS (USFWS 2015a). *Mycoplasma agassizii*, *M. testudineum*, and herpesvirus are the major pathogens currently being sampled, but other pathogens may be tested as their evaluation techniques become validated for desert tortoises. Blood samples will be taken via subcarapacial venipuncture; oral mucosa will be sampled with oral swabs. A physical examination, including the oral cavity, will focus on clinical signs of disease, body condition, and ectoparasites. Careful attention will be paid to sample collection, processing, storage, shipping, and disease transmission to optimize the sampling program and minimize any risks to tortoises. If a tortoise voids, it will be re-hydrated using permitted methods (USFWS 2015a).

6.4 TRANSMITTERS

Larger tortoises (≥160 mm in carapace length [MCL]) will receive Holohil RI-2B transmitters (24 mm wide by 11 mm thick; 15 g; www.holohil.com). Large juvenile tortoises will receive small RI-2B transmitters (6 g) and small juveniles that are large enough to transmitter will be affixed with Holohil PD2s (2-4 g). All transmitters will be appropriate for the tortoise's size, shell shape, and mass, and in no case will be greater than 10% of the tortoise's mass. Transmitters will be epoxied to a carapace scute using five-minute gel epoxy. For males and juveniles, transmitters generally will be affixed to

the fifth vertebral; for females and large juveniles believed to be females, transmitters will be affixed to the anterior carapace in the most appropriate location for the animal's shell shape that will preclude interference with righting. The transmitter antenna will be fed through a plastic sheath with a diameter slightly greater than the antenna. This sheath will be epoxied low on the carapace, just above the marginal scutes, and split at the scute seams (growth areas). This technique will permit the antenna to slip freely in the sheath, thereby precluding distortion on growing tortoises. Because the antenna sheath may be tightly curved on a very small tortoise, potentially constricting antenna movement with subsequent growth distortion, much more of the antenna will remain free on small tortoises, including only being attached on the fifth vertebral to minimize torque on the battery. Transmitters will be changed as necessary, earlier than battery life suggests or when the units appear to be malfunctioning. We will record transmitter details (manufacturer, serial number, frequency, installation, and all change dates) for all tortoises and submit this spreadsheet with the annual reports to USFWS and CDFW.

6.5 TORTOISE MORTALITIES

Should a transmittered or translocated tortoise die, the cause of death will be determined to the extent possible. NREA will submit this information and the tortoise location to USFWS and CDFW verbally within 48 hours, or via e-mail within five business days. In the annual report, (see Section 8.0, below), MCAGCC will provide a detailed accounting of all mortalities, circumstances, and actions implemented to prevent similar instances in the future (USFWS 2012). Fresh carcasses may be salvaged and necropsied upon direction from NREA.

7.0 FUTURE CLEARANCES

Fencing is not proposed for the high and medium impact areas to exclude tortoises from entering the impact areas. Consequently, additional clearance surveys are required in subsequent years to minimize tortoise losses. During each year, clearance surveys will be performed on any square kilometers in the impact areas that had three or more tortoises in the previous clearance (USFWS 2012). All clearances will be consistent with methods described above. For any tortoise found, the standard measurements and assessments that were used on other tortoises will be completed and the tortoise numbered and transmittered. All tortoises that are suitable candidates for translocation, based on the health assessment, would be translocated to designated recipient sites in accordance with the approved disposition plan for each tortoise.

8.0 REPORTING

On January 31 of each year (USFWS 2012), MCAGCC will provide a full accounting of all activities associated with the translocation program, both for the calendar year and cumulatively, plus analyses undertaken relative to the effectiveness of the translocation program. The report will include metadata consistent with NREA's recovery permits (TE-017730-5 and SCP 10112). MCAGCC will also engage USFWS and CDFW via telephone, as necessary, to keep the agencies involved and informed, and implement

contingency measures in the evet unanticipated problems arise (e.g., mortality events, heightened predation).

9.0 LITERATURE CITED

Averill-Murray, R. and B.E. Hagerty. 2014. Translocation relative to spatial genetic structure of the Mojave desert tortoise, *Gopherus agassizii*. Chelonian Conservation and Biology 13(1):35-41.

Avery, H. 1998. Nutritional ecology of the desert tortoise (*Gopherus agassizii*) in relation to cattle grazing in the Mojave Desert. Dissertation, University of California, Los Angeles. 163 pp.

Berry, K.H. 1996. Memo to BLM Area manager, Molly Brady, regarding observations on permanent BLM study plots between 1979 and 1996. Riverside, CA.

--- and M.M. Christopher. 2001. Guidelines for the field evaluation of desert tortoise health and disease. J. Wildlife Diseases 37:427-450.

Boarman, W.B. 2002. Threats to desert tortoise populations: a critical review of the literature. Unpub. report prepared for the West Mojave Planning Team and the Bureau of Land Management. 86 pp.

Boarman, W.B. Kristan, III, and A.P. Woodman. 2008. Neither here nor there: current status of Sonoran desert tortoise populations in Arizona. Paper presented at the 2008 Desert Tortoise Council Symposium, Las Vegas, NV.

Burnham, K.P. and D.R. Anderson. 2002. Model Selection and Multimodel Inference, 2nd ed. Springer, New York, NY.

California Energy Commission, California Department of Fish and Wildlife, U.S. Bureau of Land Management and U.S. Fish and Wildlife Service. 2014. Desert Renewable Energy Conservation Plan (DRECP) and Environmental Impact Statement.

Chapman, D.G. 1951. Some properties of the hypergeometric distribution with applications to zoological censuses. Univ. of California Publ. in Statistics 1:131-160.

Chavez, A. 2015. Range Conservationist, Barstow Field Office. Discussion with E.L. Smith regarding future development in the Ord-Rodman ACEC (DWMA), 11 March 2015.

Cook, P. 2015. California Minerals, Off-Road Recreation and Conservation Act (CMORCA). HR 3668. EDW15157. Presented to the 114th Congress, 1st Session. 130 pp.

Davy, C.M., T. Edwards, A. Lathrop, M. Bratton, M. Hagan, B. Henen, K.A. Nagy, J. Stone, L. S. Hillard and R.W. Murphy. 2011. Polyandry and multiple paternities in

the threatened Agassiz's desert tortoise, *Gopherus agassizii*. Conservation Genetics 12:1313-1322.

Dhondt, A. 1988. Carrying capacity: a confusing concept. Acta Oecologica 9(4):337-346.

Edwards, R.Y. and C.D. Fowle. 1955. The concept of carrying capacity. Trans. of the North American Wildlife and Natural Resources Conference 20:589-602.

Ellison, L. 1960. Influence of grazing on plant succession of rangelands. Botanical Review 26:1-78.

Esque, T.C., K.E. Nussear, K.K. Drake, A.D. Walde, K.H. Berry, R.C. Averill-Murray, A.P. Woodman, W.I. Boarman, P.A. Medica, J. Mack and J.S. Heaton. 2010. Effects of subsidized predators, resource variability, and human population density on desert tortoise populations in the Mojave Desert. Endangered Species Research 12:167-177.

Feinstein, D. 2015. California Desert Conservation and Recreation Act ("Feinstein Bill"). EDW15157. Presented to the 114th Congress, 1st Session. 149 pp.

Field, K.J., C.R. Tracy, P.A. Medica, R.W. Marlow, and P.S. Corn. 2007. Return to the wild. Translocation as a tool in conservation of the desert tortoise (*Gopherus agassizii*). Biological Conservation 136:232-245.

Hagerty, B.E., K.E. Nussear, T.C. Esque, and C.R. Tracy. 2011. Making molehills out of mountains: landscape genetics of the Mojave Desert tortoise. Landscape Ecology 26:267-280.

Henen, B.T. and M.D. Hofmeyr. 2003. Viewing chelonian reproductive ecology through acoustic windows: cranial and inguinal perspectives. J. Experimental Zoology 297A:88-104.

Henen, B.T., and O.T. Oftedal. 1998. The importance of dietary nitrogen to the reproductive output of female desert tortoises (*Gopherus agassizii*). Proceedings of the Second Comparative Nutrition Society Symposium. 1998: 83-88.

Jones, R. 2002. Status of desert tortoise populations in the California Desert. California Department of Wildlife. Unpub. paper. 3 pp.

Karl, A.E. 2002. Desert tortoise abundance in the Fort Irwin Training Center Land Acquisition Area: second year studies. Unpublished report prepared for Charis Corporation, Temecula, California. 46 pp plus appendices.

---. 2004. Drought: acute effects and impacts to recovery of the desert tortoise. Paper presented at the 2004 Desert Tortoise Council Symposium, Las Vegas, NV.

---. 2006. Hyundai Motor America Proving Grounds desert tortoise translocation study. 2006 annual report. Prepared for Hyundai America Technical Center, Inc. 19 pp.

---. 2010. Ridgecrest Solar Power Project. Analysis of population and species impacts to the desert tortoise, due to the siting of this project in its current location. Docketed 29 April 2010. 19 pp.

--- and Resource Design Technology, Inc. 2007. Mesquite Regional Landfill. Initial desert tortoise clearance-October 2005. Submitted to the Los Angeles County Sanitation Districts, Whittier, CA. 28 pp plus attachments.

--- and B.T. Henen. 2011. United States Marine Corps Land Acquisition and Airspace Establishment general translocation plan for desert tortoises. Prepared for NREA, MCAGCC, Twentynine Palms, CA. 55 pp.

Kiva Biological Consultants. 2008. Summary report for two desert tortoise trend study plots, health assessments, and focal observations conducted on the Marine Corps Air Ground Combat Center Spring 2008. Prepared for Naval Facilities Engineering Command Southwest, San Diego, California. 39 pp.

---. 2009. Preliminary Report for Mark-Recapture Plots. 27 July 2009 letter to Brian Henen, NREA. 7 pp.

---. 2013. Summary report for health assessments conducted on desert tortoises at the Marine Corps Air Ground Combt Center, Bullion Training Area, Fall 2013. Prepared for NREA, MAGTFTC MCAGCC. 11 pp.

Loehr, V.J.T., B.T. Henen, and M.D. Hofmeyr. 2004. Reproduction of the smallest tortoise, the Namaqualand speckled padloper, *Homopus signatus signatus*. Herpetologica 60:444-454.

Longshore, K.M., J.R. Jaeger and J.M. Sappington. 2003. Desert tortoise (*Gopherus agassizii*) survival at two eastern Mojave Desert sites: death by short-term drought? Journal of Herpetology 37(1):169-177.

Lovich, J. and D. Bainbridge. 1999. Anthropogenic degradation of the Southern California Desert ecosystem and prospects for natural recovery and restoration. Environmental Management 24(3):309-326.

---. C.B. Yackulic, J. Freilich, M. Agha, M. Austin, K.P. Meyer, T. R. Arundel, J. Hansen, M.S. Vamstad and S.A. Root. 2014. Climatic variation and tortoise survival: has a desert species met its match? Biological Conservation 169:214-224.

McLuckie, A.M., M.R.M. Bennion, R.A. Fridell, and R. Radant. 2006. Status of the desert tortoise in the Red Cliffs Desert Reserve. Paper presented at the 2006 Desert Tortoise Council Symposium, Las Vegas, NV.

Murphy, R.W., K.H. Berry, T. Edwards, and A.M. McLuckie. 2007. A genetic assessment of the recovery units for the Mojave population of the desert tortoise, *Gopherus agassizii*. Chelonian Conservation Biology 6(2):229-251.

Nussear, K.E. 2004. Mechanistic investigation of the distributional limits of the desert tortoise, *Gopherus agassizii. Ph.D. Diss.* University of Nevada, Reno.

Nussear, K.E. C.R. Tracy, P.A. Medica, D.S. Wilson, R.W. Marlow and P.S. Corn. 2012. Translocation as a conservation tool for Agassiz's Desert Tortoises: survivorship, reproduction and movements. The Journal of Wildlife Management 76:1341-1353.

Otahol, C. 2015a. Biologist, Bureau of Land Management, Barstow Field Office. Discussion with E.L. Smith regarding future development in the Ord-Rodman ACEC (DWMA), 9 March 2015.

---. 2015b. Biologist, Barstow Field Office. E-mail to A. Karl 14 September 2015.

Peterson, C.C. 1994. Different rates and causes of high mortality in two populations of the threatened desert tortoise *Gopherus agassizii.* Biol. Conserv. 70(2):101-108..

Rees, W.E. 1996. Revisiting carrying capacity: area-based indicators of sustainability. Population and Environment: a Journal of Interdisciplinary Studies 17(3): 195-215.

Rich, J.T., J.G Neely, F.C. Paniello, C.C.J. voelker, B. Nussenbaum and E.W. Wang. 2010. A practical guide to understanding Kaplan-Meier curves. Otolaryngol Head Neck Surg. 143:331-336.

San Bernardino County. 2015. Property tax information. Available online at http://www.mytaxcollector.com/trDefault.aspx. Accessed 16 October 2015.

Symons, K. 2015. Field Manager, Barstow BLM Field Office. Agency coordination meeting on 1 July 2015.

TEC. 2011. Draft displaced off-highway vehicle recreation study. Prepared for the EIS for land acquisition and airspace establishment. Marine Corps Air Ground Combat Center, Twentynine Palms, CA. 102 pp.

TRW. 1999. Movement patterns of desert tortoises at Yucca Mountain. Unpubl. rept. to U.S. Department of Energy, Yucca Mountain Site Characterization Office, North Las Vegas, NV. Document No. B00000000-01717-5705-00049.

Turner, F.B. and K.H. Berry. 1984. Population ecology of the desert tortoise at Goffs, California. Unpub. rept. to Southern California Edison Co. No. 84-RD-4. 63 pp.

United States Bureau of Land Management. 2005. Final Environmental Impact Report and Statement for the West Mojave Plan, a Habitat Conservation Plan and California Desert Conservation Area Plan amendment. BLM California Desert District Office, Moreno Valley, CA.

---. 2006. Environmental assessment livestock grazing allotment authorization: EA Number EA-680-06-78. Allotment Name: Ord Mountain. BLM Barstow Field Office. 84 pp.

---. 2015. National Conservation Lands. Available online at www.blm.gov/ca/st/en/prog/blm_special_areas.html.

United States Department of the Navy. 2011a. Final Biological Assessment Land Acquisition and Airspace Establishment to support large-scale Marine Air Ground Task Force live-fire and maneuver training. July 2011. Prepared by AMEC Earth and Environmental, Inc.

---. 2011b. Final Environmental Impact Statement Land Acquisition and Airspace Establishment to support large-scale Marine Air Ground Task Force live-fire and maneuver training. October 2011. Prepared by TEC, Inc.

United States Fish and Wildlife Service. 1994a. Desert Tortoise (Mojave Population) Recovery Plan. U.S. Fish and Wildlife Service, Portland, OR. 73 pp. plus appendices.

---. 1994b. Final rule: determination of Critical Habitat for the Mojave population of the desert tortoise. FR 59(26):5820-5866.

---. 2008. Environmental Assessment to implement a desert tortoise recovery plan task: reduce common raven predation on the desert tortoise. Ventura Field Office. 156 pp.

---. 2009a. Desert tortoise field manual. Available online at (http://www.fws.gov/carlsbad/PalmSprings/DesertTortoise.html)

---. 2009b. Range-wide monitoring of the Mojave Population of the desert tortoise: 2007 annual report. Desert Tortoise Recovery Office, Reno, NV. 77 pp.

---. 2010. Preparing for any action that may occur within the range of the Mojave desert tortoise (*Gopherus agassizii*). U.S. Dept. of the Interior, USFWS, Ventura Field Office, Ventura, California. Available online at: http://www.fws.gov/carlsbad/PalmSprings/DesertTortoise.html.

---. 2011a. Revised recovery plan for the Mojave Population of the desert tortoise (*Gopherus agassizii*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. 222 pp.

---. 2011b. Translocation of Mojave desert tortoises from project sites: plan development guidance. Desert Tortoise Recovery Office, Reno, NV. 27 pp.

---. 2012. Biological opinion for land acquisition and airspace establishment to support large-scale Marine Air Ground Task Force live-fire and maneuver training, Twentynine Palms, California (8-8-11-F-65). Ventura Fish and Wildlife Office, Ventura, California. 129 pp.

---. 2015a. Health assessment procedures for the desert tortoise (*Gopherus agassizii*). A handbook pertinent to translocation. Desert Tortoise Recovery Office, Reno, NV. 77 pp.

---. 2015b. Range-wide monitoring of the Mojave desert tortoise (*Gopherus agassizii*): 2013 and 2014 annual reporting. Prepared by the Desert Tortoise Recovery Office, Reno, NV. 46 pp.

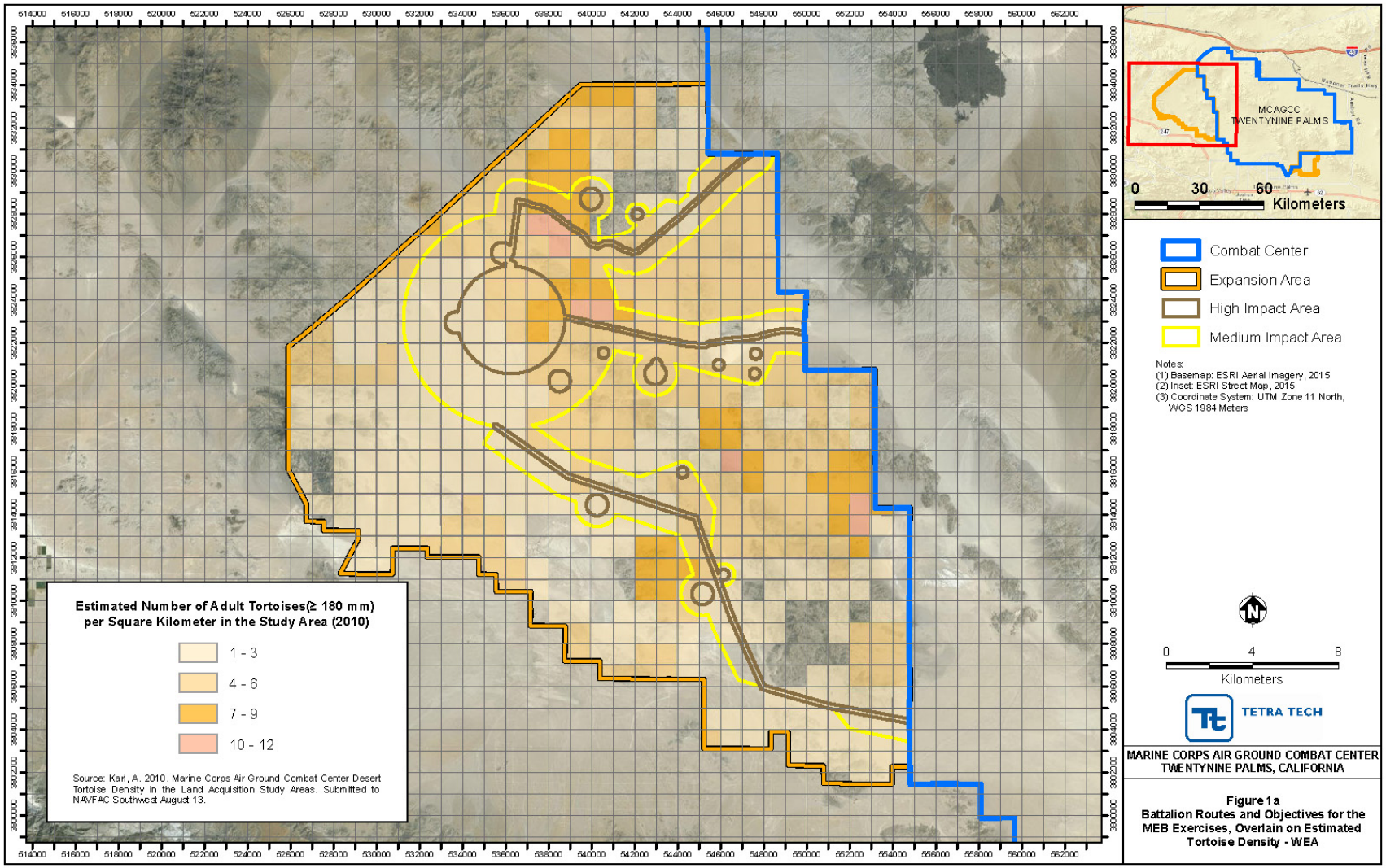
URS Corporation. 2012. California Natural Diversity Data Base submission for tortoises at the proposed Siberia Solar Site. La Jolla, CA.

Zar, J.H. 1999. Biostatistical Analysis, 4th Edition. Prentice-Hall, Inc., Upper Saddle River, New Jersey, USA. Pages xii + 663 + App1 to I23.

Zimmerman, L.C., M.P. O'Connor, S.J. Bulova, J.R. Spotila, S. J. Kemp, and C.J. Salice. 1994. Thermal ecology of desert tortoises in the eastern Mojave Desert: seasonal patterns of operative and body temperatures, and microhabitat utilization. Herp. Monogr. 8:45-59.

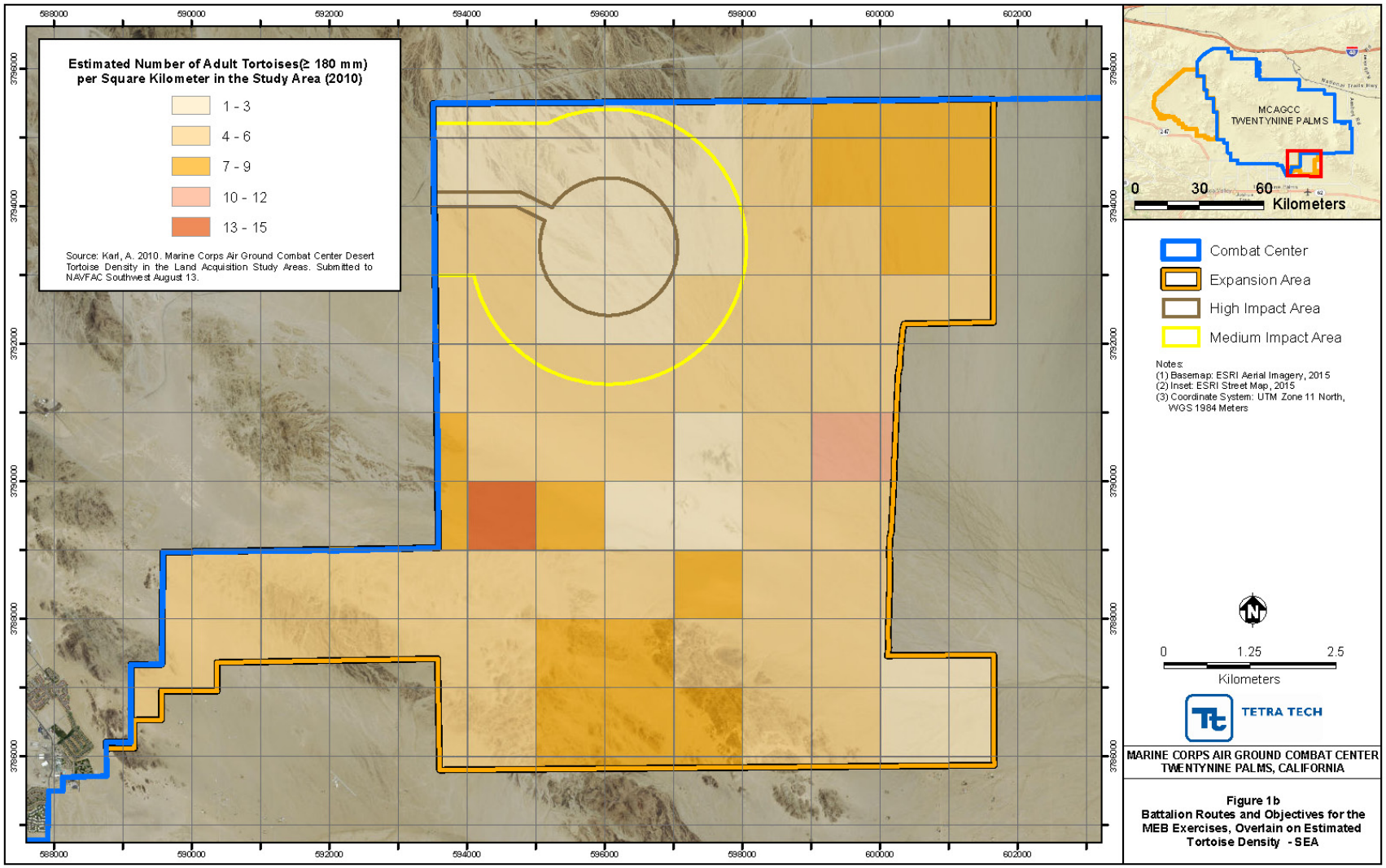
ATTACHMENT 1

FIGURES



MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 1a
Battalion Routes and Objectives for the MEB Exercises, Overlain on Estimated Tortoise Density - WEA



MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 1b
Battalion Routes and Objectives for the MEB Exercises, Overlain on Estimated Tortoise Density - SEA

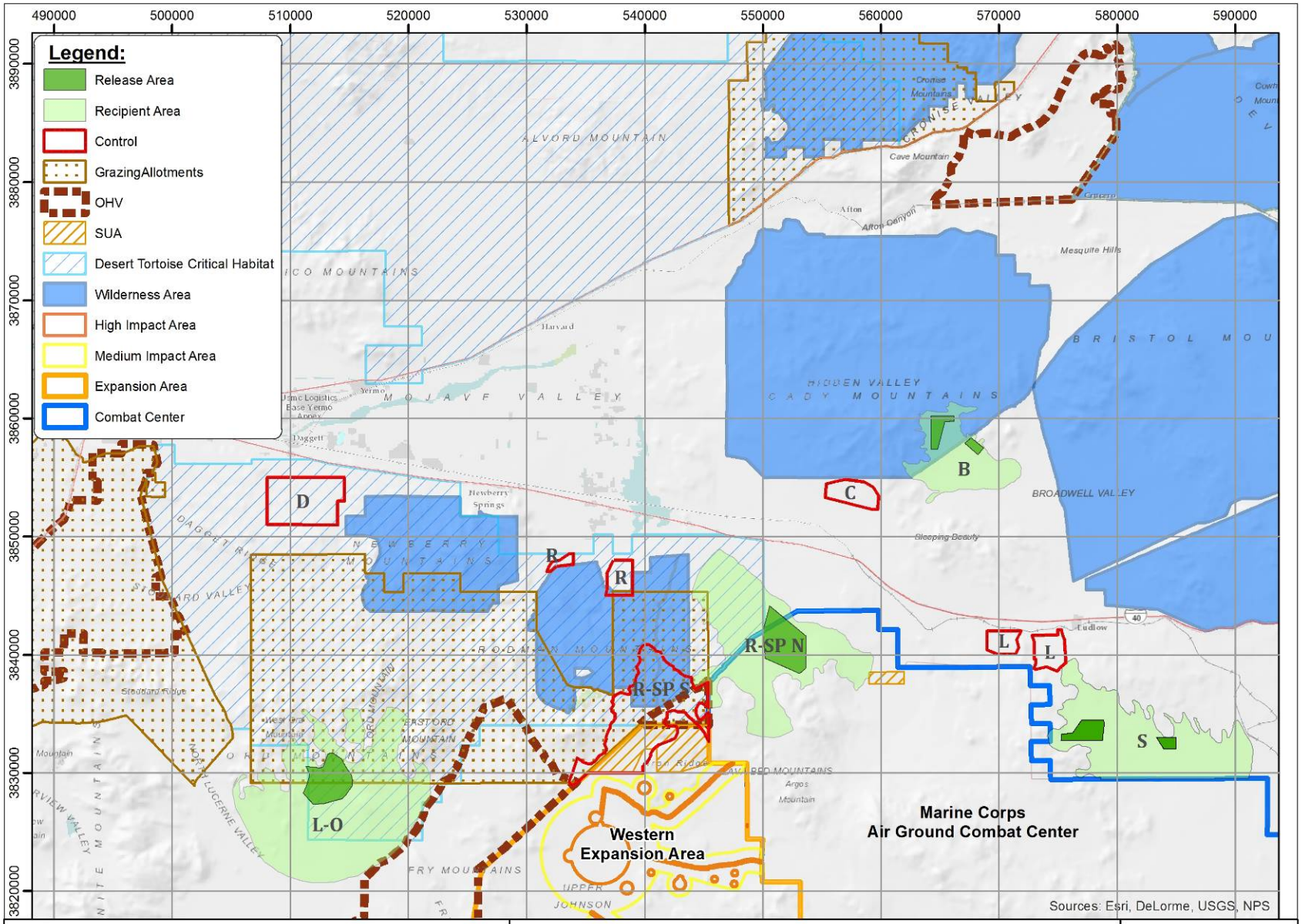


Figure 2a
Translocation Sites for the MCAGCC Expansion - WEA

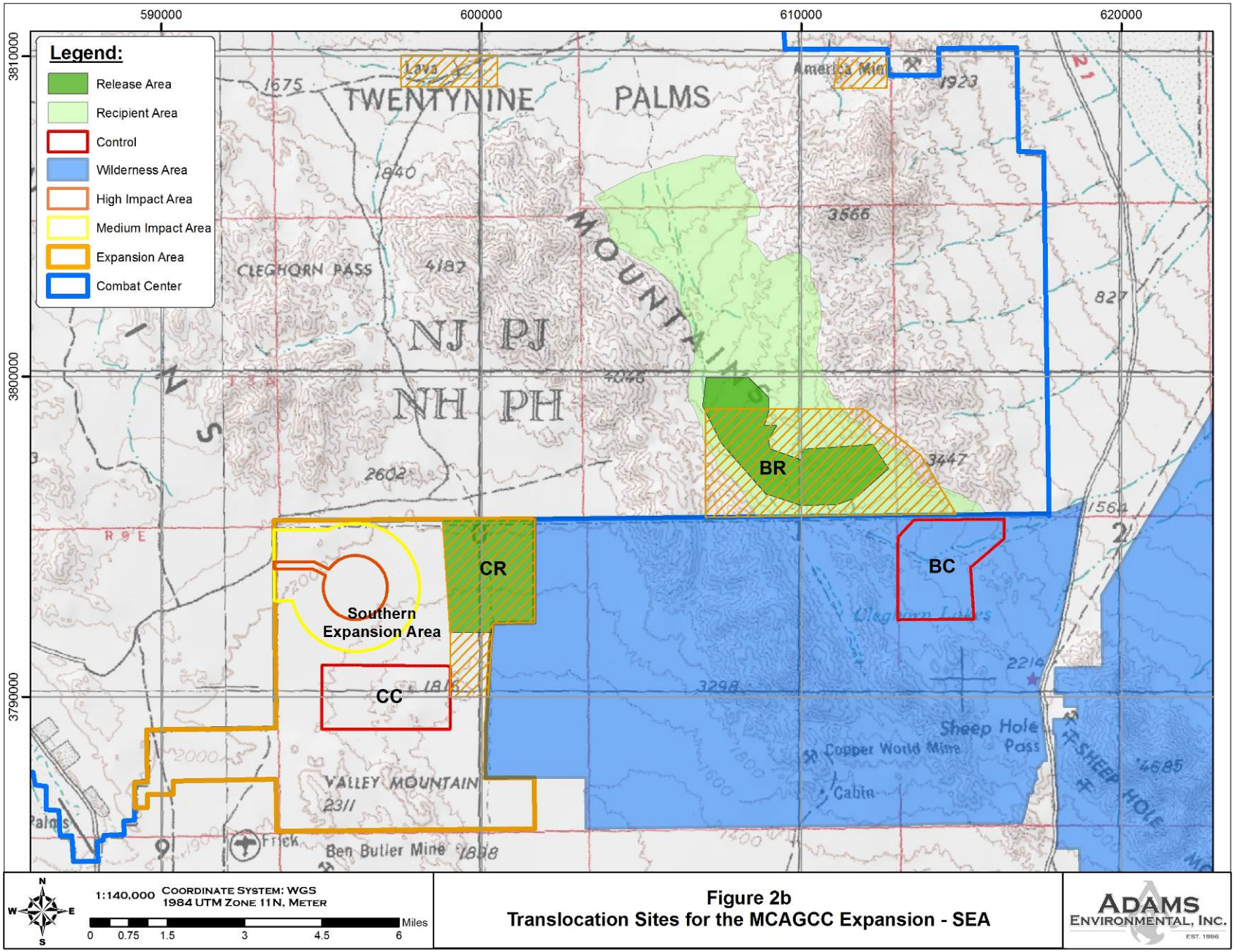
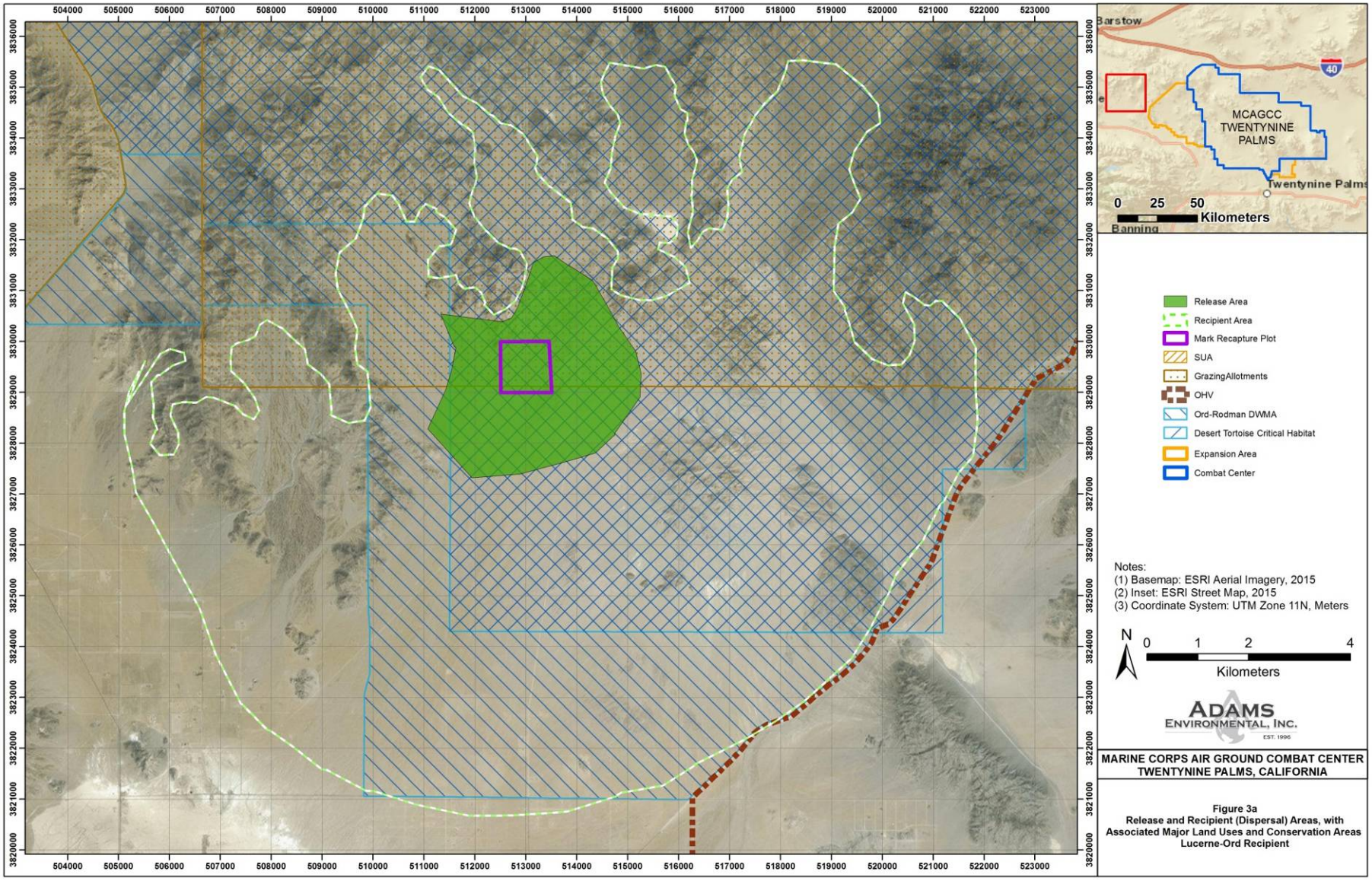


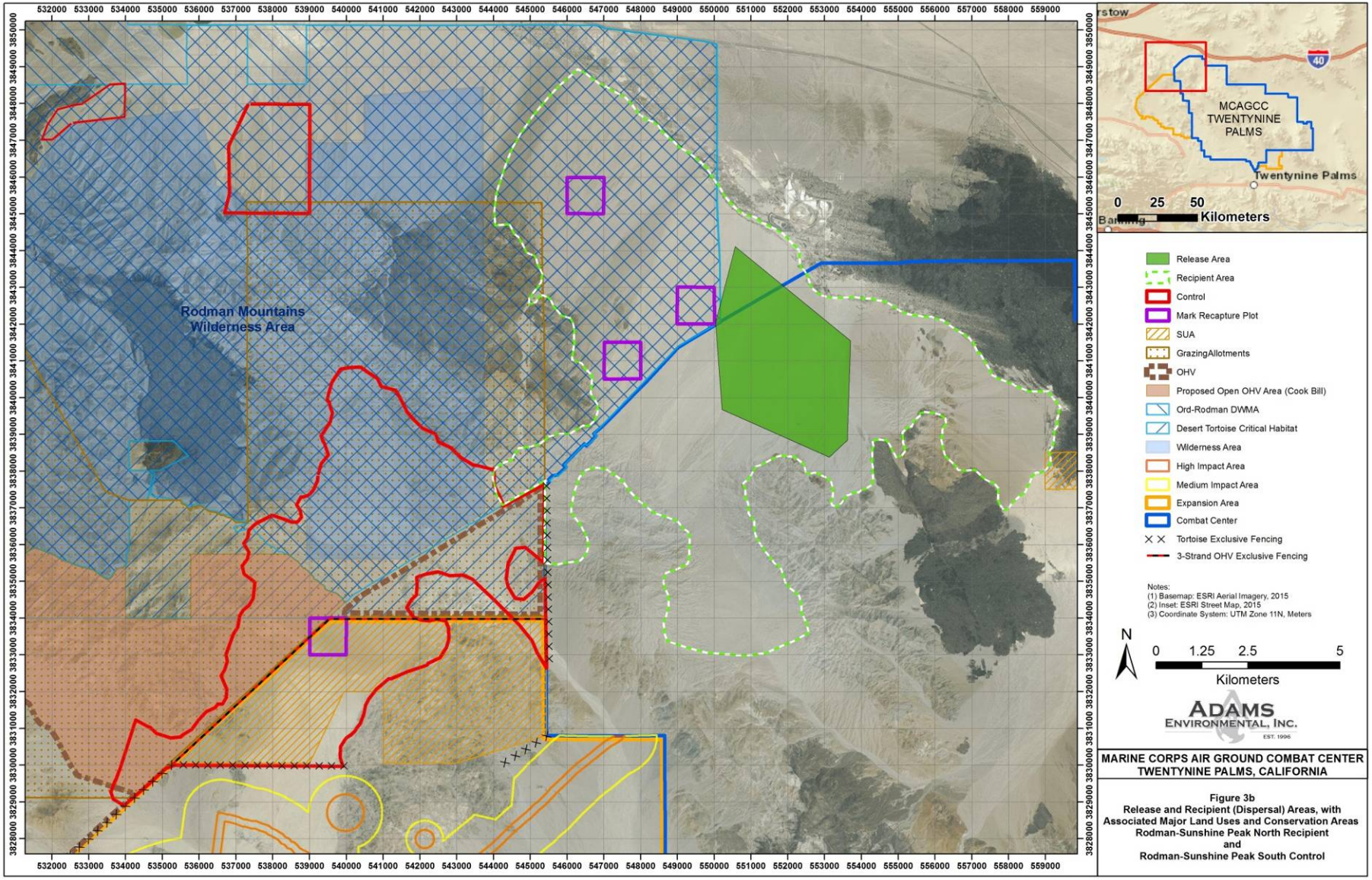
Figure 2b
Translocation Sites for the MCAGCC Expansion - SEA

ADAMS ENVIRONMENTAL, INC.
EST. 1996



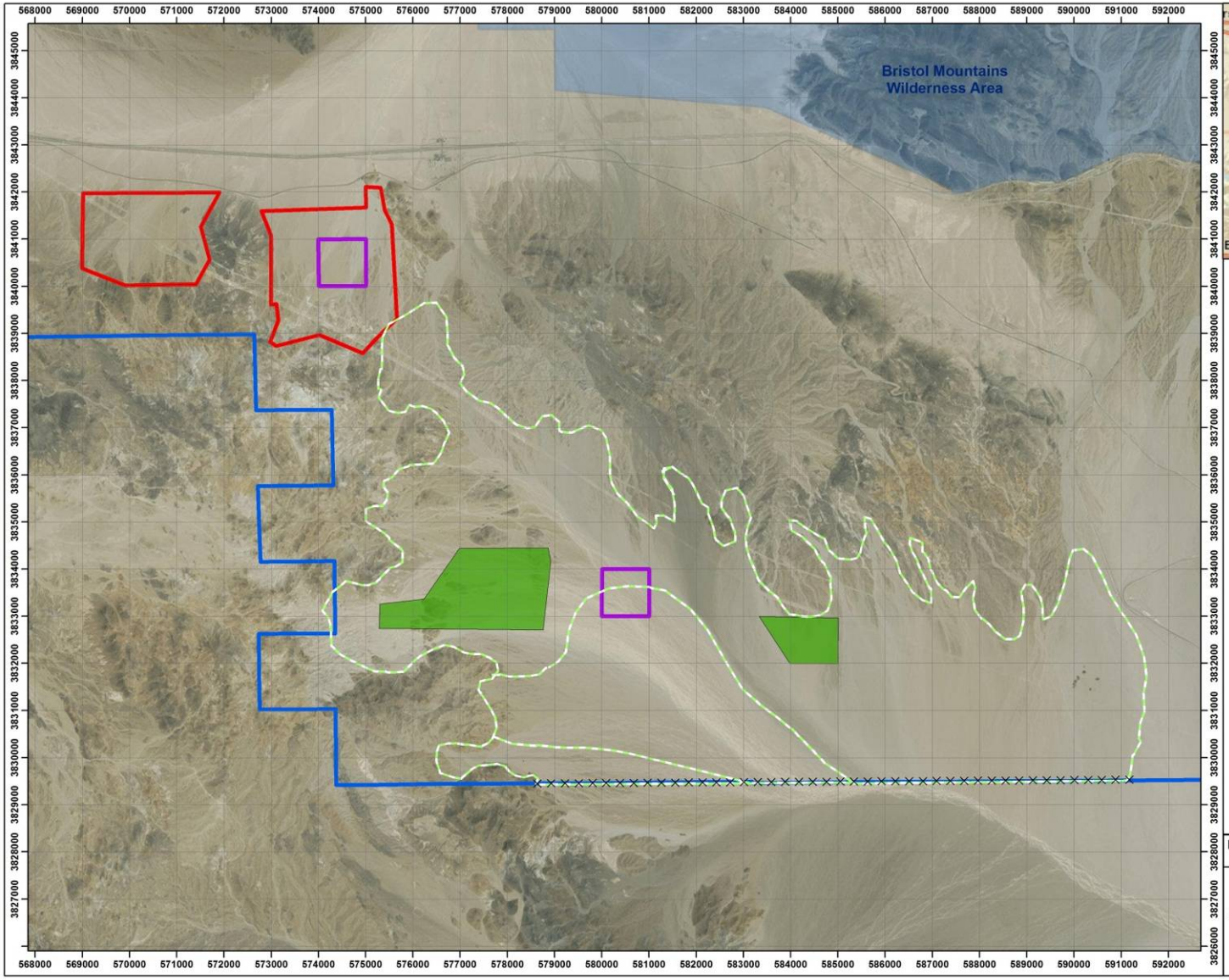
MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

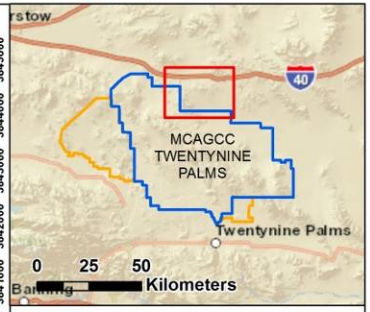
Figure 3a
Release and Recipient (Dispersal) Areas, with Associated Major Land Uses and Conservation Areas
Lucerne-Ord Recipient



MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 3b
Release and Recipient (Dispersal) Areas, with Associated Major Land Uses and Conservation Areas
Rodman-Sunshine Peak North Recipient
and
Rodman-Sunshine Peak South Control





Release Area
Recipient Area
Control
Mark Recapture Plot
Wilderness Area
Expansion Area
Combat Center

Notes:
(1) Basemap: ESRI Aerial Imagery, 2015
(2) Inset: ESRI Street Map, 2015
(3) Coordinate System: UTM Zone 11N, Meters

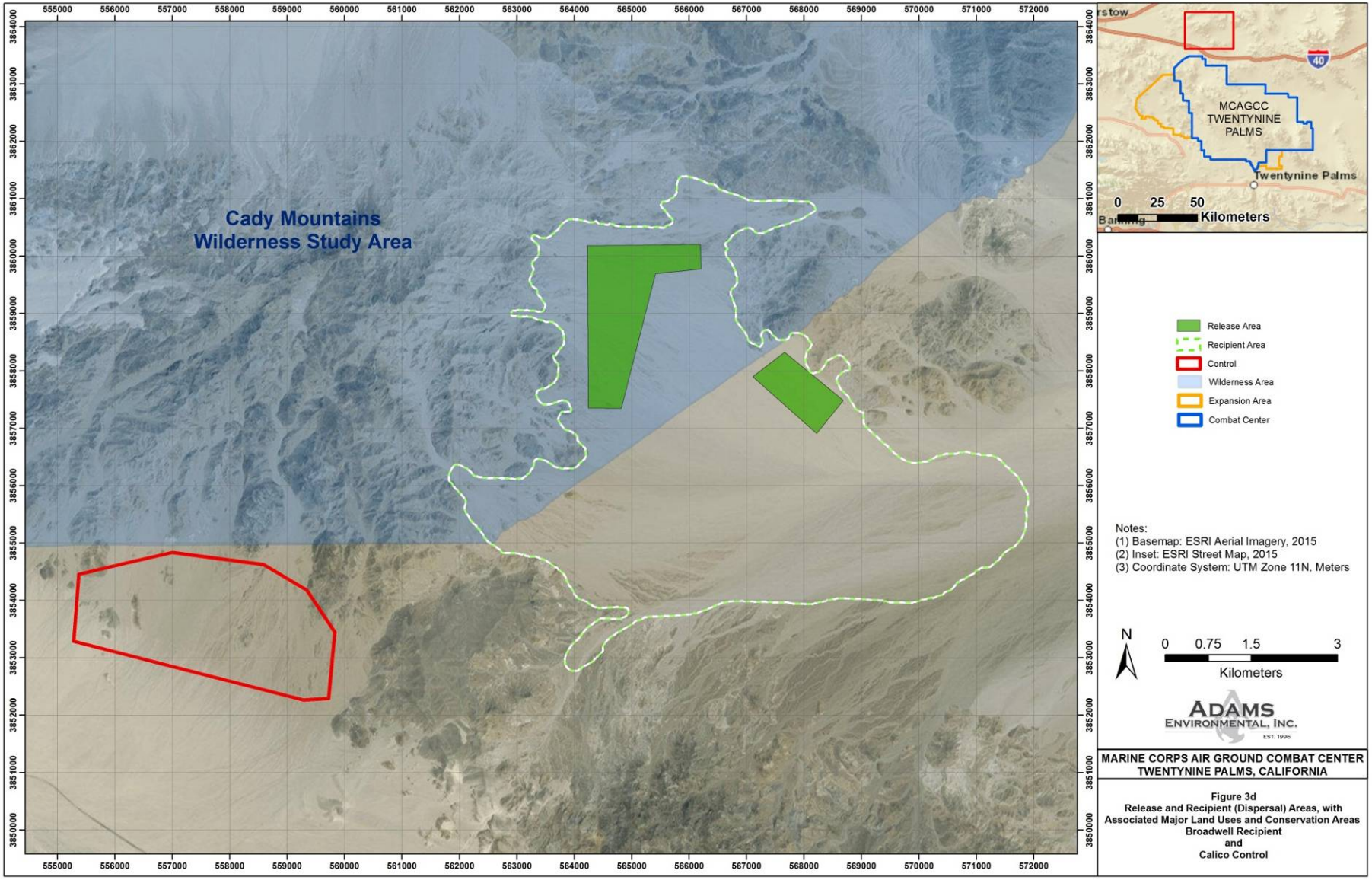
N

0 1 2 4
Kilometers

ADAMS ENVIRONMENTAL, INC.
EST. 1996

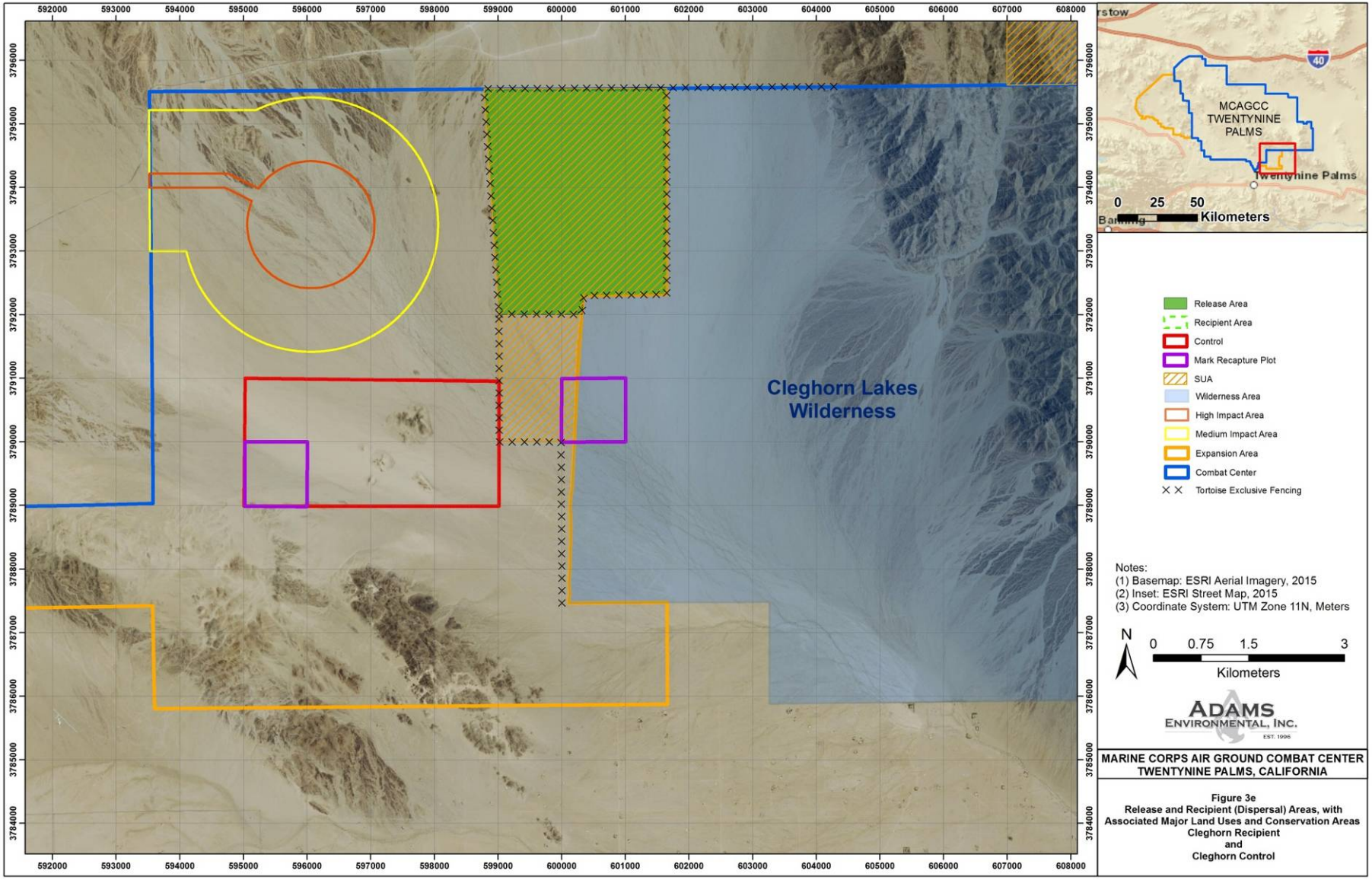
MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 3c
Release and Recipient (Dispersal) Areas, with Associated Major Land Uses and Conservation Areas
Siberia Recipient
and
Ludlow Control



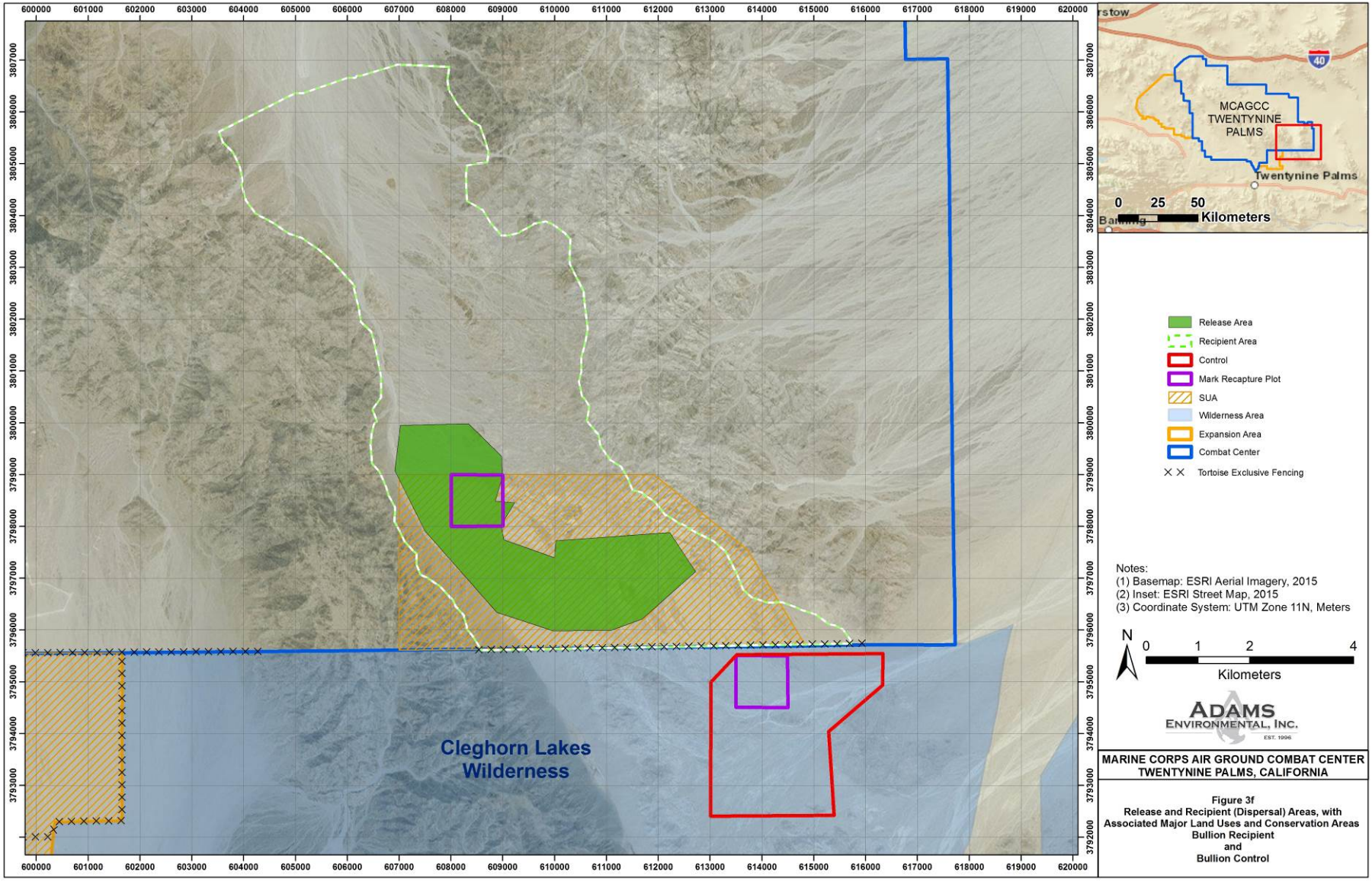
MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 3d
Release and Recipient (Dispersal) Areas, with Associated Major Land Uses and Conservation Areas
Broadwell Recipient
and
Calico Control



MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 3e
Release and Recipient (Dispersal) Areas, with Associated Major Land Uses and Conservation Areas
Cleghorn Recipient
and
Cleghorn Control



MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 3f
Release and Recipient (Dispersal) Areas, with Associated Major Land Uses and Conservation Areas
Bullion Recipient
and
Bullion Control

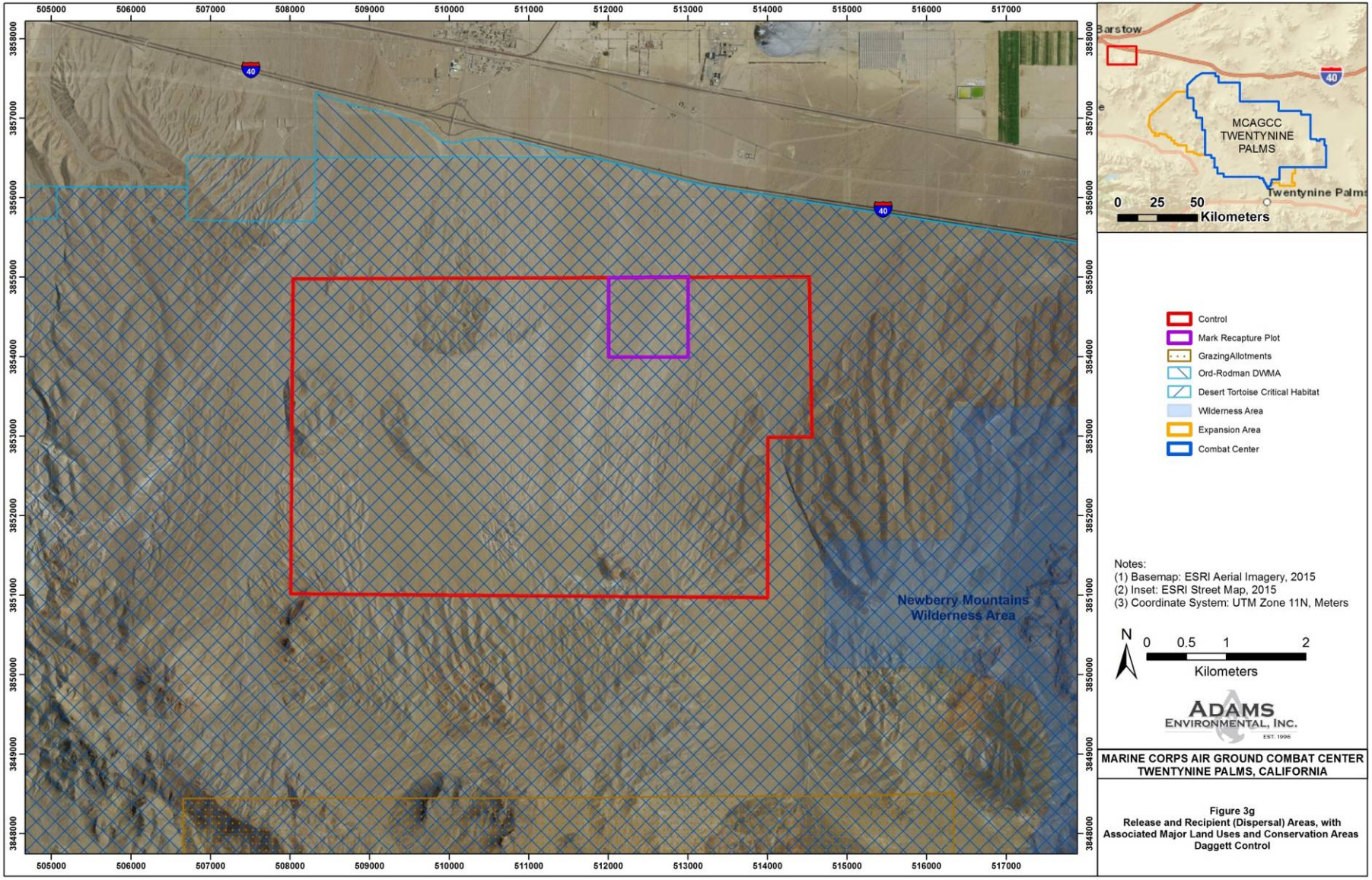


Figure 3g
Release and Recipient (Dispersal) Areas, with Associated Major Land Uses and Conservation Areas
Daggett Control

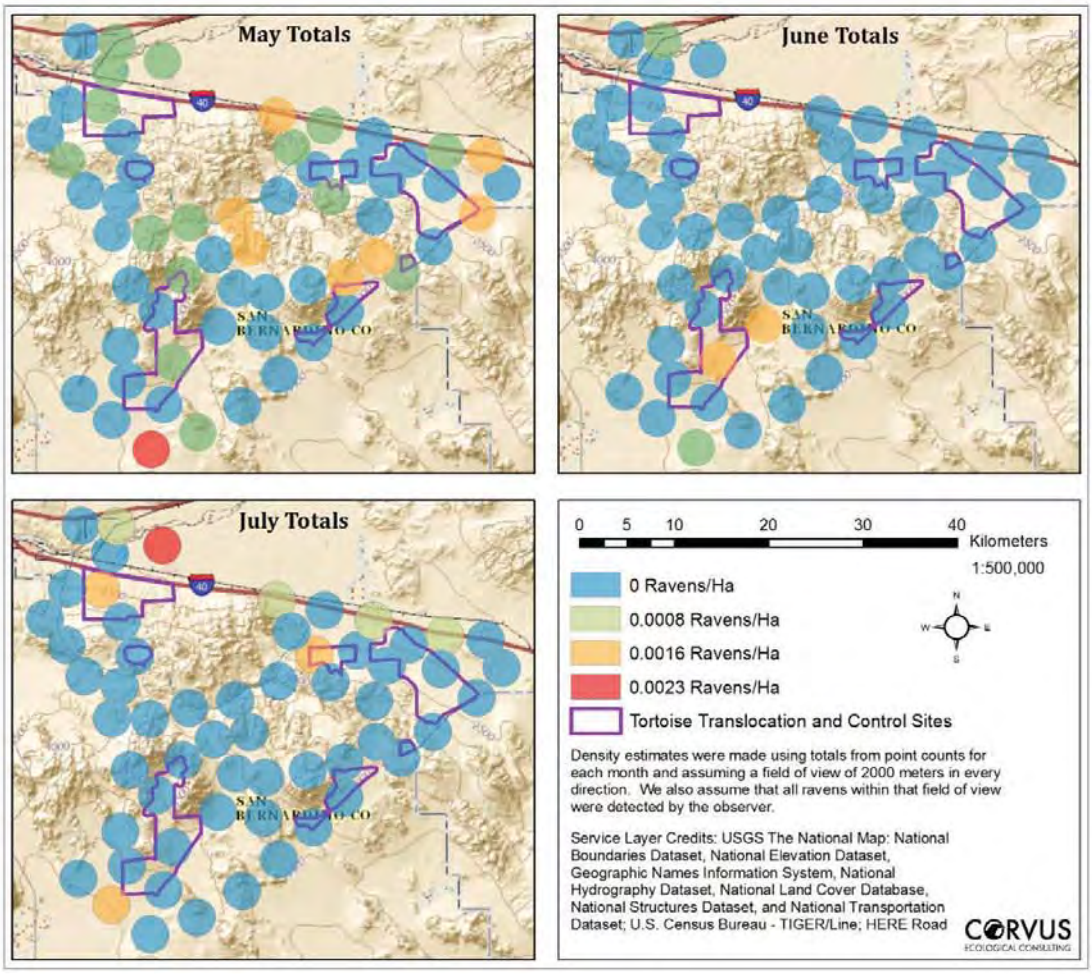
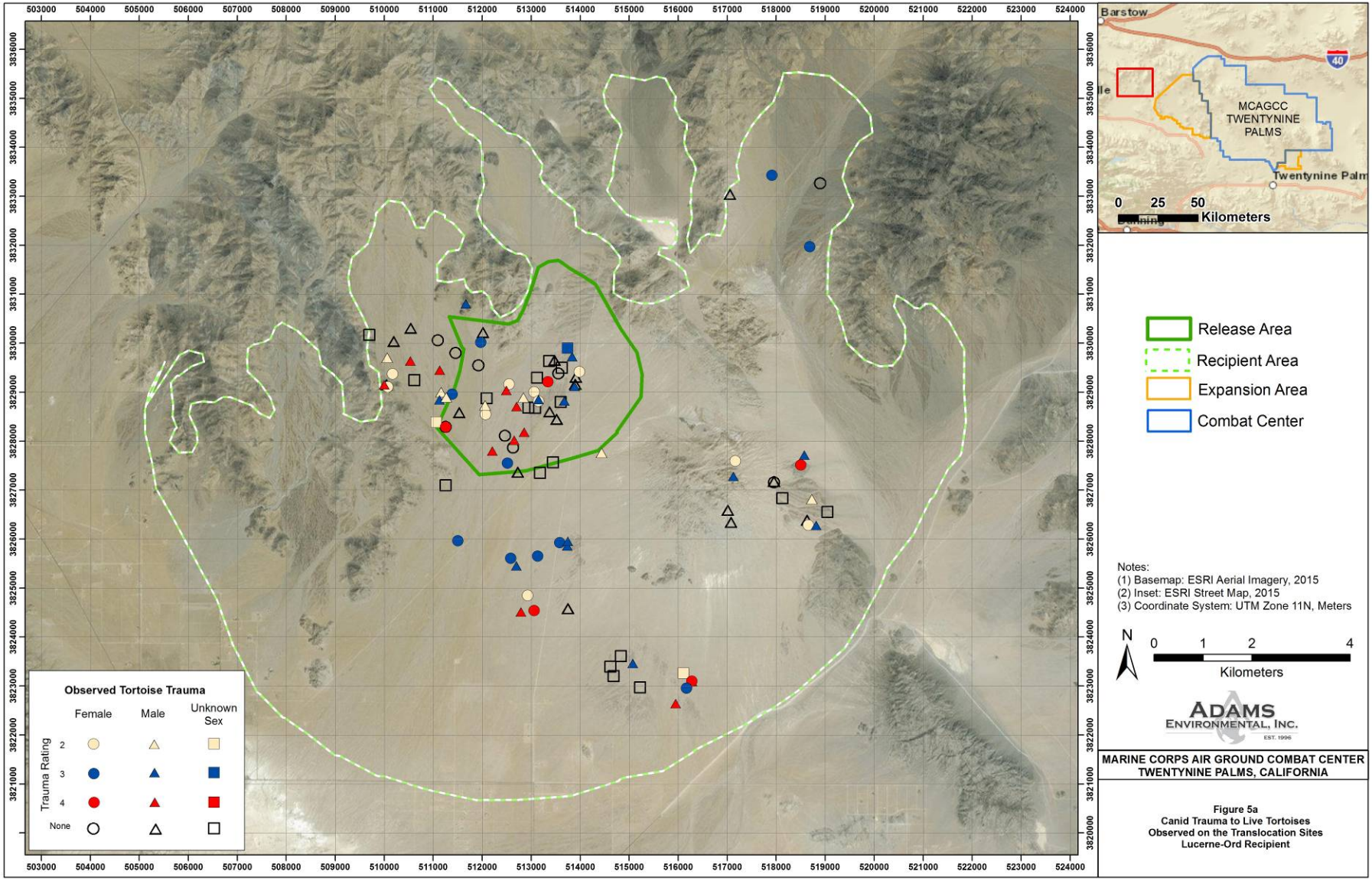


Figure 4. Comparative raven pressure at four translocation sites (purple polygons). Point count totals for three months in Spring and Summer 2015 are shown for Lucerne-Ord Recipient, Rodman-Sunshine Peak North Recipient, Rodman-Sunshine Peak South Control, and Daggett Control. See legend for calculation of raven pressure. Source: Corvus Ecological, unpub. data.



MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 5a
Canid Trauma to Live Tortoises
Observed on the Translocation Sites
Lucerne-Ord Recipient

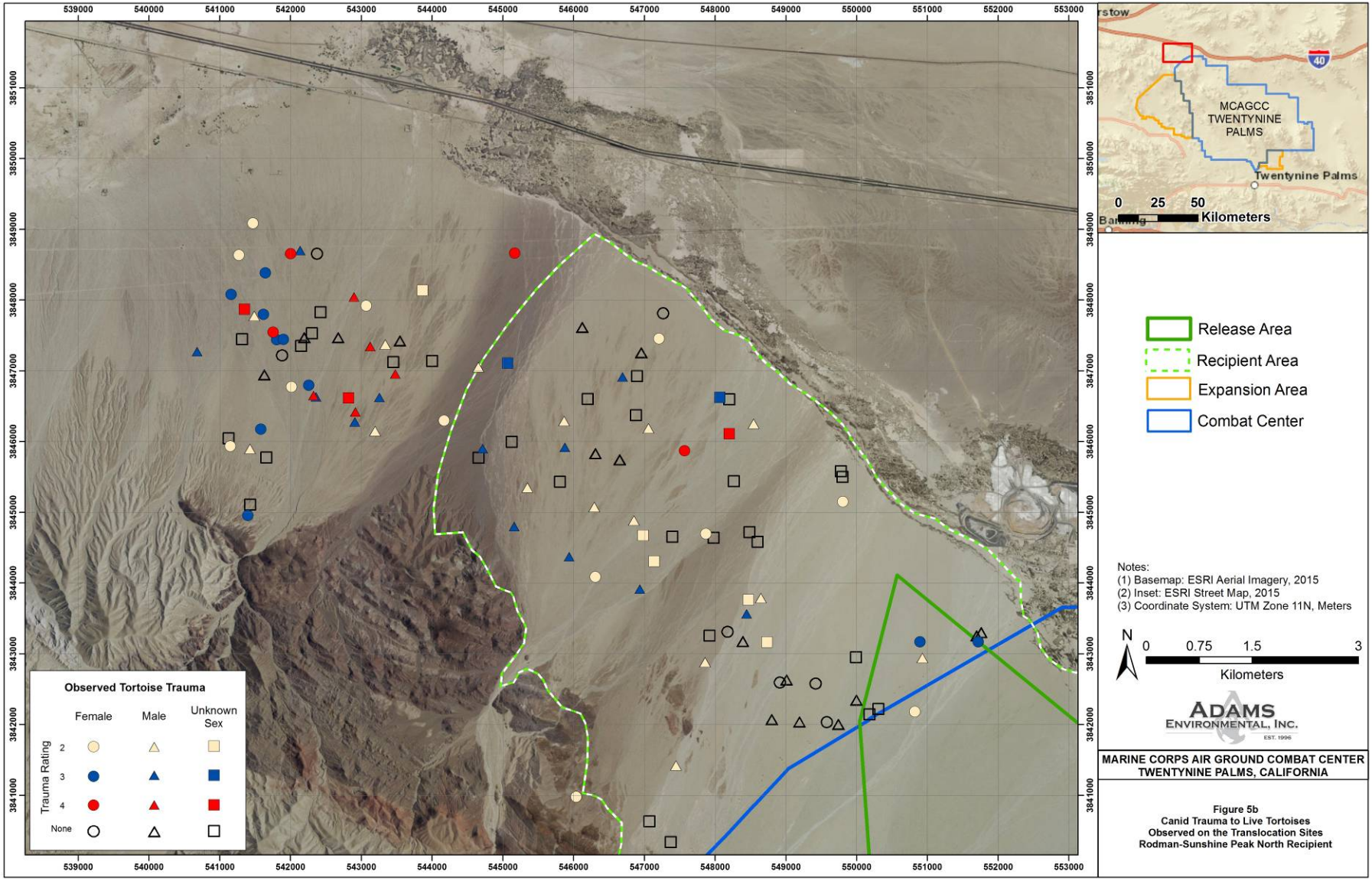
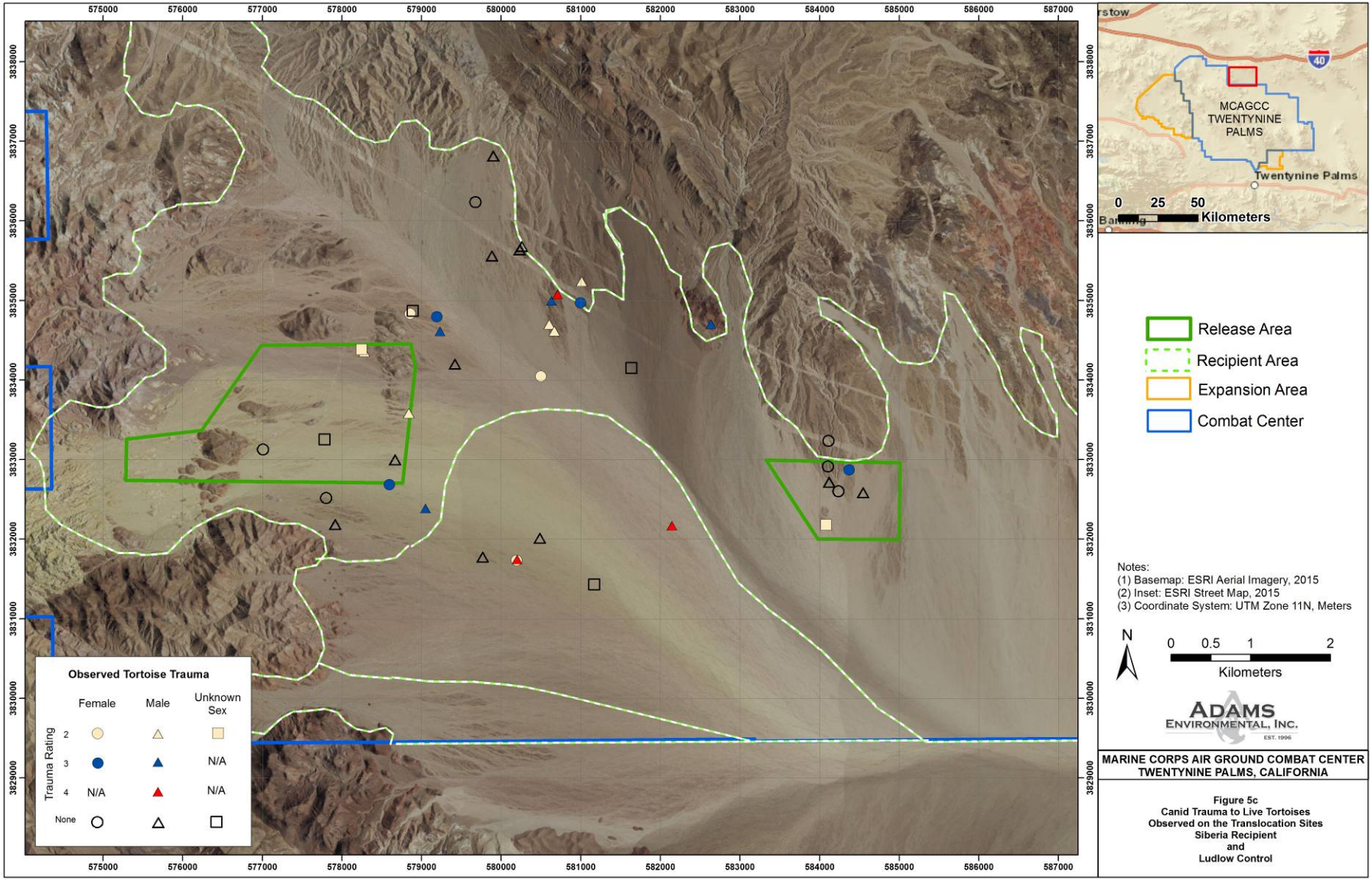
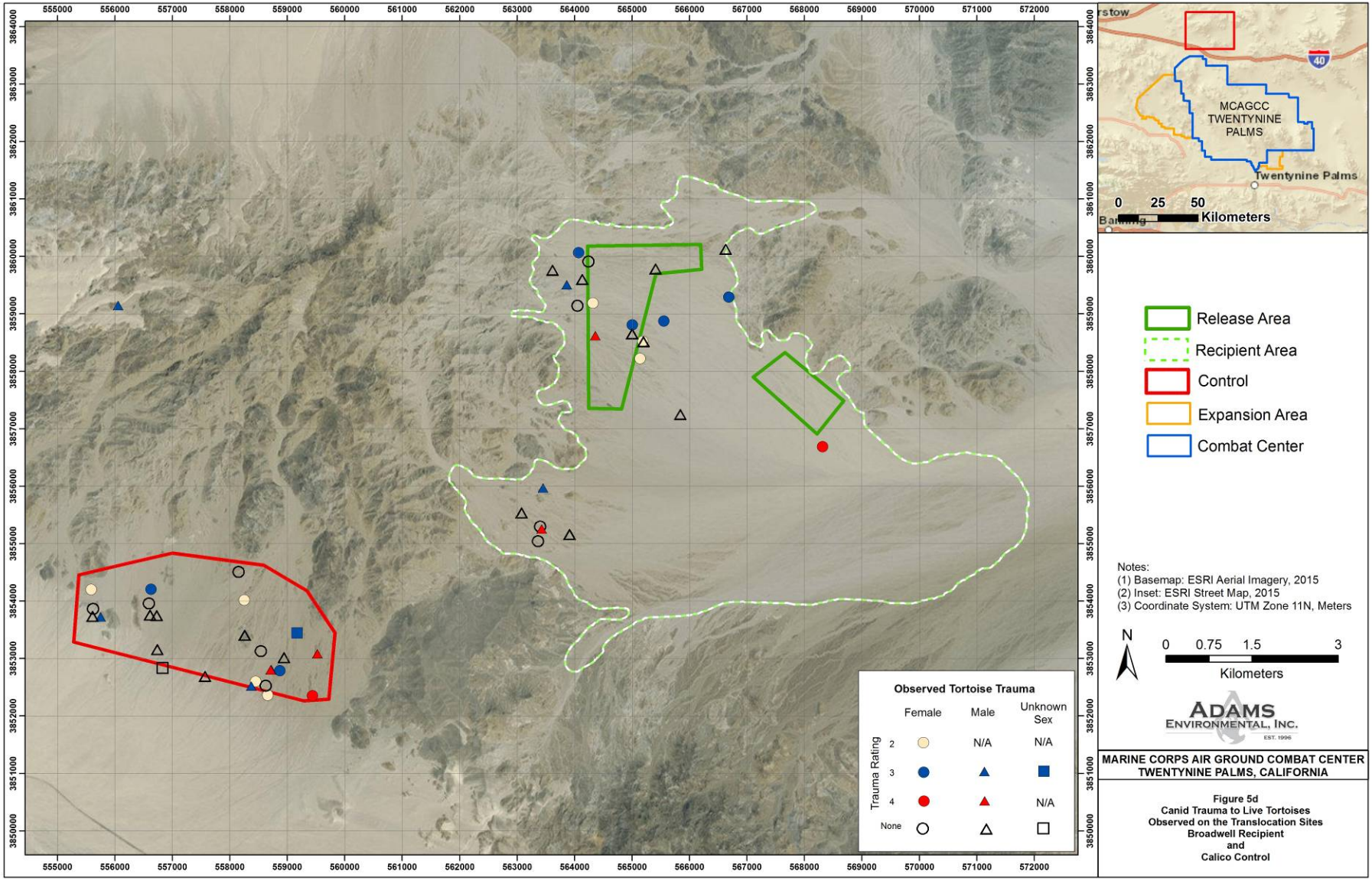


Figure 5b
Canid Trauma to Live Tortoises Observed on the Translocation Sites Rodman-Sunshine Peak North Recipient



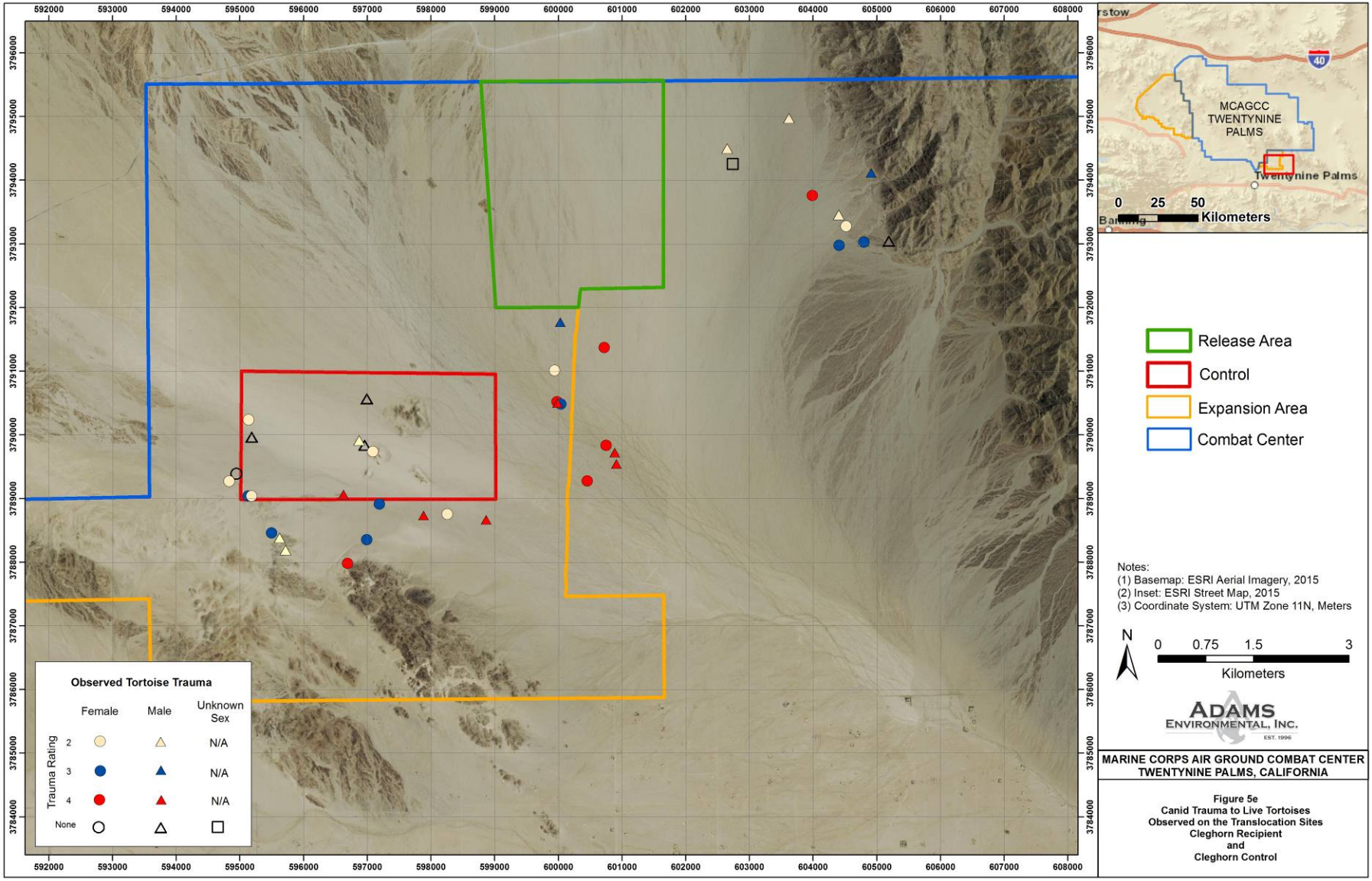
MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 5c
Canid Trauma to Live Tortoises
Observed on the Translocation Sites
Siberia Recipient
and
Ludlow Control



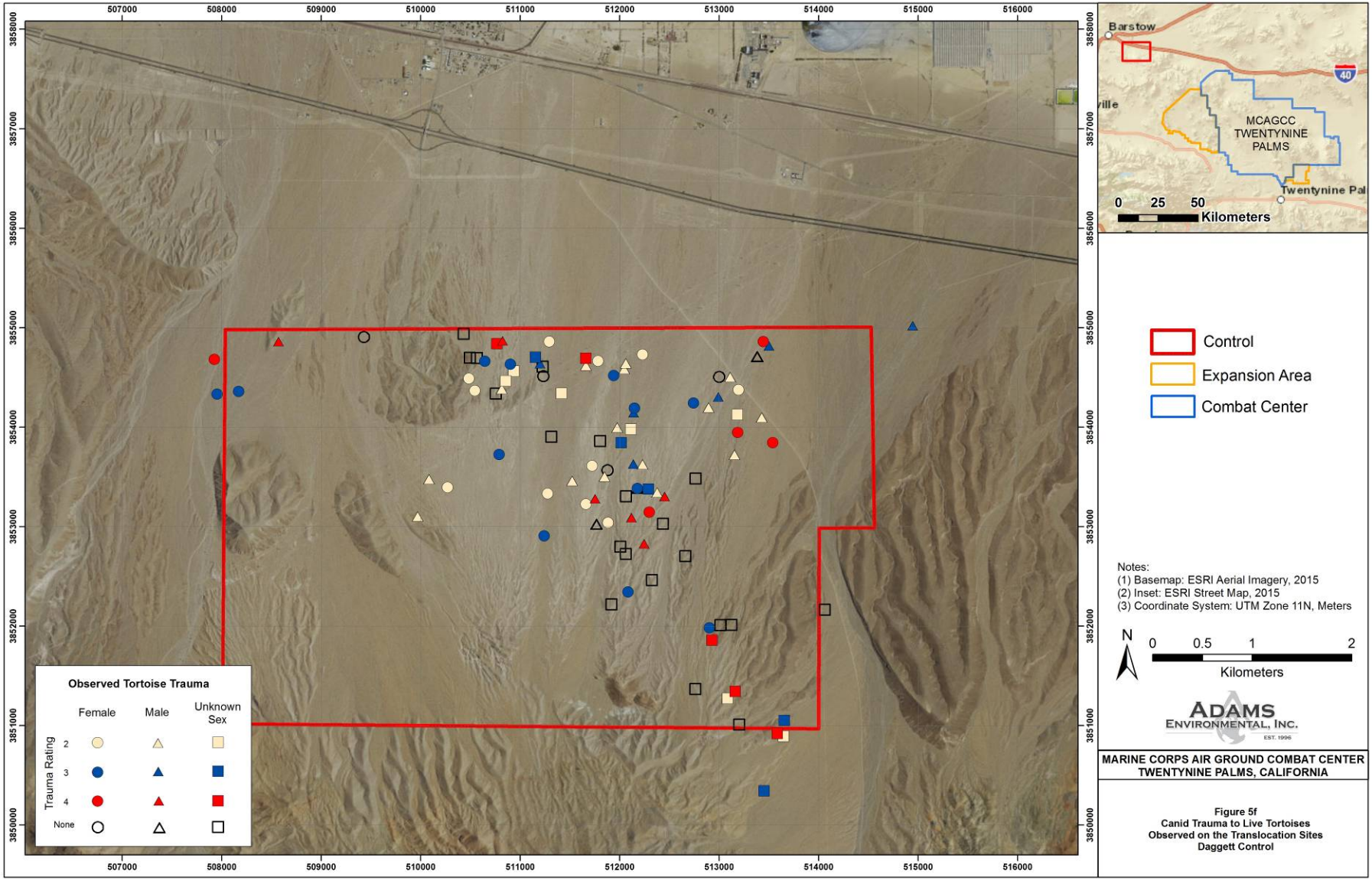
MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 5d
Canid Trauma to Live Tortoises
Observed on the Translocation Sites
Broadwell Recipient
and
Calico Control



MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 5e
Canid Trauma to Live Tortoises
Observed on the Translocation Sites
Cleghorn Recipient
and
Cleghorn Control



MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 5f
Canid Trauma to Live Tortoises
Observed on the Translocation Sites
Daggett Control

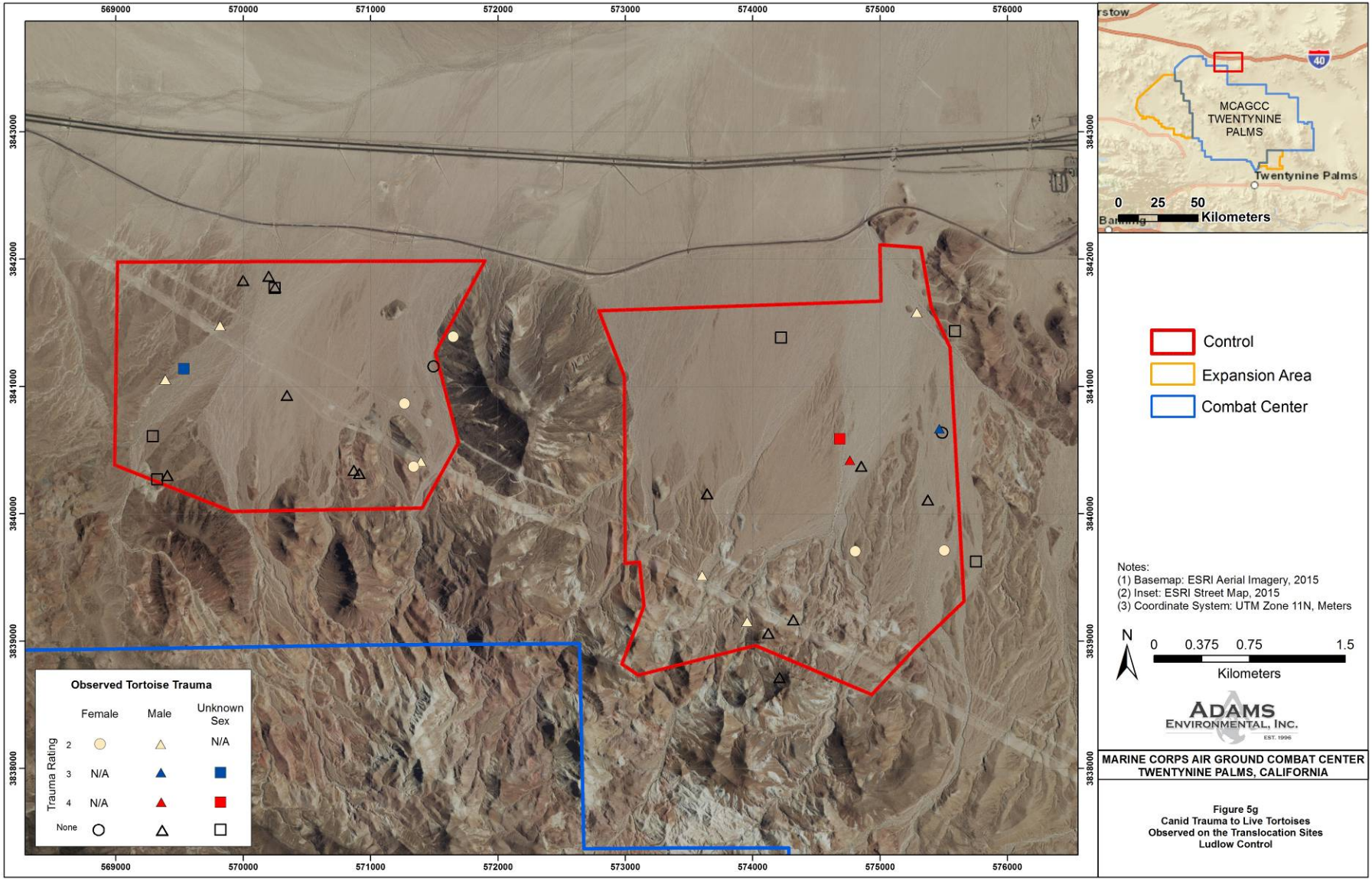


Figure 5g
Canid Trauma to Live Tortoises
Observed on the Translocation Sites
Ludlow Control

APPENDIX A-4
JUNE 2016 TRANSLOCATION PLAN

This page intentionally left blank.

DESERT TORTOISE TRANSLOCATION PLAN FOR THE MARINE CORPS AIR GROUND COMBAT CENTER LAND ACQUISITION

Natural Resources and Environmental Affairs Division,
Marine Corps Air Ground Combat Center
Twentynine Palms, California 92278

June 26, 2016

Prepared by:

Walter J. Christensen
Bldg 1418, Box 788110
Twentynine Palms CA 92278
walter.christensen@usmc.mil

Alice E. Karl, Ph.D.
P.O. Box 74006
Davis CA 95617
heliophile@mindspring.com

Brian T. Henen, Ph.D.
MAGTFTC MCAGCC
Bldg 1418, Box 788110
Twentynine Palms CA 92278
brian.henen@usmc.mil

TABLE OF CONTENTS

List of Tables

Attachment 1 - Figures

DESERT TORTOISE TRANSLOCATION PLAN FOR THE MARINE CORPS AIR GROUND COMBAT CENTER LAND ACQUISITION

1.0 INTRODUCTION

1.1 BACKGROUND

The Marine Corps Air Ground Combat Center ("Combat Center") at Twentynine Palms, California is a unique Marine Corps training installation that provides a realistic battlefield environment for live-fire maneuvers. A large-scale Marine Air Ground Task Force (MAGTF) training area would include areas on the existing Combat Center as well as additional lands west and south of the Combat Center, currently known as the Western Expansion Area (WEA) and the Southern Expansion Area (SEA)[1], respectively. Associated training would enable Marine Expeditionary Brigade (MEB)-level training exercises, involving large-scale, integrated, live-fire maneuvers. MEB training exercises and supporting activities are detailed in the *Biological Assessment for the Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training* (BA; Department of the Navy [Navy] 2011a).

The BA (Navy 2011a) identified that Agassiz's desert tortoise (*Gopherus agassizii*), a federally and state-listed threatened species, is likely to be adversely affected by the proposed land acquisition and airspace establishment action. The US Fish and Wildlife Service (USFWS) issued a biological opinion (BO) in response to the BA (USFWS 2012). Several conservation actions were recommended in the BA, and approved in the BO, among them a plan to translocate tortoises from high & medium impact areas in the WEA and SEA (Figure 1) prior to training exercises. High-intensity battle activity (i.e., that likely to result in high-intensity disturbance) would occur in the more level, gently sloping terrain of the project area. While steeper and rockier areas likely would be subject to less disturbance (typically medium- or low-intensity disturbance), certain vehicles and equipment would be used to fight from covered terrain, such as rocks and reverse slopes of hills that provide cover. Wheeled re-supply and other vehicles would regularly use the Main Supply Routes (MSRs) in the project area during training.

Soil and vegetation necessary for desert tortoise habitat would be expected to be severely degraded or lost in high intensity use areas; and degraded, if not lost, in medium-intensity use areas (Navy 2011a). The proposed action is anticipated to result in major degradation (i.e., complete or nearly complete loss of vegetation and disruption of substrates) of an estimated 4,273 ha (10,559 ac) of occupied desert tortoise habitat in the high-intensity disturbance zone of the study areas. MEB training and MEB Building Block training would also result in a lesser degree of degradation of an estimated 39,067 ha (96,537 ac)

---

[1]The expansion areas were originally called "Study Areas" and "Acquisition Areas". For purposes of this plan, all are now called "Expansion Areas".

of occupied desert tortoise habitat in the medium-intensity training disturbance zone of the project area.

MEB training for 50 years is not compatible with the continued existence of desert tortoises in the high and medium intensity areas. If not translocated, an estimated 1105 adult tortoises and potentially 2100 juveniles would be lost from these zones of the WEA and SEA due to the intensity of training exercises (Navy 2011a). Such a loss of tortoises and tortoise habitat is not compatible with recovery of this threatened species (Navy 2011a). These numbers represent 34% and 23%, respectively, of the adult and juvenile tortoises currently living in the local population. Desert tortoises have experienced long-term and severe declines throughout their geographic range in the past two decades (Karl 2004 and 2010, McLuckie et al. 2006, Boarman et al. 2008, USFWS 2015b). Further losses of over 1000 breeding age tortoises and 2000 smaller tortoises would further compromise species recovery.

In addition, the intensive degradation of over 43,000 ha (100,000 ac) would eliminate that habitat and/or leave it in sufficiently poor quality to render it largely unusable to tortoises. Any surviving tortoises from those areas would need to re-locate to areas with intact habitat that could support them. Since the areas slated for maneuvers in the WEA are in multiple places, tortoises dispersing from the MEB disturbance zones could move into equally dangerous areas. Actively translocating these tortoises to designated locations with suitable habitat that is safe from further anthropogenic degradation, would optimize dispersal.

Translocation is necessary to support the continued existence of this population by maintaining tortoise abundance and genetic integrity. Long-term monitoring of the translocation efforts for this large cohort of tortoises will provide valuable information on translocation efficacy as a tool for species recovery. Studies that can be completed ancillary to translocation will provide important information for recovery methods. Such monitoring and studies are consistent with strategies outlined in the revised desert tortoise Recovery Plan (USFWS 2011a). In particular, the translocation of tortoises to areas with depressed or depleted populations is consistent with Recovery Plan Strategic Element 3. Monitoring survival, disease, habitat, and threats in the studies are consistent with Strategic Element 4. Performing research on translocation effectiveness, constrained dispersal, stocking densities, habitat, and disease are consistent with Strategic Element 5.

1.2 PRE-TRANSLOCATION INVESTIGATIONS AND ACTIVITIES

The BO required that three years of baseline data be collected prior to translocation. Translocation is planned for early Spring 2016, prior to the initial MEB exercises in Summer 2016. This schedule prompted a substantial amount of pre- translocation activities:

- An initial General Translocation Plan (GTP) was developed in December 2011 (Karl and Henen 2011) to provide a basic framework for translocation and further investigations prior to translocation in 2016.

- Recipient and control sites were suggested in the GTP based on a desktop analysis of several factors (e.g., proximity to WEA and SEA, elevation, land uses, long-term protection). Since 2011, these sites have been modified, deleted, and added based on a combined approach of surveys, agency consultation (USFWS, Bureau of Land Management [BLM], and the California Department of Fish and Wildlife [CDFW]), investigations of current and future land uses, and examination of data from other projects originally targeted for those sites.

- Beginning in 2012 and ongoing, field surveys have been performed to examine translocation-associated factors in both the impact areas and the recipient and control sites. These factors include:

  <u>Tortoise Density</u>
  - ◊ Mark-recapture – Established 6 new, 1 km^2, mark-recapture plots in the WEA (3) and nearby translocation area (3) in 2013; established an addtional 8 plots in translocation areas in 2015.
  - ◊ Tortoise Regional Estimate of Density (TRED) transects (Karl 2002) in the WEA and SEA (2012) and translocation areas (2013-2015).

  <u>Habitat Analyses</u>
  - ◊ Qualitative and quantitative transects in the WEA, SEA, and translocation areas, 2012-2015.

  <u>Baseline Disease Status and Behavior</u>
  - ◊ Health assessments, with tissue sampling, on 359 tortoises in two translocation areas and the impact areas, Fall 2013 and Spring 2014.
  - ◊ Attached transmitters to 114 tortoises in two translocation areas and the impact areas, Fall 2013 and Spring 2014; tortoises tracked monthly after initial two weeks of heightened tracking.

  <u>Predation</u>
  - ◊ Focused raven abundance and nest surveys in the translocation area, Spring 2014 (pilot study) and Spring 2015, continuing.
  - ◊ Canid-related trauma - analysis from health assessments on recipient and control sites, 2015 surveys.

  <u>Genetics Analysis</u>
  - ◊ Assessment of genetic differentiation among the impact and translocation areas, using a subset of 135 samples from the impact areas and disparate recipient and control sites.

- We completed tortoise clearance surveys on over 205 km^2 comprising the WEA and SEA high and medium impact areas, from September 2014 through October 2015. In brief, clearance surveys coincided with heightened tortoise activity in spring and fall to maximize the probability of finding all tortoises. Two complete passes were walked, with transects spaced at five-meter intervals; the second pass was walked perpendicular to the first to maximize observing all surfaces. Teams were limited to five people for maximum search

efficiency, with the central navigator following designated coordinate lines ("UTMs") to ensure complete coverage of the survey area. Recent tortoise sign was mapped and qualified relative to size and age to assist in finding every tortoise associated with fresh sign; additional, concentrated surveys occurred where no tortoise was initially found near any fresh sign. Similarly, when new hatchlings were found, a concentrated search was employed to find other hatchlings from the clutch.

All tortoises of adequate size were transmittered; juvenile tortoises too small to wear transmitters were moved to new holding pens at Natural Resources and Environmental Affairs Division's (NREA's) Tortoise Research and Captive Rearing Site (TRACRS). *In situ* monitoring of all tortoises with transmitters was accomplished by monthly tracking, following an initial two-week period of intensive tracking after transmitter attachment. We conducted health assessments on all tortoises per USFWS current guidelines (USFWS 2015a; see Section 6.3, below, for details of these techniques.)

To help understand mortality rates, we recorded each tortoise shell remain that was sufficiently complete to represent a single tortoise. Each shell was sexed, sized, and aged relative to time since death, and the cause of death was recorded, if determined.

- Holding pens with 186 individual units were built in 2015. These were constructed at the TRACRS headstarting facility to resemble the existing pens.

- Tortoises were sought on the recipient and control sites in Fall 2015 to transmitter resident and control tortoises. We used standardized, 10 meter-wide transects throughout most of each site to sample representative habitats that would be occupied by translocatees and residents, adding focused searches in better habitats. Shell remains were recorded as for clearance surveys. We performed health assessments on all transmittered tortoises, plus additional tortoises encountered to augment our knowledge of each site's disease status.

This final plan incorporates these additional data and analyses, as well as collaboration with the resource agencies.

2.0 IMPACT AREA BASELINE DATA

2.1 NUMBER OF TORTOISES TO BE TRANSLOCATED

We found 1,410 tortoises during clearance surveys of government lands in the WEA and SEA, of which 1,175 adult and juvenile tortoises were transmittered and an additional 235 smaller tortoises were transferred to TRACRS holding pens (Table 1). Private lands within the WEA that are still in negotiation should provide approximately 18 additional

tortoises. Subtracting lost tortoises due to inactive transmitters and mortality, the Combat Center anticipates translocating 1,138 transmittered tortoises next spring, plus juveniles from the holding pens that have grown large enough to avoid raven predation.

The BO (USFWS 2012) requires the Combat Center to perform subsequent clearance surveys on any square kilometer where at least three tortoises were found on the previous survey. Estimates of survey efficacy (Karl 2002) combined with findings from previous surveys suggest that another 104 adult and juvenile tortoises will be found in these subsequent surveys. After five years, we estimate that the cumulative total of tortoises to be translocated will approximately equal 1,495 tortoises, including 998 tortoises ≥160 mm in carapace length (MCL) and 497 smaller tortoises (Table 1).

Table 1. Cumulative number of tortoises expected to be translocated from the impact areas, including those already found (Found) and those anticipated from future clearances (Additional). MCL=Midline Carapace Length.

Tortoises	**≥160 mm MCL**			**<160 mm MCL**	
	Male	**Female**	**Unknown Sex**	**Transmittered**	**Holding Pens**
Found:					
WEA	457	334	43	218	235
SEA	41	40	1	4	0
Subtotal	*498*	*374*	*44*	*222*	*235*
Total for Size Group	916			457	
Additional:					
13 km^2 of Private Lands	12			6	
Subsequent Annual Clearances[1]	70			34	
Total	998			497	

1 The number of tortoises estimated for subsequent annual surveys is based on finding 74% of the tortoises present on each pass (Karl 2002), or 93% cumulatively after two passes.

The actual number of tortoises ultimately found may exceed estimates, which are based on density inside the impact area. Our surveys capture not only tortoises that may live primarily inside the impact area, but those outside whose home ranges overlap the impact area. Based on a 720 m home range diameter (TRW 1999), any male tortoise within 720 m of the impact area could be captured. The large edge-to-interior ratio of the battalion routes, especially, but also the boundary of the main objectives, increases the possibility that additional tortoises will be captured.

3.0 RECIPIENT AND CONTROL SITES

3.1 SITE CHOICE AND CRITERIA

Recipient and control sites were identified and refined relative to size and location following the three-year program of surveys, literature review, and discussions with the resource agencies and stakeholders. The final number of tortoises found during the clearance surveys further dictated the number and sizes of the sites.

Recipient areas must meet several important criteria to ensure that translocation will successfully support tortoise recovery:

- Sites should be part of a connected system of occupied desert tortoise habitat.
- Tortoise populations on and/or near the recipient areas are depleted or depressed, so that translocation augments a site and does not conflict with carrying capacity constraints.
- The lands must comprise sufficiently good habitat that they are either currently occupied or could be occupied by the desert tortoise. Habitat on the recipient areas must be suitable for all life stages.
- Sites that are protected or receive adequate protection.
- Lands should not be subject to elevated threats (e.g., predation, disease, exotic invasive plant species) or intensive historic, current or future land uses (e.g., recreational use, development, habitat degradation) that could compromise habitat recovery or render it too lengthy to be useful during the initial translocation years. These considerations also must extend to surrounding lands onto which tortoises might disperse.

These criteria are consistent with the goals, objectives, and recovery strategies of the Recovery Plan USFWS (2011a) and USFWS translocation guidance (USFWS 2011b). The latter further requires that:

- Disease prevalence within the resident desert tortoise population is less than 20 percent.
- Recipient sites should be within 40 km of the impact area, with no natural barriers to movement between them, to ensure that the desert tortoises at the two sites were likely part of a larger mixing population and similar genetically.
- Release sites must be at least 10 km from major unfenced roads or highways.
- Recipient areas include a dispersal radius of 6.5 km from release points.

In addition, the recipient sites are generally consistent with draft translocation guidance under review by USFWS. These guidance criteria include the following additional measures:

- Release sites support habitat suitable for all desert tortoise life stages.
- There is no evidence of an active outbreak of disease, such as high prevalence of clinical signs of disease or seropositive responses[2] to disease agents.
- Major, unfenced roads or highways are no closer than 6.5 km to the release site.
- The site has no detrimental rights-of-way or other encumbrances.
- The site will be managed compatibly with continued desert tortoise occupancy.

USFWS (2011b) recommends that post-translocation densities of adult tortoises not exceed one standard deviation (SD) of the most current density in the recovery unit. For the Combat Center, the mean Western Mojave Recovery Unit density is 2.8 adult tortoises/km^2 (USFWS 2015b), which translates to a post-translocation maximum of 3.7[3], an increase of 0.9 tortoises/km^2. Thus, translocating 998 adults (Table 1) would require 1108 km^2.

Beyond the basic criteria for recipient sites that will optimize translocation, there are additional considerations pertaining to monitoring and research that are critical components for evaluating the success of the translocation program:

- Replicates, both among sites and individuals, are crucial for statistically examining translocation effects.
- Control sites must be similar to recipient sites (habitat type/quality, post-translocation population density, and disease status), but not influenced by translocation to recipient sites. USFWS (2011b) recommends a separation distance of approximately 10 km (6.25 mi).
- Control sites must not have foreseeable development or other impacts precluding tortoise occupancy.
- Experimental sites must be sufficiently separated to avoid co-interference.
- The intensive tracking schedule required by USFWS (2011b, 2012) requires that individuals be found virtually weekly throughout the year, largely because translocatees travel erratically and unpredictably and can be lost easily. The tracking requirements for Year 1 are:

  Within 24 h of release
  Twice weekly for first two weeks
  Weekly from March through early November
  Twice monthly from November through February

---

[2] The Combat Center considers seropositive response to be an indication of past exposure, and does not necessarily indicate an active outbreak.
[3] Note, however, this population density is less than the minimally viable population density of 3.86 adult tortoises/km^2 (USFWS 2016a). Draft translocation guidance under review by USFWS identifies a new target of 4.3 tortoises/km^2 in the Ord-Rodman CHU.

Years 2-5 are only slightly less intense. Accordingly, access to transmittered individuals must be continuous. Because range access on the Combat Center is highly restricted due to training exercises, transmittered animals cannot be released on the Combat Center without considering alternative tracking schedules and other monitoring efforts. For the Sunshine Peak portion of the Rodman-Sunshine Peak dispersal area, the Combat Center will implement a combination of occasional radiotracking combined with multiple line transects to span most of the Sunshine Peak Training Area (Section 4.1.1).

3.2 RECIPIENT AND CONTROL SITE SELECTION

Five recipient areas and six control sites were designated (Figure 2). Recipient areas include both a release area and a dispersal area. Each recipient area is paired with a control site(s) to match genetics, habitat and local weather patterns.

Generally speaking, recipient areas meet the criteria listed in Section 3.1, above. None is more than 40 km from the impact areas (Table 2), although they are up to 53 km from the furthest edge of the relevant impact area. These distances are much less than the conservative 200 km recommended physical limit before incurring risk of outbreeding depression (Averill-Murray & Hagerty 2014).

Tortoise populations have declined severely throughout their geographic range (Karl 2004 and 2010, McLuckie et al. 2006, Boarman et al. 2008, USFWS 2011a, 2015b). By contrast, no regional increase in tortoise density near the Combat Center has been documented. In the Combat Center area, specific tortoise declines have been documented on several sites:

- <u>The Emerson Lake, Sand Hill and Bullion training ranges adjacent to the impact areas</u> - Numbers of live tortoises at the Emerson Lake Plot declined from consistent levels of 15 to 20 tortoises/km^2 on three surveys between 1997 and 2003 to 3.0 tortoises/km^2 in 2009 (Kiva 2009). The Sand Hill permanent study plot (Plot #2) plot declined from 37.8 to 10.4 tortoises/km^2 between 1991 and 2008 (Kiva 2008) and to 3 tortoises/km^2 in 2013 (A.P. Woodman, unpubl. data). The Bullion plot had 31 and 42 tortoises/km^2 in 2001 and 2003, respectively (Kiva 2007, unpub. data) and 15 tortoises/km^2 in 2015 (clearance data).
- The BLM's Johnson Valley long-term study plot declined from 69 tortoises/km^2 in 1980 to 6 tortoises/km^2 in 1992 (Berry 1996 in BLM 2005).
- USFWS' line distance sampling program has recorded continuous declines in the Ord-Rodman sampling stratum, from 8.2 to 3.6 tortoises/km^2 between 2007 and 2015 (USFWS 2009b, 2015b).

This translocation effort prioritizes recipient sites that result in augmentation of depleted populations. Draft translocation guidance defines depleted populations as areas where tortoise densities are estimated to decline to a minimally-viable level of 3.86 adult tortoises/km^2 within three years based on trends estimated by USFWS (2016a).

Recipient sites for the Combat Center translocation are generally depleted or on the cusp of depletion (Table 6).

The Combat Center considered habitat quality (Section 3.3) and the latest Translocation Guidance (USFWS 2016a) when determining post-translocation density for each recipient site (Table 6). We paired the treatment of Lucerne-Ord to Rodman-Sunshine Peak North and Broadwell to Siberia as these pairs had similar quality of habitat. This simplifies the number of categories of post-translocation density, and should improve analytical power in data analyses. Draft USFWS translocation guidance (USFWS 2016a) defines a depleted population as those expected to have densities < 3.86 adult tortoises per km^2 in the next three years (by populations trends; USFWS 2016a). This criterion was used in our treatment calculations, with treatments being 40% or 105% increases above the criterion. The greater increases correspond to the sites with better quality habitat. The Cleghorn Lakes site is experimental, with a temporary fence to encourage translocatees to settle during a two-year period before the fence is removed (Karl 2007). The post-translocation density for Cleghorn Lakes will match the current density at the Bullion site, which is nearby (ca. 6 km) and will serve as a control for the Cleghorn Lakes experiment.

Tortoise densities (Table 6) and habitat quality (Section 3.3) vary considerably among sites, with higher tortoise densities corresponding to higher habitat quality. A recent habitat model (Barrows et al 2016) shares this general pattern for the control and recipient sites within the model boundaries. The model corresponds better with higher quality habitat, though less suitable habitat per the model can support low tortoise densities yet fall below the model's lower threshold for suitability. The modelled 3°C increase in ambient temperature correlates to decreased precipitation or increased aridity (Barrows et al. 2016) and indicated 55% less area of suitable habitat given warming, but 40% of the area being refugia (suitable currently and in the future). Drought during the past five years probably contributed to elevated mortality in the Rodman-Sunshine Peak area (Section 3.3.1) and likely other sites (e.g., Siberia) since the drought was not localized or limited to one year.

The habitat projections modelled can be interpreted for recipient sites and control sites captured within the boundaries of the model (Broadwell and Daggett were not captured). No sites increased in total area of suitable habitat given the climate change (warming or aridity). The sites containing mostly refugia or new habitat given climate change included two large recipient sites (Lucerne-Ord, Rodman-Sunshine Peak-N) and two large control sites (Bullion and Rodman-Sunshine Peak South). Siberia is anticipated to have much less area that is suitable and about 5% refugia, although adjacent lands will have refugia or new habitat. The Cleghorn projection showed a similar pattern, although the model did not capture well the suitability of Cleghorn; despite records and calibration points in Cleghorn, it fell below the model's threshold for suitability before and after warming. This site is and will be near suitable habitat in MCAGCC's Cleghorn Pass Training Area. Three control sites (Calico, Ludlow and Cleghorn) will lose considerable suitable habitat but may have some refugia or new habitat nearby.

Table 2. Relationship of impact, recipient (R) and control (C) sites. Each recipient area is paired with one or more control sites. The natural and artificial features that separate the recipient and control sites from the impact areas and separate the paired sites are listed. Mountains that are impermeable to tortoises are considered to be barriers. Permeable but difficult terrain is considered a deterrent.

Site	Size (km^2)[1]	Separation from Impact Area		Paired Site			Number of Mark-Recapture Plots
		Distance from Impact (km)[2]	Other Separation Factors	Paired Site	Distance from Paired Site (km)[3]	Other Separation Factors	
Recipient				**Control**			
Rodman Sunshine Peak N	103.4	6.9	low mountains (a deterrent, not a barrier)	Rodman Sunshine Peak S	6.5	low mountains (a deterrent, not a barrier)	3
				Daggett	38	Newberry Mountains (barrier), residential development, poor (playa) habitat	
Lucerne-Ord	162.5	12.5	Fry Mountains (barrier)	Rodman Sunshine Peak S		Fry Mountains (low; a deterrent, not barrier)	1
				Daggett	23	Ord Mountains (barrier)	
Broadwell	52.4	28.5	broad lava flow (barrier), freeway, poor habitat	Calico	3.3	Cady Mountains (low; a deterrent, not a barrier)	
Siberia	63.8	27.8	Combat Center, several mountain ranges	Ludlow	5.8	low mountains (a deterrent, not a barrier)	1
Cleghorn Recipient	8.1	1	tortoise exclusion fence	Cleghorn Control	3.0	tortoise exclusion fence	1
				Bullion (C)	5.6	tortoise exclusion fence; Bullion Mts	1

Control				Recipient			
Rodman Sunshine Peak S	54	0.5	tortoise exclusion fence	Rodman Sunshine Peak N, Lucerne-Ord	---	---	1
Daggett	22	31.6	Rodman and Newberry Mountains (barrier)	Rodman Sunshine Peak N, Lucerne-Ord	---	---	1
Calico	16.7	23.3	broad lava flow (barrier), freeway, poor habitat	Broadwell	---	---	
Ludlow	11	27.9	Combat Center, several mountain ranges	Siberia	---	---	1
Cleghorn (C)	9.5	1.7	No barrier, although localized topographic features (incised washes, low hills) on control site probably encourage tortoises to remain locally	Cleghorn (R)	---	---	1
Bullion (C)	12	15.7	Bullion Mts; tortoise exclusion fence	Cleghorn (R)	---	---	1

1. For Recipient sites, this is the size of the release and dispersal area (=recipient area). For control sites, it is the approximate study area size.

2. Distance is from nearest edge of the impact area.

3. Distance is from edge of the release area

3.3 DESCRIPTIONS OF THE RECIPIENT AND CONTROL SITES

Specific characteristics of each recipient site, and issues related to translocation, are discussed below. Control sites have been included to demonstrate that they have essentially the same conditions as the paired recipient sites, and have adequate conditions to support a long-term study (e.g., conservation areas). Land uses and long-term protection[4] are detailed in Table 3 and Figures 2 and 3. We evaluated specific mortality factors at each site (Table 4, Figures 4 and 5) that included disease and predation. Because many of these data were collected this fall, the analysis has not been completed; accordingly, the results we present here are preliminary. Using data on the shells found during tortoise searches, we assessed mortality rates for the last four years for adult tortoises (≥180 mm in carapace length [MCL]). Enzyme-Linked ImmunoSorbent Assay (ELISA) results provided disease status for *Mycoplasma agassizii* and *M. testudineum*. We evaluated trauma from canids (coyotes and dogs) based on trauma data gathered during health assessments. Raven risk was derived from raven point counts and nest surveys begun in Spring 2015. None of the sites is perfect for translocation due to the many constraints, but they are the best feasible sites.

---

[4] BLM manages Areas of Critical Environmental Concern (ACEC's), National Landscape Conservation System (NCLS) lands, Wilderness Areas and Wilderness Study Areas (WSAs)

- ACECs were established to "protect and prevent irreparable damage to important historic, cultural and scenic values; fish, wildlife resources or other natural systems or processes; or to protect human life and safety from natural hazards. ...the management of ACECs is focused on the resource or natural hazard of concern … and in some cases may involve surface disturbing actions" (BLM no date).
- Desert Wildlife Management Areas (DWMAs) were identified in the original and revised recovery plans (USFWS 1994a and 2011a); they are managed as ACECs by BLM. DWMAs act as reserves in which recovery actions are implemented.
- NCLS lands comprise a collective system of conservation lands that are managed "to ensure their conservation, protection, and, if needed, restoration for the long-term benefit of surrounding communities" (BLM 2015).
- Wilderness Areas are to be managed "to retain their primeval character and influence, without permanent improvements or human habitation… (and are to be)…protected and managed so as to preserve…natural conditions" (BLM 1995). Wilderness Study Areas are managed to preserve wilderness characteristics until Congress makes a final determination on the management of WSAs.

USFWS is responsible for Critical Habitat (CH) and for the development of Tortoise Conservation Areas (TCAs)

- CH, designated for *G. agassizii* in 1994 by USFWS (1994b), provides legal protection for key areas for recovery where conservation actions can be focused.
- TCAs are focus areas within existing desert tortoise conservation areas where aggressive management is recommended to ensure that populations remain distributed throughout the species range (USFWS 2011).

The Combat Center has established Special Use Areas (SUAs) in the training areas that are off limits to military training and vehicle travel off of Main Supply Routes (MSRs), with limited exceptions for Conservation Law Enforcement Officers (CLEOs), authorized NREA staff, and water and maintenance crews.

Table 3. Characteristics of recipient and control areas that are related to site choice. Recipient areas include release plus dispersal areas; control sites are the approximate areas within which tortoises were sought or studied. Conservation areas include existing areas and new areas proposed by the DRECP, Feinstein Bill, and Cook Bill. The Cook Bill resembles the Feinstein Bill in most areas relevant to the Combat Center translocation and is incorporated by reference except where it diverges. See text for explanation of conservation areas.

Site	Associated Conservation Areas[1]	Land Uses
Recipient Areas		
Lucerne-Ord	Substantially overlaps: Ord-Rodman ACEC Ord-Rodman Critical Habitat Unit Proposed National Landscape Conservation System (DRECP) Ord-Rodman Tortoise Conservation Area	Large transmission line corridor Limited Use OHV designation but possible proliferation anticipated Overlaps Ord Mountain grazing allotment Mixture of federal and private lands Scattered occupied residents >6.6 km south of the release area
Rodman Sunshine Peak North	Substantially overlaps: Ord-Rodman ACEC Ord-Rodman Critical Habitat Unit Proposed National Landscape Conservation System (DRECP) Sunshine Peak Training Area Ord-Rodman Tortoise Conservation Area Bordered by Rodman Mountains Wilderness	Large transmission line corridor No projected future use of area[3] Overlaps Ord Mountain grazing allotment ~3 km^2 All lands federally owned
Siberia	In: Proposed Mojave Trails National Monument (Feinstein Bill) Proposed ACEC (DRECP) Overlaps: Proposed National Landscape Conservation System (DRECP) Borders the Combat Center	Negligible recreation use, although gas pipelines provide ingress routes No projected use of area[3] but large block of private lands in west - former proposed solar energy project Mixture of federal, state and private lands
Broadwell	Substantially overlaps: Cady Mountains Wilderness Study Area Proposed National Landscape Conservation System (DRECP) Proposed ACEC (DRECP) Proposed Mojave Trails National Monument (Feinstein Bill) Near Kelso Dunes Wilderness	Retired grazing allotment Negligible recreation use No projected future use of area[2] Large transmission line corridor Nearly all lands federally owned
Cleghorn Recipient	Entirely on the Combat Center- Cleghorn Lakes RTA SUA Adjacent to Cleghorn Wilderness	Scattered occupied houses with dogs, 6.7 km south

Control Areas		
Rodman Sunshine Peak South	On the Combat Center SUA Substantially overlaps: Ord-Rodman ACEC Ord-Rodman Critical Habitat Unit Proposed National Landscape Conservation System (DRECP) Sunshine Peak Training Area Ord-Rodman Tortoise Conservation Area Bordered by Rodman Mountains Wilderness	Large transmission line corridor Residual Open OHV Area to north (will be fenced with tortoise exclusion fencing) Proposed expanded Open OHV Area to west (Cook Bill) Overlaps Ord Mountain grazing allotment All lands federally owned
Daggett	In: Ord-Rodman ACEC Ord-Rodman Critical Habitat Unit Proposed National Landscape Conservation System (DRECP) Abuts Rodman Mountains Wilderness	Large transmission line corridor Mixture of federal and private land No projected future use of area[3] ≥1.3 kms south of I-40 and Daggett
Ludlow	In: Proposed Mojave Trails National Monument (Feinstein Bill) Proposed ACEC (DRECP) Overlaps: Proposed National Landscape Conservation System (DRECP) Near the Combat Center	Negligible recreation use, although gas pipelines provide ingress routes Mixture of federal and state lands
Calico	Substantially overlaps: Proposed National Landscape Conservation System (DRECP) Proposed ACEC (DRECP) Abuts Proposed Mojave Trails National Monument (Feinstein Bill) Cady Mountains Wilderness Study Area	Retired grazing allotment Negligible recreation use No projected future use of area[2] Large transmission line corridor Mostly federal land ownership
Cleghorn Control	Entirely on the Combat Center- Cleghorn Lakes Training Area SUA Adjacent to Cleghorn Wilderness	Scattered occupied houses with dogs, 5.5 km southeast
Bullion (C)	Entirely in Cleghorn Wilderness Borders the Combat Center	

1. Sources: *West Mojave Plan (BLM 2005), DRECP* (CEC et al 2014), *Feinstein Bill* (Feinstein 2015), *Cook Bill* (Cook 2015)
2. C. Otahol (2015a)
3. C. Otahol (2015b)

Table 4. Mortality factors at the translocation and impact areas. Incidence of disease (positive (P) or suspect (S)), canid trauma and mortality rates include substantial data collected in Fall 2015 that are not yet fully analyzed. Disease data are from Fall 2014 and 2015 unless noted. Canid trauma ranks follow trauma scoring in Berry and Christopher (2001): mild (2); moderate (3); and severe (4). Cumulative ranks are a combined ranking of canid-related trauma for gulars, flares, and limbs. Raven survey information is incomplete because surveys were expanded after the nesting season in 2015 to accommodate several new sites. "Offending raven" nests have juvenile tortoise remains beneath (USFWS 2008). N.A.=Not Available

Site	Incidence of Disease[1]						Canid Trauma					Ravens
	M agassizii		*M. testudineum*		Total Analyzed	% of Total That Are Seropositive	Rankings			Total analyzed	% of Total with Rank 3 or 4	Nests/ "Offending Raven" Nests
	P	S	P	S			2	3	4			
Impact												
WEA	18	77	8	21	1056	2.5	NA					NA
SEA	0	4	0	0	89	0	NA					NA
Recipient (R)												
Rodman Sunshine Peak N	0	2	0	0	24	0	32	24	12	121	29.8	11/ 2
(2014)[2]	0	1	0	1	16	0	4	1	1	17	11.8	
Lucerne-Ord	3	1	6	16	100	8.0	19	23	16	102	38.2	8/1
	NA											
Broadwell	3	2	0	3	25	12.0	6	6	1	27	25.9	NA
Siberia	0	3	0	1	40	0.0	10	8	3	41	26.8	NA
Cleghorn (R)	0	0	0	0	21	0	6	5	8	19	30.8	NA
(2013)	1	0	0	3	22 [3]	4.5	NA					
Control (C)												
Rodman Sunshine Peak S	1	9	0	0	22	4.5	NA					1 / 0
Daggett	7	5	3	0	53	18.9	33	24	16	100	40.0	9 / 0
	NA						11	3	2	37	13.5	NA
Calico	2	1	0	1	26	7.7	8	5	1	27	22.2	NA
Ludlow	9	0	0	2	37	0.0	11	3	2	37	13.5	NA
Cleghorn (C)	1	2	0	0	17	2.6 (Cleghorn R+ C)	8	3	5	18	40.0	NA
Bullion (C)	0	0	0	0	23	0	8	4	2	23	26.1	NA

1.Results as of 1 Nov 15. Total is number of samples analyzed to date. Percent of total is for tortoises that are seropositive for one or both species of *Mycoplasma*.
2. Source: P. Woodman, unpub. data
3. Source: Kiva (2013)

3.3.1 RECIPIENT AREAS

Lucerne Ord

This site is a broad area of mixed fair to good quality habitats with a pre-translocation density of 5.2 tortoises/km^2 (Table 6). It lies in a large bowl with natural topographic barriers (Ord Mountains) to the west and north. There are no highways or heavily used roads. While it receives substantial protection from future development via its overlap with multiple conservation areas (Table 3, Figure 3a), the edges of the dispersal area abut the Johnson Valley Open Off Highway Vehicle (OHV) Area. Although the recipient area is BLM-designated for Limited Use (i.e., travel on existing routes only), OHV use is moderate to high near low mountains and along some roads. OHV proliferation may occur due to loss of parts of the Johnson Valley Open OHV area for the Combat Center expansion. The Combat Center expansion Environmental Impact Statement (EIS; Navy 2011b) concluded that the Ord Mountain route network would be expected to see a pronounced increase in OHV activity as a result of displaced use from Johnson Valley, due to the area's popularity and spillover from Stoddard Valley (TEC 2011). However, the study cautioned that data on reliable projections of increased OHV activity and locations were unavailable and that "projecting increases in OHV use with any certainty, by specific location with the ODA [Open Desert Area], was described by OHV enforcement experts as a near impossibility – there are too many factors, which change dynamically before they can be studied, to establish a reliable projection."

The southern edge of the Ord Mountain grazing allotment intersects the northern roughly third of the recipient area (47 km^2 of overlap). This allotment has a long history of cattle grazing and an allowable limit of 302 cattle (3632 Animal Unit Months [AUMs]) (BLM 2006), although only approximately 30 or fewer cows have been grazed for the last few years (A. Chavez, 2015). Per stipulations in the West Mojave Plan (WMP; BLM 2005), cattle grazing is to be excluded during spring and fall throughout this overlap area in years when biomass production of ephemeral vegetation is below 230 lb/acre (BLM 2006). There are no water sources for cattle in Lucerne Valley (BLM 2006).

The transmission line subsidizes nesting for ravens, and eight active raven nests within 6.5 km of the recipient area were present on the power poles in Spring 2015 (Table 4). One was an "offending raven" nest, under which hatchling tortoise remains were observed. Late spring and summer point counts in 2015 suggested relatively low raven density, generally none, but up to 2 ravens per 10 km^2 (Figure 4). But, during other surveys in September, flocks of dozens of ravens were seen daily flying through the valley.

Domestic dogs were responsible for mauling and killing tortoises in the southern portion of the recipient area in previous years (Jones 2002). However, many of the houses in Lucerne Valley are now abandoned; the nearest occupied house is 6.6 km south of the release site. Elevated canid trauma (Ranks 3 and 4) was evident in 38.2 % of the 102 tortoises (Table 4), but all trauma was healed. This may suggest that dogs are no longer roaming the area.

Despite these potential or realized threats, mortality is not unusually high compared to other sites. Preliminary estimates suggest annual mortality rates of fewer than 0.5 adult tortoises per km^2 in the last four years. While not as high as Rodman-Sunshine Peak North or Daggett Control, this is still high compared to the 2% suggested by Turner and Berry (1984) as "normal" for a sustainable population. This consistently high mortality rate throughout the study sites is very possibly the result of the multi-year drought in this region. Forage production in this area was negligible in 2012, 2013, and 2015 (A. Karl, field notes). Drought has been implicated in documented mortality episodes (Peterson 1994, Longshore et al. 2003, Karl 2004, Lovich et al. 2014).

Rodman-Sunshine Peak North

This site is a broad bajada of mixed fair, medium and moderately good habitat with a pre-translocation density of 4.9 tortoises/km^2. A broad, lava flow provides an impermeable barrier to tortoise movement toward Interstate-40 (I-40). No future development is anticipated, and with the exception of a transmission corridor with three high-voltage transmission lines, and a distribution line, there is little current disturbance. All of the lands are federally-owned (San Bernardino County 2015). This site is relatively protected by its large overlap with conservation areas and Sunshine Peak Range Training Area (RTA), and adjacency to the Rodman Wilderness (Figure 3b). Sunshine Peak receives extremely little disturbance. It is a "hung ordnance" area, where aircraft try to dislodge ordnance that fail to launch during training exercises. Ground activity, primarily by the Combat Center's Explosive Ordnance Division (EOD), is limited to a few days per year, when EOD detonates or removes ordnance.

This site was configured to avoid dispersal into Wilderness, per BLM (Symons 2015), and provide at least a 6.5 km distance from the MEB northern battalion route. Because of the constraint to avoid Wilderness, most tortoises will have to be translocated to the Sunshine Peak RTA. To avoid translocation and tracking constraints due to limited access to the Sunshine Peak RTA, the Combat Center will implement a monitoring effort that varies from the other sites (Section 4.1.1, Tracking).. Despite these challenges, this remains a valuable recipient site due to its land use protections, and the proposed monitoring will provide useful information.

Mortality rates and factors are still being analyzed, but preliminary results suggest relatively high annual mortality rates of roughly 2 adult tortoises per km^2 for the last four years. The other recipient and control sites had annual mortalities below 0.7 over the same time period, except the Daggett Control site (see below). Infection by *M. agassizii* and *M. testudineum* appears to be very low; none of the 24 samples analyzed to date were positive for either pathogen and only two were suspect (Table 4). These results are virtually identical to those for 2014 (A.P. Woodman, unpub. data) in the same area. We are awaiting the lab results on the remaining samples from this site.

Nearly 30% of live tortoises exhibited elevated levels of trauma from canids (Ranks 3 and 4) at this site; 12 of 68 had fresh trauma. Trauma was largely confined to the furthest west areas closer to the freeway rest area and the Newberry Springs residences, mostly

beyond the dispersal area (Figure 5b). The transmission line subsidizes nesting for ravens, and 11 raven nests within 6.5 km of the recipient area were present on the power poles in Spring 2015 (Table 4). One was an "offending raven" nest, under which hatchling tortoise remains were observed. A second offending raven nest was inactive. Otherwise, ravens were observed at the site in generally low numbers (Figure 4).

Many of the shells were intact, suggesting that most tortoises died of causes other than predation. Given the relatively localized canid trauma and the apparent lack of Mycoplasmosis, a regional factor such as drought is a more likely the cause of the elevated mortality. In addition, a flood event in late Summer 2014 likely buried many tortoises. High mortality on this site would support the interpretation of a depleted population.

Siberia

The Siberia recipient area lies on a narrow, steep alluvial fan out of the Bullion Mountains, and has a pre-translocation density of 2.6 tortoises/km^2. There is no current use of the site that would negatively impact tortoises (Table 3), but it was formerly the site of a proposed solar plant ("Siberia"). A large block of private lands in the west leaves open the possibility of future development, although this area is no longer in a solar energy development zone (CEC et al. 2014). Currently, the area is proposed for conservation in the Desert Renewable Energy Conservation Plan (DRECP; California Energy Commission et al 2014), the California Desert Conservation and Recreation Act ("Feinstein Bill"; Feinstein 2015), and California Minerals, Off-Road Recreation and Conservation Act ("Cook Bill"; Cook 2015).

The release area here was constrained by three major factors: (a) proximity to the Combat Center; (b) distance to State Route 66 (SR 66); and (c) poor habitat in the center of the site. Without fencing, there are no barriers preventing tortoises from travelling onto the Combat Center. However, the USMC has agreed to fence the border with tortoise exclusion fencing to solve this problem. SR 66 is 6.5 km east at the nearest point. While this old highway is not heavily travelled, tortoise mortality is possible. Finally, most of the center of the fan is very poor habitat. The heavy monsoon during late Summer 2014 scoured the large wash system in the center of the fan, and little soil remains. Few tortoises remain in this scoured wash as well. During solar site surveys in 2012, 24 tortoises were found in this wash (URS 2014); during 2015 searches, only a single tortoise was found.

Preliminary analyses suggest annual mortality rates of roughly 0.7 adult tortoises per km^2 in the last four years; this is consistent with most of the other recipient and control sites and may reflect both the drought and the flood. Canid trauma was moderate, and consistent with most of the sites; 26.8% of the tortoises had elevated levels of trauma (Table 4). None of the canid trauma was fresh.

Broadwell

This site lies on a large, steeply sloping bajada bordered by low to tall mountains with a pre-translocation density of 5.1 tortoises/km^2. Much of the bajada has only moderate utility to tortoises because of the densely cobbly and gravelly substrates; the low species richness and plant volume is an indicator of this lower quality habitat. Not surprisingly, tortoises were disproportionately found in the incised washes of the upper bajada near the mountain toeslopes; these also had a high component of caliche cavities that are favored as burrows by tortoises.

The site achieves moderately high protection from overlapping and nearby existing and proposed conservation lands (Table 3, Figure 3d) and nearly all of the lands are federally owned. There is little current use of the area with the exception of a transmission corridor with two high-voltage transmission lines, and future development is not anticipated. The transmission line provides raven nesting subsidies, but has not been studied, so the degree of raven use of the area is unknown.

Preliminary analyses suggest annual mortality rates of fewer than 0.3 adult tortoises per km^2 in the last four years, consistent with most of the other recipient and control sites. Broadwell has a higher disease prevalence relative to *Mycoplasma* than some of the other sites – 12% of the tortoises sampled (n=25) were positive for *M. agassizii* (Table 4). Canid trauma was moderate, and consistent with most of the sites; 25.9% of the tortoises had elevated levels of trauma (Table 4). None of the canid trauma was fresh.

Cleghorn Recipient and Control

These sites are discussed together because they are only three kilometers apart, but separated by a tortoise exclusion fence. The recipient site will be completely fenced with tortoise exclusion fence and studied as a constrained dispersal site (Figure 3e; also see Section 4.2.3 below). After two years, the constraining fence on the east will be removed (the fence between the constrained dispersal area and SEA impact area will remain in perpetuity). A mark-recapture plot was established outside the current constrained dispersal area, and will be used as an additional control site until tortoises are released from the constrained dispersal pen.

Both the control and recipient sites are in undeveloped native habitat, with the recipient site having a pre-translocation density of 6.5 tortoises/km^2. They are on the Combat Center (the recipient site is in a Special Use Area [SUA]) and adjacent to Cleghorn Wilderness, so are protected from public use or development. Disease incidence relative to *Mycoplasma* is low. Only one in 38 tortoises was positive or suspect for *Mycoplasma* spp. in 2015 (Table 4). This is consistent with earlier surveys in 2010 in Cleghorn Pass RTA adjacent to the SEA – of six tortoises, none was positive and two were suspect (J. Smith 2011, unpub. NREA data).

While preliminary mortality rates are not higher than other sites (0.5 adult tortoises per km^2 per year in the last four years), canid trauma is the highest of any site. For the

combined sites, 59.5% of the tortoises had elevated levels of trauma (Table 4). None of the trauma was fresh and there was no clear distributional pattern that would that suggest that dogs from the houses in Wonder Valley to the south were preying on tortoises (Figure 5e). Most of the trauma occurs within 6 km of the houses, but some is well north, near the mountains. There may well be two sources of canid trauma, domestic dogs and coyotes. Assuming that dog trauma is occurring (dogs could be heard during our surveys), we moved the constrained dispersal site beyond 6.5 km from the houses. Further, we plan to implement an information outreach program to encourage people to confine their dogs. We will also conduct a study to monitor dog and coyote presence, install deterrents for the constrained dispersal pen (e.g., hot wire), and implement a canid control program.

3.3.2 OTHER CONTROL SITES

Rodman-Sunshine Peak South

This control area is in an SUA adjacent to the WEA. It comprises a substantial area of moderately good and good habitat that is relatively protected by its large overlap with conservation areas and the SUA, and proximity to the Rodman Mountains Wilderness (Figure 3b). The main issue with the site is the tortoise exclusion fences. Tortoises will be separated from the training exercises by a tortoise-proof fence, but with tortoises fenced in on three sides, this does not represent a perfect, unmanipulated site.

Future OHV impacts are questionable. A small triangle (~12 km^2) of Johnson Valley Open OHV remains north of the SUA (Figure 3b). At this time, the only access to this triangle is the transmission line maintenance road, so it is uncertain whether this area would be visited by recreationists. This could change, however, if the Cook Bill (Cook 2015) creates a broader connection between this isolated triangle and the main Open OHV area (Figure 3b).

Mortality factors (e.g., rates, canid predation) are not yet known. The transmission line subsidizes nesting for ravens but only one active raven nest was observed within 6.5 km (Table 4). Only one tortoise of the 22 sampled is seropositive for *M. agassizii*. We will complete surveys to find and transmitter additional control tortoises in early Spring 2016.

Daggett

This site was chosen because of its higher quality habitat over a relatively broad area and its separation from, but proximity to, the Rodman-Sunshine Peak North and Lucerne-Ord recipient sites. While a mixture of public and private lands, its location within conservation lands provide impediments to further development (Table 3, Figure 3g); BLM is not aware of any proposals for development (Otahol 2015b).

Preliminary mortality analyses suggest that annual mortality is relatively high, roughly 1.8 adult tortoises per km^2 for the last four years. This site is subject to the same regional drought-related pressures discussed earlier. Predator pressure is also high. Of 100

tortoises sampled, 40% have elevated levels of canid-related trauma (Table 4); 11 of 73 tortoises had unhealed injuries. There was no direct evidence of dogs (dogs or scat) during the surveys in Fall 2015 or pattern of trauma nearer the houses that would suggest domestic dogs (Figure 5f). Also, it seems unlikely that dogs would traverse the freeway from the towns of Daggett or Yermo to prey on tortoises; there is only one occupied house on the south side of the freeway and we don't know if dogs live there. Coyotes that are attracted to the residential and agricultural development at Daggett may be the canid predator at the Daggett control site. Further monitoring may provide answers.

The transmission line subsidizes nesting for ravens. Nine active raven nests were observed within 6.5 km (Table 4). Raven presence from May through July was relatively low, 0.5 ravens per 10 km^2 during point count surveys (Figure 4). However, agriculture, residential development, and the freeway provide several local food subsidies. Raven populations are likely to be moderately high in the area, with concomitant high predation on juvenile tortoises.

The presence of *Mycoplasma* infections is unusually high compared to other sites (Table 4), with 18.9% of the 53 tortoises analyzed to date are positive for *M. agassizii* and/or *M. testudineum*.

Ludlow

This site comprises fair to moderately good habitat, and is very similar to occupied areas of the paired Siberia site. It is relatively undisturbed by human activities; only a pipeline currently provides access, and use by the public appears negligible. Preliminary estimates of mortality suggest an annual rate of 0.7 adult tortoises per km^2 for the last four years, relatively consistent with most other recipient and control sites. Canid trauma was the lowest observed at any site – 13.5% (Table 4). Incidence of disease is not yet available.

Calico

This paired site to the Broadwell Recipient Site lies on a small south-facing bajada against the foothills of the Cady Mountains. It is relatively undisturbed by human activities and the former grazing allotment has been retired. It is marginally protected from development, based on current and proposed conservation designations (Table 3, Figure 3d). Impacts are similar to the Broadwell site. Infection by *Mycoplasma* spp. occurs in 7.7% of the tortoises tested (Table 4), which is slightly higher than most other recipient and control sites, but more similar to Broadwell (12%). Canid trauma was moderate, and consistent with most of the sites; 22.2% of the tortoises had elevated levels of trauma (Table 4) but none was fresh.

Bullion

This site has good habitat quality and receive high protection from public activities or development. Bullion is adjacent to the Cleghorn Wilderness and far from any human impacts. Future threats appear to be limited to training activities in that portion of the

control site in the Combat Center. Raven surveys have not been performed, analysis of mortality rates and trauma due to canids are under analysis and will be completed prior to translocation, and disease levels are low. Of 23 tortoises sampled in 2015, none was seropostive or suspect for *Mycoplasma*. Historically, no tortoises had signs of respiratory disease or were seropositive for *Mycoplasma* on the Bullion demographic plot in 2001, 2002, 2003, or 2008 (Kiva 2008). In 2013, one tortoise tested seropositive for *M. agassizii* and three were suspect for *M. testudineum* (Kiva 2013).

3.3.2 CORRECTION OF SIBERIA AND BROADWELL VALLEY SITES

The Siberia and Broadwell Valley sites were similar in elevation and topography with variation in both and tortoise distributions within each site (Section 3.3, Figures 5c & 5d). Tortoises were transmittered and had health assessed in 19 and 24 km^2 (36 & 38% respectively) of the respective sites in 2015, but occurrence and density were not measured for the entire sites. Tortoises should exist outside the surveyed areas as tortoises move, areas not surveyed included features similar to those of surveyed areas, and the sites are generally accommodating to tortoises (Section 3.3). Only one tortoise was found in Siberia's great wash in 2015, but 24 were found there in 2012 (Section 3.3).

We also quantified the area of suitable habitat using the model created by Barrows et al 2016, which used local calibration data (MCAGCC and expansion study areas) for a fine scale analysis. The habitat model indicates 44% of the Siberia site meets the 0.6 habitat suitability index (HSI). The model criterion excludes habitat of lower quality, and tortoises were found outside the 0.6 HSI boundaries in 2015 (Figure 5c). To be conservative, we consider the area outside the boundaries as lower quality than within the boundaries of the model. If we estimate that one third of this area (=0.33 x 56%=18%) can support tortoises at an HSI of 0.6, then roughly 62% (=44+18) of Siberia is suitable, corrected to the HSI of 0.6. Broadwell Valley is similar to Siberia, albeit slightly smaller and at a slightly higher elevation, which might support higher tortoise densities than Siberia can today and in the future given climate change (Barrows et al. 2016).

The amount of quality habitat per unit area of Broadwell Valley and Siberia is about 67% of that for Lucerne-Ord and Rodman-Sunshine Peak sites. This could be construed that Broadwell Valley and Siberia will have, per unit area of dispersal, post-translocation densities similar to that of Lucerne-Ord and Rodman-Sunshine Peak (i.e., 5.5 adults per km^2 divided by 0.67 or 67% ~ 8 adults per km^2; Table 6). As corrected, the post-translocation densities would be roughly similar among the four recipient sites (excluding Cleghorn Lakes). We will compare results with post-translocation densities calculated by both means (uncorrected and per unit of 0.6 HSI habitat).

3.4 RECIPIENT SITE PREPARATION

3.4.1 TORTOISE EXCLUSION FENCING

Permanent tortoise exclusion fencing will be installed prior to translocation:

- Between impact areas and recipient areas and/or SUAs, to keep tortoises from entering the impact areas (Figures 3b and 3e);
- Between recipient areas and the Open OHV Area north of the WEA (Figure 3b); and
- Along the Combat Center border at the Siberia site, to keep transmittered tortoises from crossing into the Combat Center (Figure 3c).

Temporary tortoise exclusion fencing will be installed at two locations to keep tortoises from dispersing into the Cleghorn Wilderness:

- The constrained dispersal plot in Cleghorn Lakes RTA (Figure 3e); and
- The southern portion of the Bullion RTA (Figure 3f).

Materials and Design

Exclusion fence materials and design will comply with USFWS (2009a) specifications. For temporary fencing, rebar or other sufficiently sturdy posts may replace t-stakes. In all cases, supporting stakes will be spaced sufficiently to maintain fence integrity. Tortoise-proof grates ("cattle guards") will be installed at entry points where unimpeded vehicle traffic is necessary.

Surveys and Monitoring during Fence Construction

Within 24 hours prior to fence installation, biologists will survey the staked fenceline for tortoises and for all burrows that could be used by tortoises. Surveys will include 100% of all areas to be disturbed by fencing and a swath of at least 90 ft centered on the fenceline, using 5 m-wide transects. Tortoise burrows will be mapped using Global Positioning System (GPS), and the burrow size and occupancy recorded. If not occupied, indications of how recently the burrow was used will be recorded. Occupancy will be determined by a combined use of reflective mirrors, probing, tapping the entrance, listening, and/or scoping with a fiberoptics scope. In all cases, occupancy will be verified only if all interior edges of the burrow can be felt, such that a "hidden" chamber at the end is not missed. Any tools used inside a burrow will be disinfected before use in another burrow, using the most recent disease prevention techniques (e.g., USFWS 2015a). Burrows may be flagged, if it will not attract poaching. Flagging also may attract predators, but can be placed at a standardized distance and direction from burrows.

All burrows will be visually and tactilely examined for occupancy by tortoises and other wildlife. If occupancy is negative or cannot be established, the burrow will be carefully

excavated with hand tools, using standardized techniques approved by USFWS (2009a) and the Desert Tortoise Council (1994), including disinfection techniques for all tools.

The fencing will be shifted to avoid all burrows over 0.5 meters in length and all active burrows, with the fence placed between the avoided burrows and future intensive training. Fence construction may occur during any time of the year (USFWS 2011b). All fence construction will be monitored by approved biological monitors (BMs) to ensure that no desert tortoises are harmed. The level of monitoring will depend on the specific fencing activity, but at least one tortoise monitor will accompany each separate construction team, such that no driving, trenching, fence pulling, or any surface disturbing activities will occur without the immediate presence of a monitor. Maps of burrows from the pre-construction survey will be provided to all BMs to assist in protecting tortoises. Such maps may also be useful for relocating tortoises.

All exclusion fencing will be inspected monthly and immediately after all rainfall events where soil and water flow could damage the fence or erode the soil underneath. Any damage to any fencing, either permanent or temporary, will be repaired immediately. If exclusion fencing is installed when tortoises are known to be active, either from spring through fall or in winter during unusually warm weather, then all installed exclusion fence (partial or complete) will be checked 2-3 times daily for two weeks to ensure that no tortoise is fence-walking to the point of exhaustion or overexposure. If midday temperatures are above thresholds at which tortoises must go underground to escape heat (approximately 43ºC ground temperature), then one of the fence checks should occur one hour prior to this threshold being reached. This same process will occur for the first 2-3 weeks of the activity season if the fence is installed in winter, when tortoises are underground.

Tortoise Disposition during Fence Construction

Any nests found between November 1 and April 15 are unlikely to be viable and will not be moved; hatching is typically completed by October (BT Henen and AE Karl, unpub. obs.). In the event that nests are found between April 15 and October 31, the nests will be moved. Eggs will be inspected to determine if they are viable and, if so, will be moved to a similar microsite (e.g., cover, plant species, soil type, substrate, aspect) on the recipient sites using standard techniques (e.g. Desert Tortoise Council 1994, USFWS 2009b). Translocated nests may be fenced with open-mesh fencing (e.g. 3-5 cm wide mesh) that will permit hatchlings to escape but prevent depredation by canids that might be attracted by human scent to the new nests. Alternatively, smaller mesh fencing or other techniques may be used to prevent ground squirrel predation on nests. Open-mesh fencing or avian netting also will be installed on the roof of the nest enclosure to prevent predator entry. Nests will be monitored from a 30-foot distance once a month until late November, at which time they will be excavated for examination. If possible, hatchlings will be weighed, measured, photographed, described, and marked.

3.4.2 PREDATOR MONITORING AND CONTROL

Management of coyote and raven predation of desert tortoises is an explicit part of the translocation program. Coyote populations are unlikely to be harmed by removal of some animals. By contrast, tortoise populations are already strongly diminished and the species is imperiled. The intent of the Combat Center translocation is to augment tortoise populations and improve recovery possibilities, not subsidize coyotes in the form of translocated tortoises. Accordingly, coyotes will be controlled in the translocation areas.

Prevention

The Combat Center will continue implementing policies that reduce predator subsidies, such as water and food waste controls. In addition, the Combat Center is partnering with USFWS to study the effectiveness of raven aversion techniques.

Monitoring

Post-translocation monitoring of translocated and control tortoise populations will be the primary means of detecting predation. This monitoring will be supplemented by regular Conservation Law Enforcement Officer (CLEO) patrols through the recipient and control sites. The Combat Center has also budgeted for predator-specific surveys (e.g., surveys for raven nests along pole lines), and will implement these surveys as funds are available.

Depredation

The Combat Center will establish a coyote hunting program aboard the installation. This includes measures to increase the local hunting population, such as providing pre-licensing hunter safety education and offering information about hunting opportunities in the area. The Combat Center will organize coyote depredation hunts to reduce the local coyote population, and will actively deploy CLEOs for coyote trapping and hunting into areas where coyote predation rates of translocated tortoises exceed those of control populations. Ravens with evidence of predation on tortoises will be reported to USFWS for depredation.

3.5 DISPOSITION CRITERIA

Three questions must be answered to determine where individual tortoises will be translocated:

1. How many tortoises go to each site?
2. Which individuals will go to which site?
3. Of the group in #2, which tortoises will keep transmitters (only 225 of the existing 1138)?

The answer to the first question is based on experimental augmentation densities as explained in Section 4.2.1, below (also see Table 6). The second and third are subject to a number of criteria, including, but not limited to:

- Demography – maintaining capture area sex ratios and population size structure.
- Social groups – Male tortoises are known to be familiar and mate with specific females in their area. While social "groups" may be difficult to determine without extensive observation or genetic paternity testing, geography may serve as a logical surrogate for moving groups of tortoises together.
- Habitat types – While tortoises are highly opportunistic and may thrive in new habitats, tortoises accustomed to living in certain topographies (e.g., rocky slopes; incised washes; gentle bajadas with deep, friable soil) may adjust more readily to a new location if the habitat is similar to that at the capture location. The Combat Center will generally move tortoises to new locations with topographies similar to their home sites. However, to limit the distance from impact area to recipient site, some tortoises from different topographies in the WEA will be moved toLucerne-Ord, where they may spread to nearby topographies most similar to their home sites.
- Disease Levels – Epidemiological considerations related to seropositive, suspect, or clinically ill tortoises will be evaluated to minimize the spread of *Mycoplasma* spp. Some tortoises in the impact area may not be suitable candidates for translocation because of a moderate to severe nasal discharge, oral plaques, or other conditions that may compromise survival (USFWS 2015a). While there are no tortoises in the WEA or SEA that are known to currently meet these latter criteria, conditions could change.

Disposition plans for every tortoise (or groups) are currently under development and will submitted to USFWS for approval in ample time for review.

4.0 MONITORING AND RESEARCH

Choice of recipient sites is critical towards a better chance for translocation success, but we will know how well we succeed through carefully defining and evaluating variables to monitor. The overarching goal is to minimize losses and maximize assimilation into the existing population. Monitoring and research are essential to quantify how well the translocation addresses this goal. This translocation provides numerous opportunities to answer research questions that increase our understanding of the species and advance species recovery. However, we prioritize a successful translocation above research.

4.1 SURVIVAL AND ASSIMILATION

4.1.1 SURVIVAL

Survival will be examined primarily from tracking observations of radiotelemetered animals (Table 5). However, the survivorship or mortality of marked tortoises will also be analyzed from mark-recapture surveys, health assessment records, and transect surveys. The combination of health assessments (general observations and specific USFWS health assessments) and habitat analyses are planned to help interpret the factors

affecting survivorship, assimilation, and abundance. Each technique is described below with a discussion of the data analyses.

Tracking

Survival will be assessed via tracking 675 telemetered tortoises, 225 each of translocated, control, and resident groups, with 225 representing approximately 20% (190 tortoises) of the adults, and 5% (35 tortoises) of the juveniles originally anticipated to be translocated (Table 1, USFWS 2012). Translocated, resident, and control tortoises will be tracked the first year according to the schedule in the *Guidance* USFWS (2011b; see Section 3.1, above). We anticipate that translocated tortoises will settle somewhat into newer home ranges after one year (Nussear 2004, Karl and Resource Design Technology 2007, Field et al. 2007), at which time we will track them less frequently: weekly during high activity periods - April, May, October and the last half of September; every two weeks from June through the first half of September; and monthly during November through February (~26 locations per tortoise per year).

After five years, the transmittered group will be decreased to 150 tortoises (50 per group) and monitored via tracking for five more years, using the decreased tracking schedule above. Then we will remove these transmitters unless the Combat Center and the resource agencies determine that additional monitoring would be productive.

During tracking, for every live, numbered tortoise observed, we will record location (UTM), behavior (e.g., foraging, mating, fighting, other tortoise interactions, walking), position (sheltered in shade, above-ground, or burrowed), burrow attributes (length, type, distance of tortoise in burrow), and health, if possible. We will photograph any dead, numbered tortoise and record data on time since death, cause of death and rationale, and percent of shell remaining. Trackers will note unusual raven or coyote activity, illegal or elevated legal OHV activity, or other unexpected or intense potential risks to tortoises.

We will analyze survivorship of the translocated and resident tortoises compared to control tortoises, with most data gathered during the first active season (release until brumation), each of the first five years (675 transmittered tortoises), and for years six to ten (n=150 transmittered tortoises). We will use Kaplan-Meier methods to evaluate survivorship for and among groups (controls, residents and translocatees), and comparisons among periods (e.g., months, seasons, years and extended periods), sites, sexes, sizes, age classes, health status (e.g., *Mycoplasma* test results and Body Condition Scores), and other independent variables (e.g., habitat type and levels of ground disturbance or predator sign). Kaplan-Meier curves may be compared with log rank tests or hazard ratios (Rich et al. 2010). We may also compare survivorship among groups and independent variables using contingency table analyses (e.g., Zar 1999 & Field et al. 2007). We will consider AIC_c – based model selection to evaluate models including group, site, sex, and other variables (e.g., Nussear et al. 2012).

<u>Rodman-Sunshine Peak North</u> - We propose a combination of radiotracking, mark-recapture plots (see methods below), and transect surveys of tortoise density (USFWS

2010; see Dispersal Area Monitoring below) to monitor survivorship, tortoise density, health (methods below), and habitat quality (see Dispersal Area Monitoring, below) at the Rodman-Sunshine Peak North site. We will perform, for the first three years, a series of line transects across the broad dispersal area to a) estimate tortoise density for the dispersal area, and b) collect data on as many tortoises, residents, translocatees, transmittered, untransmittered, marked, and unmarked tortoises in Sunshine Peak. This will help us find animals in each of these categories that are translocatees or residents and enable us to perform health assessments, increasing sample sizes and statistical power. During the first couple of years tortoises will likely disperse across most of the dispersal area. After the first three years we will use these data to determine if there are suitable plot locations for long-term (e.g., 5-year intervals) monitoring, or sustain monitoring via the line transects.

We anticipate ready access to this training area at least two times per year, and will attempt to schedule additional access to the training area to support tracking telemetered tortoises. If additional access proves infeasible, however, transmitters for these animals will be removed so tortoises are not burdened with unused transmitters.

We will consider Global Positioning System (GPS), satellite, or cellular transmitters for monitoring when the technology becomes suitable to not compromise tortoise survivorship.

Table 5. Main study objectives, methods used, and variables used in two critical facets of effectiveness monitoring: Survival and Assimilation. For each Method, we list the primary dependent variables (indicator variables) and secondary indicators gathered while measuring primary dependent variables. Independent or predictor variables range from select categorical variables (e.g., treatment group) to uncontrolled continuous variables (e.g., rainfall); they are not listed with any one method. BCS = body condition score. COD = cause of death

Study Objective	Methods	Dependent Variables, primary	Secondary indicators, from Method	Independent Variables
Survival	Tracking	Individual, annual & percent survivorship (per group, site, sex, age, etc.)	COD estimation (e.g., predator, drought, disease or vehicle strike)	Groups - Translocatees, Residents, Controls
			Simple health measures - trauma & clinical sign	Site
			Behavior (e.g., fighting, pacing, active, dormant or thermoregulating), time spent aboveground, and coversite choice & formation	Research treatment (density, grazing, constrained dispersal, translocation distance, headstart); not independent of site
			Spatial - movement frequency, distance & displacement; home range or activity areas	Sex - male, female, undiscernible or juvenile
	Mark-Recapture Plots	Density; among-year recaptures and carcass information contribute to survivorship estimates, as above	Health, behavior, movement & COD as above	Size & condition[1] - body mass, carapace length, shell volume (covariate); BCS & body density (see also Secondary Indicators)
			Changes in population density and demography (size and sex frequencies) may support or contradict survivorship measures	Time since translocation
			Growth - change in mass, length, volume, and secondary sexual characters	Weather, especially rainfall (mm) per winter, season or other relevant period, including prolonged drought; dichotomous, index or continuous-scale (ratio-scale) data from gauges
	Health Assessments	Recapture and carcass information contribute to survivorship estimates, as above	Full health measures, incidence (ranking, %) and severity (categorical or indices) of trauma and clinical signs, condition indices, ELISA results (positive, negative or suspect categories, for both *Mycoplasma* spp.), growth	Habitat condition, change; annual plant cover, invasive plant cover
			COD, behavior and growth as above; palpation of eggs	Cattle grazing - dichotomous, index or continuous-scale (ratio-scale)

	Transects	Recapture and carcass information contribute to survivorship estimates, as above	Density, demography, COD, and general health, behavior & growth as above	Ground or vegetation disturbance (e.g., vehicle) - dichotomous, indexed or continuous-scale (e.g., vehicle track counts)
				Predator counts (e.g., Common Raven and coyote) - presence or absence, indices, point counts or point count rates
				Proximity to predators & subsidies (e.g., transmission lines, raven nests, human communities or recreation areas)
Assimilation	Microsatellite markers & single nucleotide polymorphisms	Egg and clutch paternity (group assignment)[2]	Annual egg & hatchling production, # per female	Group (Translocatees, Recipients, Controls), site, treatment, translocation distance and time since translocation (e.g., 3, 5, 7 & 9 years post-translocation); see Survival above for additional variables, such as body size
	Tracking, health assessment and transect encounters	Behavior (e.g., fighting, mating, egg-laying, pacing, active, dormant or poor thermoregulation), responsiveness, posture, and coversite co-use (e.g., mixed group)	Spatial - movement frequency, distance & displacement; palpation for eggs: during health assessments (in season)	as above
	Tracking	Spatial - overlapping home range or activity area	Behavior, as above	as above

1. Growth and condition can be used as an indicator or predictor variable, depending on the particular analysis.
2. Davy et al. (2011) & Rico & Murphy, unpublished data for NREA

Table 6. Number of tortoises to be translocated to each recipient site. Size categories for adults (carapace length ≥160 mm) and juveniles (carapace length < 160 mm) follow USFWS (2012). Juveniles with carapace length < 110 mm will be translocated after headstarting. Initial densities are based on USFWS pre-project methods.

Recipient Site	Initial Density (tortoise/km^2)	Projected[5] Density	Translocatees	Post-Translocation Density
Lucerne-Ord	5.2	4.01	448	8
Rodman-Sunshine Peak North	4.9	3.78	316	8
Siberia	2.6	2.08	182	5.5
Broadwell	5.1	4.09	19	5.5
Cleghorn Recipient (constrained)	6.5	5.21	32	10.5

Table 7. Approximate number of transmittered resident and control tortoises targeted for each site. Sex ratios mirror sex ratios on the relevant impact area (1.3:1 for the WEA, 1.0:1 for the SEA).

Size Cohort	≥160 mm MCL			~120-159 mm
(Sex/Transmitter Size)	Male	Female	Total	(RI2B-6 g)
RECIPIENT SITES				
Lucerne-Ord	38	27	65	15
Rodman-Sunshine Peak North	26	19	45	20
Siberia	15	15	30	0
Broadwell	13	12	25	0
Cleghorn Recipient	13	12	25	0
TOTAL Resident Tortoises			190	35
CONTROL SITES				
Rodman-Sunshine Peak South	25	19	44	15
Daggett	31	24	55	20
Ludlow	12	9	21	0
Calico	11	9	20	0
Cleghorn Control	13	12	25	0
Bullion Control	12	13	25	0
TOTAL Control Tortoises			190	35

[5] Based on draft USFWS translocation guidance. Assumes an 8.3% decrease per year for the Lucern-Ord and Rodman-Sunshine Peak recipient sites and a 7.1% decrease per year for remaining sites over three years.

Mark-Recapture Plots

We will repeatedly evaluate mark-recapture plots at control and recipient sites to help monitor the survival of translocatees and residents (see above for approach to survival analyses). These plot analyses will also provide estimates of tortoise density (tortoises per km^2) and demography (e.g., sex and age structure), and support planned measures of site fidelity (e.g., Nussear et al. 2012), health assessments (see below), and other variables (e.g., habitat condition and health parameters) that may determine or help explain the survivorship of the groups at the translocation and control sites. These plots, especially control plots, will also provide a general reference for population monitoring in the area.

Twelve 1-km^2 plots have been established in the recipient and control areas, five in control sites and seven in recipient areas (Table 2). Each plot will be surveyed for population density and structure every five years for 30 years, an interval consistent with Strategy 4 of the revised Recovery Plan (USFWS 2011a). Standard mark-recapture techniques (e.g., Lincoln-Peterson) will be employed, with at least two passes, and all captured tortoises weighed, measured, photographed, sexed, and described. For these demographic plans, we will collect the additional data identified above for live and dead tortoises found during tracking. We will assess health, test for *Mycoplasma* spp. antibodies (see Section 6.3, below), and store blood sample residues for genetic (see Section 4.2.4, below) analysis.

During each reading of the mark-recapture plots, we will assess habitat to monitor changes or stability. We will use standardized transects to measure percent cover, density, frequency, species richness, species evenness, and robustness of perennial plants. On these same transects, hydrology, annuals (percent cover and biomass by species), substrates, and soils will be measured on stratified-random quadrats. All annuals present on each transect, including all tortoise forage species, will be inventoried. Exotic annuals will also be measured to document spread and population increases. Surface disturbance will be measured by type and age. Perennials, soils, substrates, and hydrology will be measured every 10 years for 30 years. Annuals and surface disturbance will be measured every five years on all plots. Biomass will be measured on a subset of the mark-recapture plots every five years.

Further, we will quantify predator use of the site, documenting species, abundance, and distribution. Raven numbers (individuals and nests) will be recorded and the area below nests of both ravens and large raptors will be searched for tortoise remains. Qualitatively, OHV recreation, unforeseen developments, and any evidence of free-ranging dogs and/or coyotes will be documented and described. We have started raven surveys (Figure 4) and canid surveys (February 2016).

Health Assessments

The tortoise health assessments will help us find marked tortoises, transmittered or not, and monitor their survivorship. The assessments will provide health, disease, and trauma

indicators to help interpret group survivorship at and among sites and other categories (e.g., sex or age).

We will monitor disease incidence and other potential health issues via standardized assessments (USFWS 2015a, Berry and Christopher 2001) of clinical sign, injury, *Mycoplasma* spp. antibodies, cutaneous dyskeratosis, body condition scores, and mass-to-volume ratios [*cf* Loehr et al. 2004]) of telemetered tortoises, all tortoises captured on mark-recapture plots, and opportunistically on transect surveys (see *Transects*, below). For telemetered tortoises, a minimum of 150 transmittered tortoises (50 from each group, and at least 10 per site) will be assessed. A high site incidence of disease or trauma may trigger additional assessments for that site. We will assess health two times a year at each site, half the monitored population in spring and half in fall, during the first five years when the initial stressors from translocation may be greater. We will repeat health assessments at 5 and 10 years when transmitters are removed. Formal health assessments and tissue collection (blood samples and oral swabs) will be performed in October (prior to brumation) and April when activity monitoring substantiates that tortoises are active enough to express immune system responses. In addition, each time a tortoise is handled it will be examined for clinical signs of disease and trauma. The Combat Center will consult with USFWS with regard to incorporating new testing methods as they become generally accepted.

Dispersal Area Monitoring

Although the radiotracking will provide the strongest information about survivorship via its relatively high sample size and repeated measures statistical analyses, the mark-recapture, health assessment, and density transect surveys will provide additional monitoring of the three groups (translocatees, residents, and controls). The mark-recapture data are limited to 12 localized sites, but tortoise density transects over dispersal areas can provide survivorship data of marked (transmittered or not) translocatees, residents, and controls over large areas of the study sites. These surveys will help us find these tortoises, help us estimate survivorship of groups, and help us quantify tortoise density (USFWS 2010), tortoise sign, predator sign, and anthropogenic disturbance. The latter measures will help interpret influences on tortoise survivorship. We will survey 1-km to 12-km long, line transects spaced over the recipient and control areas. Depending on tortoise density and the size of the dispersal area, there may be as many as 5 to 10 transect passes per km^2.

Also, we will use rain gauges at all sites to measure precipitation. We may install more sophisticated weather stations (e.g., Onset HOBO U30) at more protected sites to augment weather data (e.g., ambient temperature, wind speeds, relative humidity) collected by radiotrackers.

Data Analysis

We will analyze data from these for methods to evaluate the survivorship of the translocated and resident tortoises compared to control tortoises. Values not statistically

different from the control values may be considered most successful (see Kaplan-Meier in Tracking, above). The additional data on behavior, burrow use, health status, habitat quality, and other secondary variables (Table 5) may also be analyzed for effects on survivorship. We will consider additional tests and comparisons (e.g., analyses of variance comparing health status among controls, residents and translocatees, or between those that survive and those that died recently) as these may help explain the proximate causes of mortality. The number of comparisons possible is extensive, but may also include Analyses of Covariance (ANCOVA or MANCOVA) to evaluate categorical differences after correcting for covariates such as body size, body condition scores, distances moved, rainfall, or annual plant production. We may also consider multimodel inference analyses to evaluate effects of group, sex, site, rainfall, and other variables (e.g., Burnham and Anderson 2002; Nussear et al. 2012).

4.1.2 ASSIMILATION

Assimilation into the population would be accomplished if translocated tortoises reproduced successfully with resident tortoises. Results for Fort Irwin (R.C. Averill-Murray, pers. comm.) suggest that translocated males were not assimilating to the resident population (they did not produce offspring), but the translocated females produced offspring from resident males. There may be a period that translocated animals need to assimilate.

The main question is to what degree translocated tortoises assimilate with residents. Also, we may be able to use control values as an additional comparison for some measures of assimilation. We will evaluate assimilation via genetic analyses, but will also consider phenotypic data (e.g., home range overlap and site fidelity; Nussear et al 2012) that may indicate potential for mixing of individuals, or settling of individuals in the recipient areas. Genetic assimilation can be measured by paternity of individuals, clutches, and the combination for each group (translocatees and resident), by using assignment tests to compare offspring genetics (e.g., 20 microsatellite loci from genomic DNA; Davy et al. 2011) to those of the parent populations, translocatees, and residents (genetic results evaluated using discriminant analyses; Y. Rico and R. Murphy, unpublished data). The mixture of offspring among the two parent groups indicates a degree of assimilation. Little is known about the long-term viability of stored sperm, and how quickly new inseminations may influence offspring parentage. We may be able to evaluate the rate (e.g., years) at which clutches become more mixed, and what is the equilibrium state of mixing.

We propose evaluating genetic assimilation at years 3 and 5 post-translocation, and if data indicate assimilation requires longer, at later times (e.g., years 10 and 15). The blood sample residues, from which the DNA is analyzed (Rico and Murphy, unpublished data), are retained (banked) from the health assessment studies for the translocatees and the transmittered residents. More residents can be sampled opportunistically in future health assessments. In late April 2019, we will assess whether females are gravid (via palpation, ultrasound scanning, or X-ray radiography) and transport gravid females to TRACRS to lay eggs, eat, and have a chance to rehydrate before being returned to the recipient site.

When clutches hatch, we will analyze egg-shell DNA (or a small drop of hatchling blood) for individual and clutch paternity to assess genetic assimilation.

There are phenotypic data that suggest potential for assimilation, but are not as demonstrative as genetic assimilation described above. Movement distances or displacement (point to point), home range size and overlap, and indices of site fidelity (based on movement data) indicate how much space and habitat the translocatees share with residents (see Field et al. 2007 and Nussear et al. 2012). If they share these resources simultaneously, not segregated in time, it shows a strong potential for interaction and assimilation. Behaviors detected during tracking and other efforts (e.g., male-to-male fighting, sharing burrows, pacing site perimeters away from other animals), and isolated pockets of healthy animals or diseased animals of one group, also provide indices of isolation, conflict, or assimilation (e.g., lack of fighting, sharing burrows, restricted spread of disease). Home range overlap (% and unit areas), degree of agonistic behavior (number and intensity of bouts), and disease incidence (% clinically ill or ELISA positive) will be compared to those in control groups.

The reproductive output of female desert tortoises may also provide an index of assimilation. Isolated females or females with limited interaction with males can stop reproductive cycling (Gerald Kuchling & Brian Henen, unpublished observations) in captivity. This could happen in the wild if the females do not integrate well with the other group. Based on the Ft Irwin results translocated females may not limit assimilation (i.e., produce offspring with resident males) whereas translocated males may be limited in contributing to clutches of resident females. When we assess health status in spring 2019, we will also assess female reproductive status (gravid, non-gravid, and perhaps vitellogenesis; Henen and Hofmeyr 2003). Reduced cycling or vitellogenesis may take years post-translocation because females contain more than one size class of follicles in their ovaries and may take months to resorb follicles.

Assimilation may take time and will be monitored for change over time. Many of the same independent or predictor variables will be analyzed for assimilation as for survival (see Survival, Data Analysis above), with genetic, behavioral, and spatial (home range size and overlap), and genetic indicators of assimilation for each site. Comparing assimilation among translocatees, residents, and controls is the central question, but we will also analyze for effects of site, sex, health status, habitat condition, and weather.

4.2 OTHER RESEARCH

Although the main focus of a successful translocation is to maximize the survivorship and assimilation of the translocatees and residents, we are proposing five main recovery research questions and will consider other recovery-oriented research. We will perform these studies in concert with the primary survivorship and assimilation analyses, so most of the field and analytical methods outlined in Section 4.1.1, will be used to address these questions.

The five main research topics include:

1. Experimental translocation densities
2. Cattle grazing compatibility with desert tortoises
3. Efficacy of constrained dispersal as a tool for translocation
4. Effects of translocation distance
5. Efficacy of headstarting as a translocation tool

4.2.1 EXPERIMENTAL TRANSLOCATION DENSITIES

The primary emphasis of the translocation density analysis is to evaluate whether areas can support densities (number of tortoises per unit area, e.g., adults per km^2) higher than existing densities (Table 6). Densities have declined considerably throughout much of the Mojave Desert (see Section 1.1 above), so habitat in these recipient areas may support higher than current densities. Second, the current guidance (USFWS 2011b) of post-translocation densities (one standard deviation, SD, above the mean for the recovery unit) is deliberately cautious and conservative, but needs experimental testing. For this region, the Western Mojave Recovery Unit, the mean and SD are 2.8 & 0.9 adults/km^2, respectively (USFWS 2015b).

We will test translocation density increases that are 0.5SE (0.9 adult/km^2) to 2.3SE (6.4 adults/km^2), or 17% to 100%, higher than current densities (Table 6) to determine if these areas can support higher densities of tortoises.

We will assess survivorship of controls, residents and translocatees as described above (4.1.1), including Kaplan-Meier and contingency table analyses for survivorship of animals monitored primarily via radiotracking but also via mark-recapture plots, health assessments and dispersal area assessments. We hypothesize that survivorship among the groups (controls, residents and translocatees) would not differ among the translocation density categories (translocation densities). The alternative results (or hypotheses) would include translocatee survivorship is lower at the higher translocation densities (consider survivorship plotted against translocation densities (e.g., % or SE increase, Table 6). Resident survivorship may also be lower at higher translocation densities.

Within the context of translocation density tests for sites, we will also consider variation due to other categorical or continuous variables (e.g., sex, age, size, health status, habitat condition, rainfall, or indices of predator abundance). As with Nussear et al. 2012, we will consider AIC_c – based model selection to evaluate models including group, site, sex and other variables.

As described above for assimilation, we will evaluate genotypic assimilation including clutch paternities and genetic distances of offspring relative to the resident condition and translocatee condition (genetic diversity and genetic distance from residents). We hypothesize that offspring paternity and genetic diversity will be mixed intermediates including parents of both resident and translocatee parents, and genetic distances intermediate between resident and translocatee conditions. The number of translocatees relative to residents may influence the frequency of intermediate paternity clutches and average genetic distance between the two groups. These may also change over time, as

described above (Section 4.1.1), but may settle within two years as translocatees settle and develop new site fidelities (Nussear et al. 2012). Hopefully they will settle within the first five years of monitoring (with the larger samples sizes, n=225 per each group). Differences may be more difficult to detect as animals settle, and as radiotransmitter sample size is reduced to 50 per group in year six post-translocation.

We also hypothesize that the phenotypic variation (e.g., movements, home range size, home range overlap, site fidelity measures) of residents and controls will not differ between residents and translocatees within sites, and among translocation densities. If translocation density affects phenotypic variation, we may see differences among controls, residents and translocatee indices of assimilation (e.g., movements, home range size) with translocatees moving more and having different shaped or larger home ranges than residents have (Field et al. 2007, Nussear et al 2012). The differences may also disappear over time as translocatees settle (ca., in 2 years, Nussear et al. 2012).

We will also use various types of ANOVA to analyze for effects of group, sex, size, behavior, health status and other variables that may help explain different levels of phenotypic variation between groups, and between those that survive and those that die.

Each year for the first five years, we will also assess tortoise density via USFWS-(2015b) and TRED-consistent (Karl 2002) methods that have been used to evaluate tortoise density on the expansion areas and Combat Center since 2008.

4.2.2 CATTLE GRAZING COMPATIBILITY WITH DESERT TORTOISES

Grazing may contribute to the decline of desert tortoise populations (USFWS 1994a, 2011a, Boarman 2002). While there is a substantial body of information that shows both long-term and short-term changes to habitats as a result of grazing, the detrimental effects are not consistent and some benefits may accrue (Ellison 1960). Specific to desert tortoises, little definitive and focused research has been completed on the effects of cattle grazing (Avery 1998, Lovich and Bainbridge 1999). In the absence of information, but assuming that grazing is detrimental, landscape-level conservation actions have targeted the closure of allotments and have revised grazing management of other allotments (USFWS 2011a).

Studies to illuminate the specific grazing factors that affect desert tortoises will assist USFWS and CDFW in recovery efforts. These studies also may assist the allotment operator in revising grazing management practices to accommodate both cattle and tortoises, as an alternative to retiring the allotment. Such studies are encouraged by the revised desert tortoise recovery plan (USFWS 2011a:78). The Ord Mountain Cattle Allotment overlaps the Lucerne-Ord Recipient Site, thus providing an opportunity to examine the effects of grazing on desert tortoises. Both historic and current data on tortoise populations and grazing practices are available, thereby permitting an analysis of both long-term and short-term effects. The design of this study is currently under development and should be available to USFWS for comment and approval prior to translocation.

We will measure the same basic survivorship, assimilation, tracking, plot density assessments, health assessments, dispersal area evaluations, habitat characteristics, and secondary or explanatory measurements indicated above. These analyses will be completed in a dispersal area next to a grazing allotment and within the grazing allotment. We will perform the same data analyses and statistical comparisons among groups, residents, translocates, and controls, but also with the comparison of data between grazed and ungrazed areas. We will use more than one control area (e.g, Daggett and Rodman-Sunshine Peak South) to bolster statistical power. Our null hypothesis is that there will be no difference between grazed and ungrazed areas for all of our comparisons.

4.2.3 EFFICACY OF CONSTRAINED DISPERSAL FOR SPECIES RECOVERY

Constrained dispersal is a technique wherein tortoises are translocated to a fenced site to encourage settling before the fence is removed.Unlike simple translocation to unfenced sites where tortoises may travel away from that site, the tortoises remain because they have established home ranges and become part of the social hierarchy within the fenced area. In this way, specific locations can be augmented, a critical feature if translocation is targeting depressed, depleted, or other specific areas. Results from one constrained dispersal study in the western Mojave Desert (Karl 2007) strongly suggest that the technique has merit.

We propose a constrained dispersal experiment to evaluate constrained dispersal as a recovery action, especially for depressed or depleted populations. The Cleghorn Recipient Site will be the single constrained dispersal site. Because the habitat has remained undisturbed in this area the number of tortoises that will be translocated to this site will attempt to result in post-translocation densities that may approximate historic densities. Current data for tortoises ≥160 mm indicate densities in the Cleghorn Lakes RTA ranging from 3.2 to 16.5 tortoises/km^2 (Table 8). The Cleghorn Recipient mark-recapture plot was sited in the square kilometer with the highest indication of tortoise density based on 2015 TRED transects (A.E. Karl, unpub. data). By contrast, the mean density for the West Mojave Recovery Unit (USFWS 2015) is substantially lower than actually observed locally. To maximize translocation success while still examining constrained dispersal as a translocation tool, 52 tortoises will be translocated to the constrained dispersal site. This is based on mean density measured during clearance surveys.

The Combat Center will install temporary tortoise exclusion fencing around the site perimeter (see Section 3.4.1, above, for fencing details). All tortoises in the constrained dispersal study will be transmittered and monitored for survival, assimilation, movements, home ranges, health, disease, and additional explanatory variables (e.g., demographics, predator indices, and weather), identical to the methods and schedule identified above (Section 4.1.1). Tracking will follow the schedule for all telemetered tortoises in the translocation program to support collecting data on locations, movements, burrow use, and behavior. The Combat Center will remove the tortoise exclusion fencing two years after initial translocation to permit tortoises to join the greater population.

Repatriation will be assessed by continued monitoring of subsequent tortoise movements and comparing them to those of control tortoises at the Cleghorn Control Site. Tracking will end at Year 10, consistent with the cessation of tracking on the larger telemetered group.

Table 8. Tortoise density data at the Cleghorn Lakes RTA and the number of tortoises that can be translocated into the Cleghorn Constrained Dispersal Site based on a 100% increase in population size. Density is calculated from two mark-recapture plots and clearance surveys in the SEA impact area[1]. Mean density for the West Mojave Recovery Unit (USFWS 2015b) is provided for comparison.

Source	**Current Tortoise Density (Point Estimate)** (tortoises / km^2)	**Post-Translocation Density-100% Augmentation** (tortoises / km^2)	**Alternatives for Number of Tortoises to be Translocated for 9.2 km^2 Constrained Dispersal Site**
Cleghorn Recipient Mark-Recapture Plot (2015)	16.5	33.0	16.5 * 8.1 = 134
Cleghorn Control Mark-Recapture Plot (2015)	12.1	24.2	12.2*8.1 = 99
Clearance Surveys for 12 km^2 (2015)	Mean = 6.4 (3.2-11.8)	12.8	6.4*8.1 = 52 (selected)
West Mojave Recovery Unit Mean	2.8	5.6	2.8*8.1 =23

1. Density is the number of tortoises found in each full survey cell, assuming 74% of tortoises found on each pass, 93% cumulative.

We will record the same variables and complete the same analyses as for other sites. However, we anticipate that the constrained dispersal may expedite rates of assimilation, development of site fidelity, and home range overlap compared to the control site and other sites; we may advance comparisons to earlier periods compared to other experimental analyses. After the eastern fence is removed in 2018 or 2019 we anticipate very little additional dispersal will occur, as residents and translocatees will have settled inside the pen with their new neighbors. Still, we must document this settling and site fidelity by continued monitoring of transmittered animals (circa 20 tortoises per group during the first five years) and untransmittered animals in surveys.

4.2.4 EFFECTS OF PHYSICAL AND GENETIC DISTANCE

Translocation risks mixing tortoises with different genotypes (see review and analysis by Averill-Murray and Hagerty 2014) and phenotypes, although the former is typically emphasized when evaluating translocations. In this translocation, we have the opportunity to evaluate both over a relatively short distance (<100 km). See Section 4.1.2, above, for additional details, especially concerning metrics besides genetic distances.

We have mapped genetic distances among tortoises of the WEA, SEA, and a few additional areas within the Combat Center. Similar to early studies (Murphy et al. 2007, Hagerty et al. 2011, Averill-Murray and Hagerty 2014), there is a general pattern of

divergence by distance (Rico & Murphy, unpubl data), with sites near the WEA clustering, sites near the SEA (Cleghorn Lake & Bullion RTA) clustering, but genetic distance substantial between the Bullion RTA and some WEA tortoises. The Cleghorn recipient area is about 50 to 70 km from the WEA tortoises, and about 3 km from the SEA impact area tortoises, the latter probably linked to the Bullion RTA via the Cleghorn Lakes Wilderness (Figure 2b). Both of these distances are much less than the more than 200 km recommended physical limit for translocation before incurring a risk of outbreeding depression (Averill-Murray & Hagerty 2014). This is an opportunity to evaluate the relative success of translocating tortoises with some physical and genetic distance. With data collected during survivorship monitoring (see Section 4.1.1, above), we could compare data among the controls and translocates for patterns of mixing or segregation.

Having the DNA samples from the tortoises will also allow us test whether clutches produce offspring that are segregated or mixed among the WEA, SEA, and residents, and quantify the amount of mixing (see Assimilation, above). We would test this at about three years post-translocation, after tortoises have had time to settle. In late April 2019, we will collect gravid females and analyze eggshell DNA, as detailed in Section 4.1.2, above, to assess genetic assimilation. We will repeat this prior to removing transmitters at the five year mark, and on subsets of translocatees that are monitored for the ten year period.

Our analyses will evaluate the effect of translocation distance on degree of assimilation. However, shorter translocations are likely to be less distinct genetically (shorter genetic distances, F_{ST}, between populations) and more difficult to distinguish offspring from either parent population.

We will record the same variables and complete the same analyses as for other sites and research questions. We hypothesize (null hypothesis) that there will be no significant differences between groups, sites, and sexes for most variables including survivorship, movements, site fidelity, demographics, and health. Also, the assimilation measures will be similar among sites, with the exception of the degree of genetic diversity among offspring, and perhaps the net genetic distance of sites relative to other sites. As genetic distance tends to be correlated to physical distance between sites, we anticipate little net increase in offspring genetic diversity at recipient sites close to donor sites (e.g., Cleghorn relative to Cleghorn impact areas) but a larger increase in offspring genetic diversity with more disparate sites. Between close sites, it may be difficult to measure statistical differences in net diversity change because both sites should already be similar, at least compared to sites separated by greater distances.

4.2.5 THE USE OF HEADSTARTING IN TRANSLOCATION

The Combat Center is researching the efficacy of headstarting using long-term efforts. We may supplement these headstart data by monitoring the survivorship, growth, and health of small tortoises to be translocated. Almost nothing is known of the survivorship

of juvenile tortoises, and these data for small tortoises will provide a comparison to the wild juvenile, translocatees, residents, and controls being monitored (35 per group).

The Combat Center is holding, protecting, and feeding 235 small, WEA & SEA tortoises at the TRACRS headstart facility because these tortoises are too small to receive radiotransmitters, and would be nearly impossible to find again in the clearance surveys. We will monitor their survivorship, growth, condition, and disease status at the facility and after the translocation. These data will be compared to those of large and small translocated, resident, and control tortoises. However, the post-translocation data for holding pen tortoises will be most robust for the largest tortoises (ca. 30) that we fit with radiotransmitters prior to their translocation.

We will measure and analyze the same survivorship, movement, dispersal, behavior, burrow use, growth, and health for comparing adults and juveniles in the initial translocation. We hypothesize the headstart animal data will be similar to that of residents and controls of similar body sizes (e.g., near 120mm carapace length [CL]). We also hypothesize that juvenile survivorship, movement, and dispersal will be lower than that of adults and large juveniles (ca. 160 mm CL) of all groups for each site. This may be explained by body size effects (e.g., surface to volume ratios) if larger tortoises experience higher survivorships, and larger tortoises perform better (e.g., survivorship, body condition scores and being healthy) in drought seasons and years. These data will be analyzed via the same statistical methods as indicated above for survivorship and other research questions, but assimilation measures would be restricted to phenotypic variables since these animals will not be reproductive.We may repeat similar levels of monitoring for additional cohorts of the headstarted animals, but may release some without transmitters after headstarting them to 100-120mm CL. As described for all translocatees, we will document the survivorship and other data of these released, holding-pen tortoises when we find them opportunistically or in mark-recapture plot and transect surveys.

5.0 PHYSICAL PROCESSES OF TRANSLOCATION

5.1 TORTOISE COLLECTION AND PROCESSING

Translocation in 2016 will occur in very early spring, shortly after tortoises become active. Tortoises must have adequate time to find or dig new refuges in the unfamiliar recipient areas prior to the onset of lethal surface temperatures, roughly 43-45°C (Zimmerman et al. 1994, Karl unpub data). Translocation can only occur if ambient temperatures will not exceed 35° (95°F) within one week of release and 32°C (90°F) within three hours of release (USFWS 2011b). Translocation in future years may occur in early spring or fall, in accordance with published guidelines (USFWS 2011b).

To meet the temperature goals, we expect to translocate approximately 100 tortoises per day, completing the translocation for the 1,138 tortoises by the end of the first week in April (or earlier if temperatures are unusually warm). Authorized handlers (see Section 6.1, below) will find and collect the tortoises, which will have been radio-tracked within one week prior to facilitate finding them. All tortoises will be transported in individual,

disinfected plastic tubs with a lid and brought to local processing centers, where they will receive a visual health assessment. Any tortoise with clinical signs of disease will be transported to the TRACRS holding pen and not translocated (USFWS 2012), unless notified otherwise by USFWS. Transmitters will be removed from the tortoises that are not part of the study.

Depending on environmental conditions and hydration states, tortoises to be translocated may need to be hydrated within 12 hours before release, according to existing protocols (USFWS 2011b). The latter may include soaking in shallow water or epicoelomic injection of sterile saline or nasal/oral administration of drinking water at rates identified in USFWS (2015a). Tortoises <100mm will only be offered fluids nasally or orally. We will record the tortoise's mass before and after this procedure. Should a tortoise void, it will be re-hydrated using these techniques and rinsed thoroughly to remove predator-attracting odors.

5.2 TORTOISE TRANSPORTATION AND RELEASE

Each tortoise will be boxed and walked or driven to one of several dispatch points, where groups of tortoises will be flown by helicopter (preferably) or driven to a drop-off point at the relevant translocation area, according to the approved disposition plan for that tortoise. Biologists will carry the tortoises from the drop-off point to release them at designated release sites. During all transportation, tortoises will be kept shaded, away from hot surfaces, and padded as needed to avoid shell or internal trauma.

All tortoises will be released in a spatial distribution similar to capture distribution, placed under shrubs, and the UTM coordinates recorded. Juvenile tortoises are highly vulnerable to predation and require special consideration for successful translocation. Small tortoises will be released in the morning to avoid inadvertently attracting nocturnal predators to a release site. All juveniles will be released near inactive rodent burrows or other protective cavities.

6.0 PROCEDURES APPLICABLE TO ALL ACTIVITIES

6.1 AUTHORIZED HANDLERS

USFWS describes a single designation for biologists who can be approved to handle tortoises - "Authorized Biologist" (AB) (http://www.fws.gov/ventura/speciesinfo/protocols_guidelines/docs/dt; USFWS 2009a). Such biologists have demonstrated that they possess sufficient desert tortoise knowledge and experience to handle and move tortoises appropriately. Specific ABs will be approved to perform specific tasks, including such specialized tasks as health assessments, blood sampling, and transmitter attachment. Only those biologists authorized by USFWS and CDFW can perform specific tortoise handling tasks and clearance surveys. For USFWS, ABs are permitted to approve specific desert tortoise monitors (BMs) to assist in certain tasks, at the AB's discretion, without further approvals from USFWS. Direct supervision of monitors by the AB (i.e., voice and sight contact) is required for all clearance surveys and certain

other specialized tasks. All ABs will be authorized via permits from USFWS (TE17730-5) and CDFW (Scientific Collecting Permit [SCP] 10112).

6.2 HANDLING TECHNIQUES AND TEMPERATURES

All tortoise handling will be consistent with NREA permits and the BO (USFWS 2012) and will be accomplished by techniques outlined in the USFWS *Field Manual* (2009b: Sections 7.6-7.8), including the most recent disease prevention techniques (e.g., USFWS 2015b). Handling time will be minimized to the extent possible to avoid stress to the animals. Handling will adhere to USFWS (2010b) handling temperature guidelines; tortoises may be handled only when air temperature measured at 5 cm (2 in) above the ground (shaded bulb), is not expected to exceed 35°C (95°F) during the handling session. If the air temperature exceeds 35°C during handling or processing, desert tortoises will be kept shaded in an environment where the ambient air temperatures do not exceed 32.7 °C (91°F) and air temperature does not exceed 35°C.

6.3 HEALTH ASSESSMENTS

Methods detailed in *Health Assessment Procedures for the Desert Tortoise (Gopherus agassizii): a Handbook Pertinent to Translocation* (USFWS 2016b) will be followed for all sampling techniques and equipment. Health assessments and tissue collection will not occur until after 15 May or four weeks from the time individual tortoises have become active after winter brumation, unless approved by USFWS (USFWS 2015a). *Mycoplasma agassizii*, *M. testudineum*, and herpesvirus are the major pathogens currently being sampled, but other pathogens may be tested as their evaluation techniques become validated for desert tortoises. Blood samples will be taken via subcarapacial venipuncture; oral mucosa will be sampled with oral swabs. A physical examination, including the oral cavity, will focus on clinical signs of disease, body condition, and ectoparasites. Careful attention will be paid to sample collection, processing, storage, shipping, and disease transmission to optimize the sampling program and minimize any risks to tortoises. If a tortoise voids, it will be re-hydrated using permitted methods (USFWS 2015a).

6.4 TRANSMITTERS

Larger tortoises (≥160 mm in carapace length [MCL]) will receive Holohil RI-2B transmitters (24 mm wide by 11 mm thick; 15 g; www.holohil.com). Large juvenile tortoises will receive small RI-2B transmitters (6 g) and small juveniles that are large enough to transmitter will be affixed with Holohil PD2s (2-4 g). All transmitters will be appropriate for the tortoise's size, shell shape, and mass, and in no case will be greater than 10% of the tortoise's mass. Transmitters will be epoxied to a carapace scute using five-minute gel epoxy. For males and juveniles, transmitters generally will be affixed to the fifth vertebral; for females and large juveniles believed to be females, transmitters will be affixed to the anterior carapace in the most appropriate location for the animal's shell shape that will preclude interference with righting. The transmitter antenna will be fed through a plastic sheath with a diameter slightly greater than the antenna. This sheath

will be epoxied low on the carapace, just above the marginal scutes, and split at the scute seams (growth areas). This technique will permit the antenna to slip freely in the sheath, thereby precluding distortion on growing tortoises. Because the antenna sheath may be tightly curved on a very small tortoise, potentially constricting antenna movement with subsequent growth distortion, much more of the antenna will remain free on small tortoises, including only being attached on the fifth vertebral to minimize torque on the battery. Transmitters will be changed as necessary, earlier than battery life suggests or when the units appear to be malfunctioning. We will record transmitter details (manufacturer, serial number, frequency, installation, and all change dates) for all tortoises and submit this spreadsheet with the annual reports to USFWS and CDFW.

6.5 TORTOISE MORTALITIES

Should a transmittered or translocated tortoise die, the cause of death will be determined to the extent possible. NREA will submit this information and the tortoise location to USFWS and CDFW verbally within 48 hours, or via e-mail within five business days. In the annual report, (see Section 8.0, below), the Combat Center will provide a detailed accounting of all mortalities, circumstances, and actions implemented to prevent similar instances in the future (USFWS 2012). Fresh carcasses may be salvaged and necropsied upon direction from NREA.

7.0 FUTURE CLEARANCES

Fencing is not proposed for the high and medium impact areas to exclude tortoises from entering the impact areas. Consequently, additional clearance surveys are required in subsequent years to minimize tortoise losses. During each year, clearance surveys will be performed on any square kilometers in the impact areas that had three or more tortoises in the previous clearance (USFWS 2012). All clearances will be consistent with methods described above. For any tortoise found, the standard measurements and assessments that were used on other tortoises will be completed and the tortoise numbered and transmittered. All tortoises that are suitable candidates for translocation, based on the health assessment, would be translocated to designated recipient sites in accordance with the approved disposition plan for each tortoise.

8.0 REPORTING

On January 31 of each year (USFWS 2012), the Combat Center will provide a full accounting of all activities associated with the translocation program, both for the calendar year and cumulatively, plus analyses undertaken relative to the effectiveness of the translocation program. The report will include metadata consistent with NREA's recovery permits (TE-017730-5 and SCP 10112). The Combat Center will also engage USFWS and CDFW via telephone at least quarterly to keep the agencies involved and informed, and implement contingency measures in the event unanticipated problems arise (e.g., mortality events, heightened predation).

9.0 LITERATURE CITED

Averill-Murray, R. and B.E. Hagerty. 2014. Translocation relative to spatial genetic structure of the Mojave desert tortoise, *Gopherus agassizii*. Chelonian Conservation and Biology 13(1):35-41.

Avery, H. 1998. Nutritional ecology of the desert tortoise (*Gopherus agassizii*) in relation to cattle grazing in the Mojave Desert. Dissertation, University of California, Los Angeles. 163 pp.

Berry, K.H. 1996. Memo to BLM Area manager, Molly Brady, regarding observations on permanent BLM study plots between 1979 and 1996. Riverside, CA.

--- and M.M. Christopher. 2001. Guidelines for the field evaluation of desert tortoise health and disease. J. Wildlife Diseases 37:427-450.

Boarman, W.B. 2002. Threats to desert tortoise populations: a critical review of the literature. Unpub. report prepared for the West Mojave Planning Team and the Bureau of Land Management. 86 pp.

Boarman, W.B. Kristan, III, and A.P. Woodman. 2008. Neither here nor there: current status of Sonoran desert tortoise populations in Arizona. Paper presented at the 2008 Desert Tortoise Council Symposium, Las Vegas, NV.

Burnham, K.P. and D.R. Anderson. 2002. Model Selection and Multimodel Inference, 2nd ed. Springer, New York, NY.

California Energy Commission, California Department of Fish and Wildlife, U.S. Bureau of Land Management and U.S. Fish and Wildlife Service. 2014. Desert Renewable Energy Conservation Plan (DRECP) and Environmental Impact Statement.

Chapman, D.G. 1951. Some properties of the hypergeometric distribution with applications to zoological censuses. Univ. of California Publ. in Statistics 1:131-160.

Chavez, A. 2015. Range Conservationist, Barstow Field Office. Discussion with E.L. Smith regarding future development in the Ord-Rodman ACEC (DWMA), 11 March 2015.

Cook, P. 2015. California Minerals, Off-Road Recreation and Conservation Act (CMORCA). HR 3668. EDW15157. Presented to the 114th Congress, 1st Session. 130 pp.

Davy, C.M., T. Edwards, A. Lathrop, M. Bratton, M. Hagan, B. Henen, K.A. Nagy, J. Stone, L. S. Hillard and R.W. Murphy. 2011. Polyandry and multiple paternities in

the threatened Agassiz's desert tortoise, *Gopherus agassizii*. Conservation Genetics 12:1313-1322.

Dhondt, A. 1988. Carrying capacity: a confusing concept. Acta Oecologica 9(4):337-346.

Edwards, R.Y. and C.D. Fowle. 1955. The concept of carrying capacity. Trans. of the North American Wildlife and Natural Resources Conference 20:589-602.

Ellison, L. 1960. Influence of grazing on plant succession of rangelands. Botanical Review 26:1-78.

Esque, T.C., K.E. Nussear, K.K. Drake, A.D. Walde, K.H. Berry, R.C. Averill-Murray, A.P. Woodman, W.I. Boarman, P.A. Medica, J. Mack and J.S. Heaton. 2010. Effects of subsidized predators, resource variability, and human population density on desert tortoise populations in the Mojave Desert. Endangered Species Research 12:167-177.

Feinstein, D. 2015. California Desert Conservation and Recreation Act ("Feinstein Bill"). EDW15157. Presented to the 114th Congress, 1st Session. 149 pp.

Field, K.J., C.R. Tracy, P.A. Medica, R.W. Marlow, and P.S. Corn. 2007. Return to the wild. Translocation as a tool in conservation of the desert tortoise (*Gopherus agassizii*). Biological Conservation 136:232-245.

Hagerty, B.E., K.E. Nussear, T.C. Esque, and C.R. Tracy. 2011. Making molehills out of mountains: landscape genetics of the Mojave Desert tortoise. Landscape Ecology 26:267-280.

Henen, B.T. and M.D. Hofmeyr. 2003. Viewing chelonian reproductive ecology through acoustic windows: cranial and inguinal perspectives. J. Experimental Zoology 297A:88-104.

Henen, B.T., and O.T. Oftedal. 1998. The importance of dietary nitrogen to the reproductive output of female desert tortoises (*Gopherus agassizii*). Proceedings of the Second Comparative Nutrition Society Symposium. 1998: 83-88.

Jones, R. 2002. Status of desert tortoise populations in the California Desert. California Department of Wildlife. Unpub. paper. 3 pp.

Karl, A.E. 2002. Desert tortoise abundance in the Fort Irwin Training Center Land Acquisition Area: second year studies. Unpublished report prepared for Charis Corporation, Temecula, California. 46 pp plus appendices.

---. 2004. Drought: acute effects and impacts to recovery of the desert tortoise. Paper presented at the 2004 Desert Tortoise Council Symposium, Las Vegas, NV.

---. 2007. Hyundai Motor America Proving Grounds desert tortoise translocation study. 2006 annual report. Prepared for Hyundai America Technical Center, Inc. 19 pp.

---. 2010. Ridgecrest Solar Power Project. Analysis of population and species impacts to the desert tortoise, due to the siting of this project in its current location. Docketed 29 April 2010. 19 pp.

--- and Resource Design Technology, Inc. 2007. Mesquite Regional Landfill. Initial desert tortoise clearance-October 2005. Submitted to the Los Angeles County Sanitation Districts, Whittier, CA. 28 pp plus attachments.

--- and B.T. Henen. 2011. United States Marine Corps Land Acquisition and Airspace Establishment general translocation plan for desert tortoises. Prepared for NREA, MAGTFTC MCAGCC, Twentynine Palms, CA. 55 pp.

Kiva Biological Consultants. 2008. Summary report for two desert tortoise trend study plots, health assessments, and focal observations conducted on the Marine Corps Air Ground Combat Center Spring 2008. Prepared for Naval Facilities Engineering Command Southwest, San Diego, California. 39 pp.

---. 2009. Preliminary Report for Mark-Recapture Plots. 27 July 2009 letter to Brian Henen, NREA. 7 pp.

---. 2013. Summary report for health assessments conducted on desert tortoises at the Marine Corps Air Ground Combat Center, Bullion Training Area, Fall 2013. Prepared for NREA, MAGTFTC MCAGCC. 11 pp.

Loehr, V.J.T., B.T. Henen, and M.D. Hofmeyr. 2004. Reproduction of the smallest tortoise, the Namaqualand speckled padloper, *Homopus signatus signatus*. Herpetologica 60:444-454.

Longshore, K.M., J.R. Jaeger and J.M. Sappington. 2003. Desert tortoise (*Gopherus agassizii*) survival at two eastern Mojave Desert sites: death by short-term drought? Journal of Herpetology 37(1):169-177.

Lovich, J. and D. Bainbridge. 1999. Anthropogenic degradation of the Southern California Desert ecosystem and prospects for natural recovery and restoration. Environmental Management 24(3):309-326.

---. C.B. Yackulic, J. Freilich, M. Agha, M. Austin, K.P. Meyer, T. R. Arundel, J. Hansen, M.S. Vamstad and S.A. Root. 2014. Climatic variation and tortoise survival: has a desert species met its match? Biological Conservation 169:214-224.

McLuckie, A.M., M.R.M. Bennion, R.A. Fridell, and R. Radant. 2006. Status of the desert tortoise in the Red Cliffs Desert Reserve. Paper presented at the 2006 Desert Tortoise Council Symposium, Las Vegas, NV.

Murphy, R.W., K.H. Berry, T. Edwards, and A.M. McLuckie. 2007. A genetic assessment of the recovery units for the Mojave population of the desert tortoise, *Gopherus agassizii*. Chelonian Conservation Biology 6(2):229-251.

Nussear, K.E. 2004. Mechanistic investigation of the distributional limits of the desert tortoise, *Gopherus agassizii. Ph.D. Diss.* University of Nevada, Reno.

Nussear, K.E. C.R. Tracy, P.A. Medica, D.S. Wilson, R.W. Marlow and P.S. Corn. 2012. Translocation as a conservation tool for Agassiz's Desert Tortoises: survivorship, reproduction and movements. The Journal of Wildlife Management 76:1341-1353.

Otahol, C. 2015a. Biologist, Bureau of Land Management, Barstow Field Office. Discussion with E.L. Smith regarding future development in the Ord-Rodman ACEC (DWMA), 9 March 2015.

---. 2015b. Biologist, Barstow Field Office. E-mail to A. Karl 14 September 2015.

Peterson, C.C. 1994. Different rates and causes of high mortality in two populations of the threatened desert tortoise *Gopherus agassizii.* Biol. Conserv. 70(2):101-108..

Rees, W.E. 1996. Revisiting carrying capacity: area-based indicators of sustainability. Population and Environment: a Journal of Interdisciplinary Studies 17(3): 195-215.

Rich, J.T., J.G Neely, F.C. Paniello, C.C.J. voelker, B. Nussenbaum and E.W. Wang. 2010. A practical guide to understanding Kaplan-Meier curves. Otolaryngol Head Neck Surg. 143:331-336.

San Bernardino County. 2015. Property tax information. Available online at http://www.mytaxcollector.com/trDefault.aspx. Accessed 16 October 2015.

Symons, K. 2015. Field Manager, Barstow BLM Field Office. Agency coordination meeting on 1 July 2015.

TEC. 2011. Draft displaced off-highway vehicle recreation study. Prepared for the EIS for land acquisition and airspace establishment. Marine Corps Air Ground Combat Center, Twentynine Palms, CA. 102 pp.

TRW. 1999. Movement patterns of desert tortoises at Yucca Mountain. Unpubl. rept. to U.S. Department of Energy, Yucca Mountain Site Characterization Office, North Las Vegas, NV. Document No. B00000000-01717-5705-00049.

Turner, F.B. and K.H. Berry. 1984. Population ecology of the desert tortoise at Goffs, California. Unpub. rept. to Southern California Edison Co. No. 84-RD-4. 63 pp.

United States Bureau of Land Management. 2005. Final Environmental Impact Report and Statement for the West Mojave Plan, a Habitat Conservation Plan and California Desert Conservation Area Plan amendment. BLM California Desert District Office, Moreno Valley, CA.

---. 2006. Environmental assessment livestock grazing allotment authorization: EA Number EA-680-06-78. Allotment Name: Ord Mountain. BLM Barstow Field Office. 84 pp.

---. 2015. National Conservation Lands. Available online at www.blm.gov/ca/st/en/prog/blm_special_areas.html.

United States Department of the Navy. 2011a. Final Biological Assessment Land Acquisition and Airspace Establishment to support large-scale Marine Air Ground Task Force live-fire and maneuver training. July 2011. Prepared by AMEC Earth and Environmental, Inc.

---. 2011b. Final Environmental Impact Statement Land Acquisition and Airspace Establishment to support large-scale Marine Air Ground Task Force live-fire and maneuver training. October 2011. Prepared by TEC, Inc.

United States Fish and Wildlife Service. 1994a. Desert Tortoise (Mojave Population) Recovery Plan. U.S. Fish and Wildlife Service, Portland, OR. 73 pp. plus appendices.

---. 1994b. Final rule: determination of Critical Habitat for the Mojave population of the desert tortoise. FR 59(26):5820-5866.

---. 2008. Environmental Assessment to implement a desert tortoise recovery plan task: reduce common raven predation on the desert tortoise. Ventura Field Office. 156 pp.

---. 2009a. Desert tortoise field manual. Available online at (http://www.fws.gov/carlsbad/PalmSprings/DesertTortoise.html)

---. 2009b. Range-wide monitoring of the Mojave Population of the desert tortoise: 2007 annual report. Desert Tortoise Recovery Office, Reno, NV. 77 pp.

---. 2010. Preparing for any action that may occur within the range of the Mojave desert tortoise (*Gopherus agassizii*). U.S. Dept. of the Interior, USFWS, Ventura Field Office, Ventura, California. Available online at: http://www.fws.gov/carlsbad/PalmSprings/DesertTortoise.html.

---. 2011a. Revised recovery plan for the Mojave Population of the desert tortoise (*Gopherus agassizii*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. 222 pp.

---. 2011b. Translocation of Mojave desert tortoises from project sites: plan development guidance. Desert Tortoise Recovery Office, Reno, NV. 27 pp.

---. 2012. Biological opinion for land acquisition and airspace establishment to support large-scale Marine Air Ground Task Force live-fire and maneuver training, Twentynine Palms, California (8-8-11-F-65). Ventura Fish and Wildlife Office, Ventura, California. 129 pp.

---. 2015. Range-wide monitoring of the Mojave desert tortoise (*Gopherus agassizii*): 2013 and 2014 annual reporting. Prepared by the Desert Tortoise Recovery Office, Reno, NV. 46 pp.

---. 2016a. Translocation of Mojave Desert Tortoises from Project Sites: Plan Development Guidance (draft). U.S. Fish and Wildlife Service, Las Vegas, NV.

---. 2016b. Health Assessment Procedures for the Mojave Desert Tortoise (*Gopherus agassizii*): A Handbook Pertinent to Translocation. Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada.

URS Corporation. 2012. California Natural Diversity Data Base submission for tortoises at the proposed Siberia Solar Site. La Jolla, CA.

Zar, J.H. 1999. Biostatistical Analysis, 4th Edition. Prentice-Hall, Inc., Upper Saddle River, New Jersey, USA. Pages xii + 663 + App1 to I23.

Zimmerman, L.C., M.P. O'Connor, S.J. Bulova, J.R. Spotila, S. J. Kemp, and C.J. Salice. 1994. Thermal ecology of desert tortoises in the eastern Mojave Desert: seasonal patterns of operative and body temperatures, and microhabitat utilization. Herp. Monogr. 8:45-59.

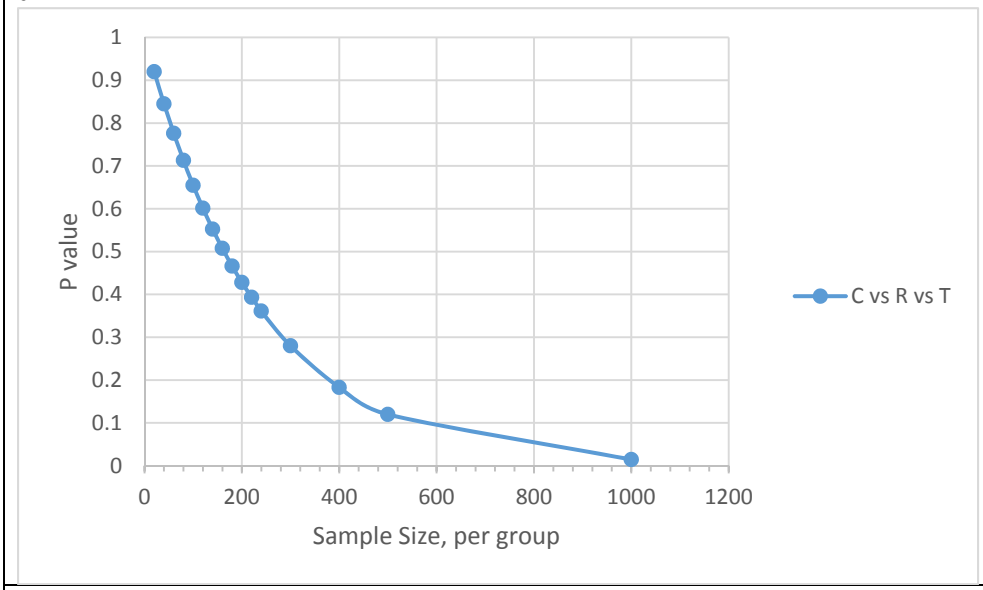
Appendix A: Sample Size and Power Analysis

The Biological Opinion (USFWS 2012) estimated the required sample size, 675 [with 190 adult and 35 juveniles in each group, controls (C), residents (R), and translocatees (T)], necessary to evaluate the survivorship and other measures on animals to be monitored via radiotelemetry. Kaplan-Meier survivorship analyses, with log-rank test comparisons among groups, indicate 900 monitored tortoises (i.e., 900 in each group) are necessary to distinguish statistically the annual survivorship rates of the C, R, and T as modelled for the respective 19%, 21% and 25% mortality rates experienced in 2008, a drought year in the Mojave Desert (Esque et al. 2010; see Figure A1). A sample size that large is prohibitive, and likely explains the lack of difference among groups in the 2008 study. If the model reduces mortality of the Controls to 10% (perhaps due to a year of moderate rainfall), but not the Resident or Translocatee mortality, the sample size required is reduced greatly (ca. n=60 to 120 per group depending on the two or three group comparisons; Figure A2). Sample sized is reduced further to 40 or 60 animals per group per log-rank test (Figure A3) when modelling 5% mortality in Controls (perhaps a high rainfall year) with the same mortality for Residents and Translocatees. Under the latter two scenarios, the sample size of 675 will be able to document statistical differences as a whole, and among most paired sites if at least 40 or 60 animals are monitored per group. Sites with 20 animals or less per group would produce statistically significant results only if there are large differences between groups (more extreme differences than the 5% for Controls and 25% for Translocatees).

Similarly, data for 675 tortoises will provide high power (> 0.8 or 0.9, conventional values, and higher) in Analyses of Variance (ANOVA) on parameters measured for each individual (e.g., ratio-scale parameters such as space use and overlap; Figure A4) but compared for effects among the three groups and several sites. The example modelled results for overlap of space use among tortoises in another recent translocation (Farnsworth et al. 2015; but see Figure A4 for details). ANOVA provide post-hoc tests to evaluate differences among each group and site (e.g., all sites whether recipient or control); repeated measures ANOVA (not modelled) provide even stronger analyses. Sample sizes of 675 should have statistical power approaching the maximum (one) for many individual-based, ratio-scale measures (e.g., body condition, home range, or home range overlap), with post-hoc results identifying statistical differences among individual sites and groups.

Figure A1. Relationship of *p*-value to sample size for each of three groups, Controls (C), Residents (R) and Translocatees (T), when annual mortalities are 19%, 21% and 25% respectively (percentage examples from a drought year, Esque et al. 2010). Survival analyses based on equal samples sizes per group, and assume a 5% censorship (loss of animals to transmitter failure or emigration; % estimate approximate from MCAGCC's current monitoring effort for adults). Model mortalities occurred in March, May, July and October, i.e., parts of the active season, and were modelled for the same months among groups. Panels indicate the *p*-values for the log-rank test comparison a) among the three groups (C, R, and T) and b) between the C and T. *P*-values drop below 0.05 when the total number of radiotelemetry-monitored animals per group reached 1000.

a.



b.

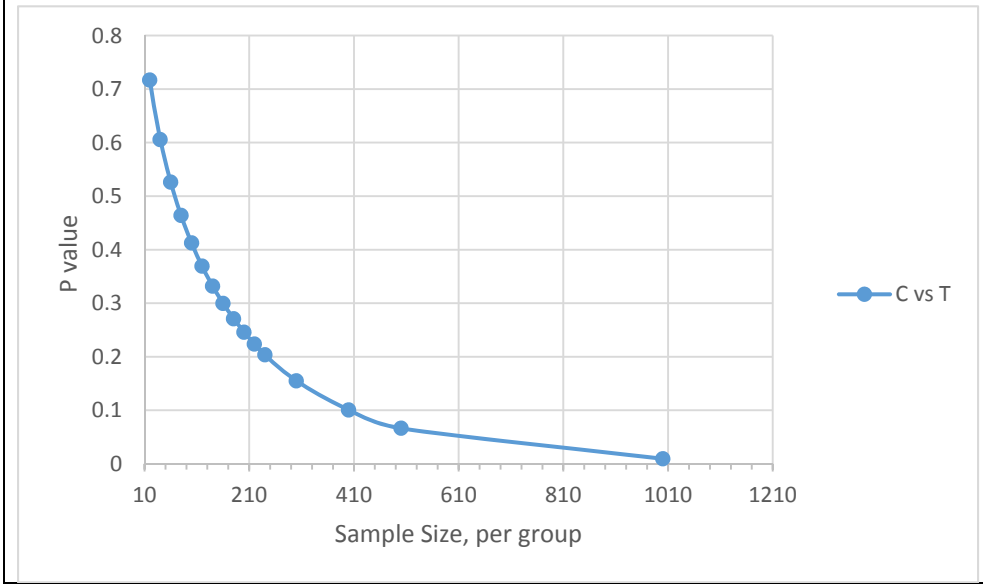
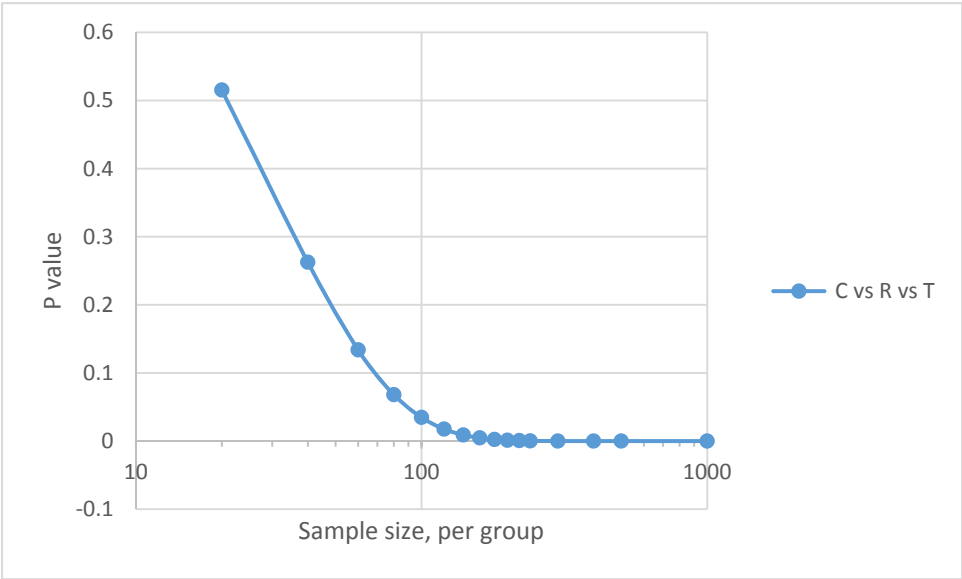


Figure A2. Relationship of *p*-value to sample size for all three groups, Controls (C), Residents (R), and Translocatees (T) when annual mortalities are 10%, 21%, and 25%, respectively--percentages that might occur for a moderate rainfall year for controls. Values are the same as Figure A1 except that Controls are at 10% mortality and occurring in only March and July. Survival analyses based on equal sample sizes per group, and assume a 5% censorship (loss of animals to transmitter failure or emigration). Other group mortalities modelled to occur in March, May, July and October, i.e., parts of the active season, and were modelled for the same months among groups. Panels indicate the *p*-values for the log-rank test comparison a) among the three groups (C, R, and T) and b) between two groups (C vs T or C vs R). *P*-values drop below 0.05 when the number of radiotelemetry-monitored animals exceeded 100 (C vs T vs R), 60 (C vs T) or 120 (C vs R) per group.

a.



b.

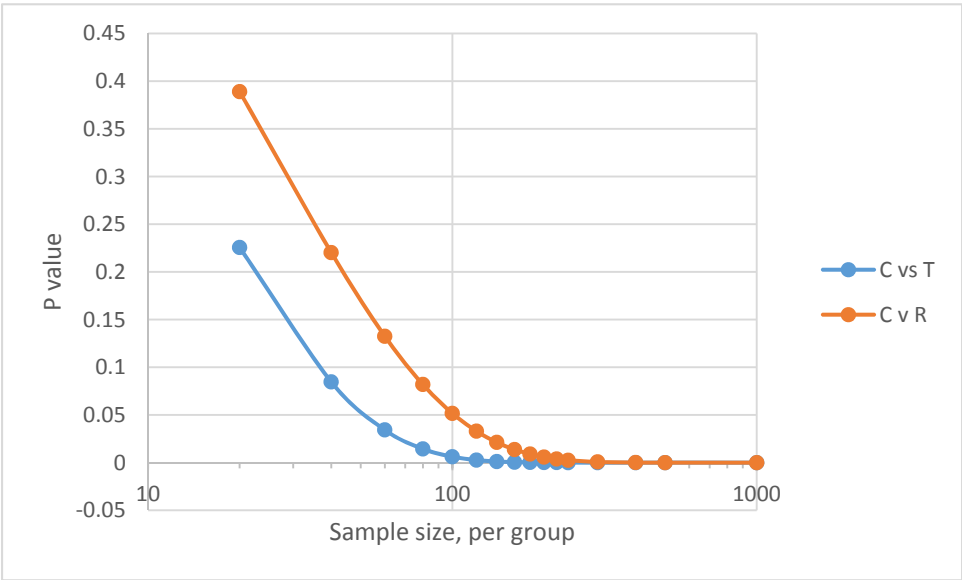
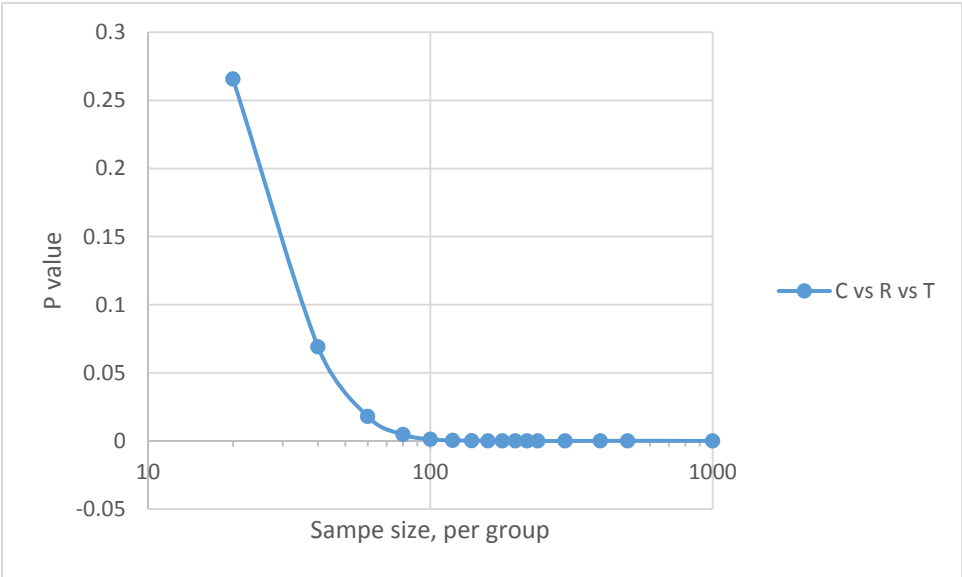


Figure A3. Relationship of *p*-value to sample size for all three groups, Controls (C), Residents (R) and Translocatees (T) when annual mortalities are 5%, 21% and 25% respectively, percentages for a modelled above-average rainfall year for controls. Values are the same as Figure A1 except that Controls are at 5% mortality and occurring in only March. Survival analyses based on equal samples sizes per group, and assume a 5% censorship (loss of animals to transmitter failure or emigration). Other mortalities modelled to occur in March, May, July and October, parts of the active season, and were modelled for the same months among groups. Panels indicate the *p*-values for the log-rank test comparison a) among the three groups (C, R, and T) and b) between two groups (C vs T or C vs R). *P*-values drop below 0.05 when the number of radiotelemetry-monitored animals exceeded 60 (all three groups at 60 per group), 40 (C vs T) or 40 (C vs R) per group.

a.



b.

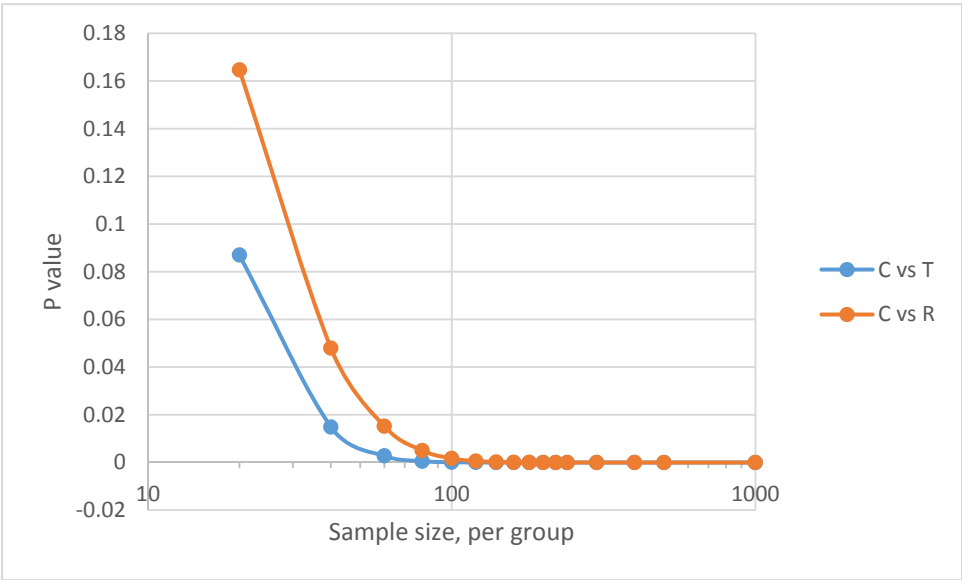
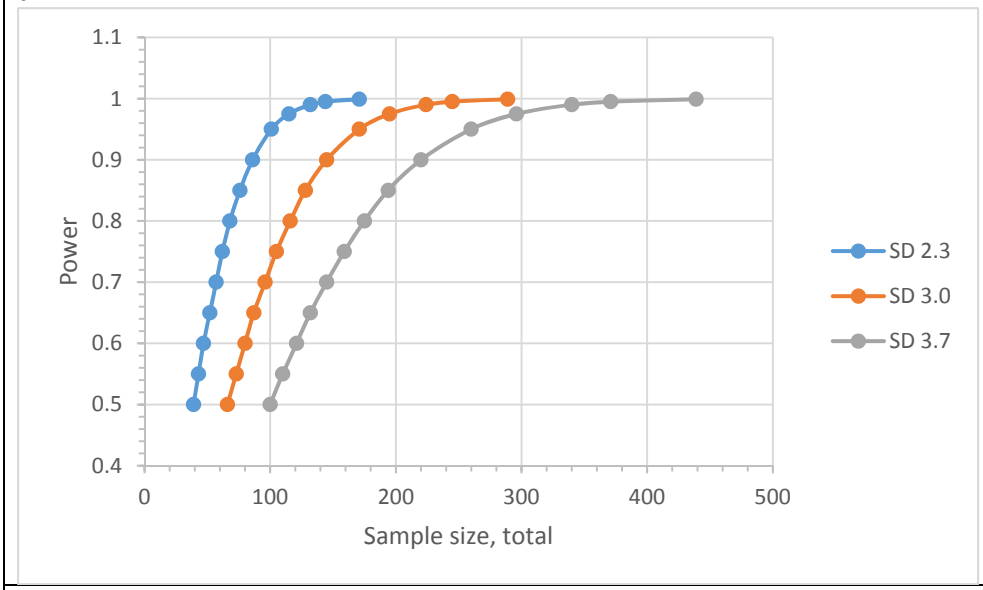
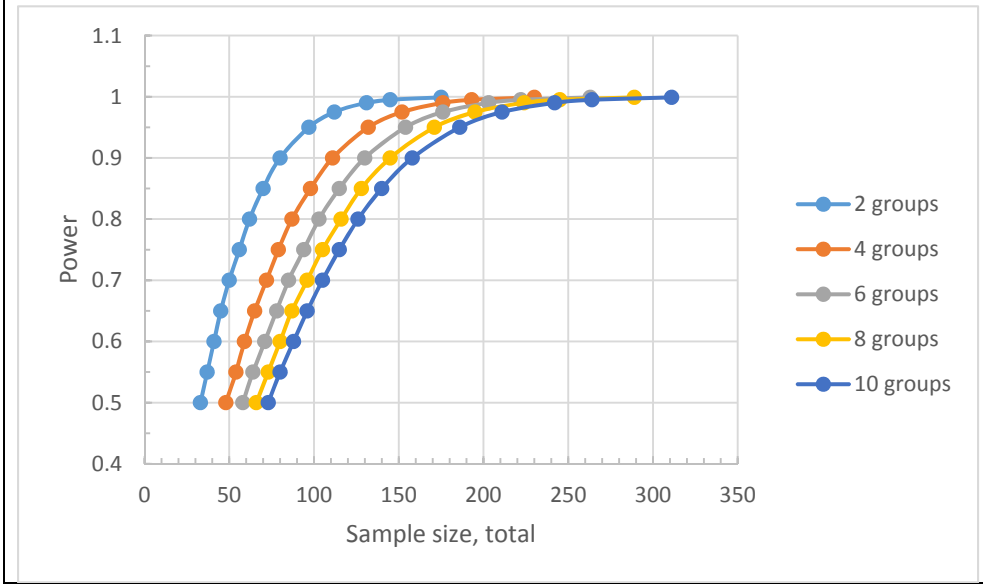


Figure A4. Power of ANOVA for detecting group differences among percent overlap in activity areas (i.e., utilization distributions in Farnsworth et al. 2015) as affected by total sample size (all groups in total for each ANOVA), average standard deviation of groups (panel a) and number of groups studied (panel b). All comparisons are for detecting a 1.5 difference in mean percent overlap, and an alpha or $p \leq 0.05$. Model represents analysis compiled from individual animal data, and is only crudely estimated from Figure 4 of Farnsworth et al. 2015. Commonly used power values are 0.8 or 0.9. For panel a, power values of 0.8 and 0.9 are reached at samples sizes of 68 & 86 (SD=2.3), 116 & 145 (SD=3.0) and 175 & 220 (SD=3.7). For panel b, power values for 0.8 and 0.9 are reached at samples sizes of 62 & 80 (2 groups), 87 & 111 (4 groups), 103 & 130 (6 groups), 116 & 145 (8 groups, and 126 & 158 (10 groups).

a.

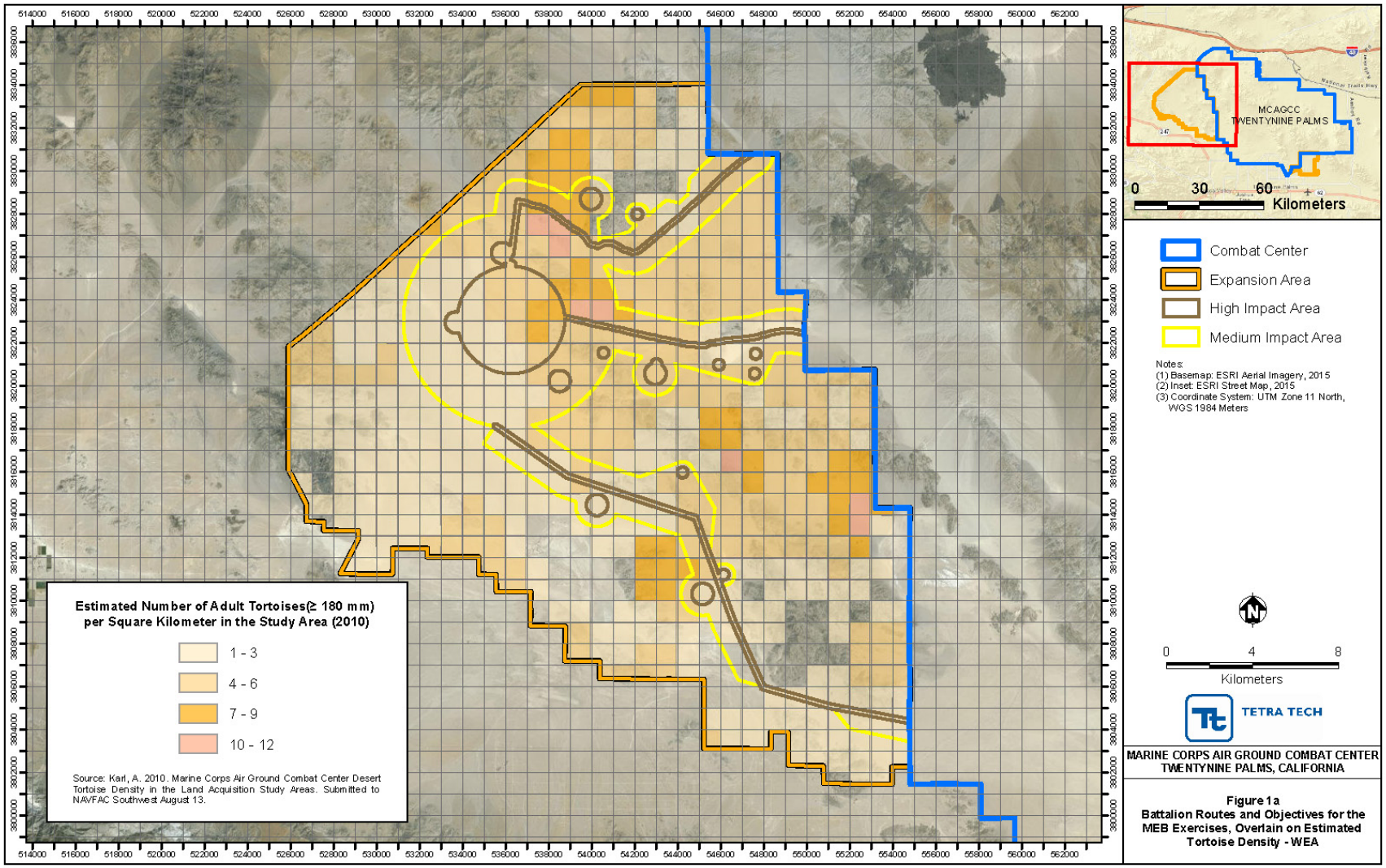


b.



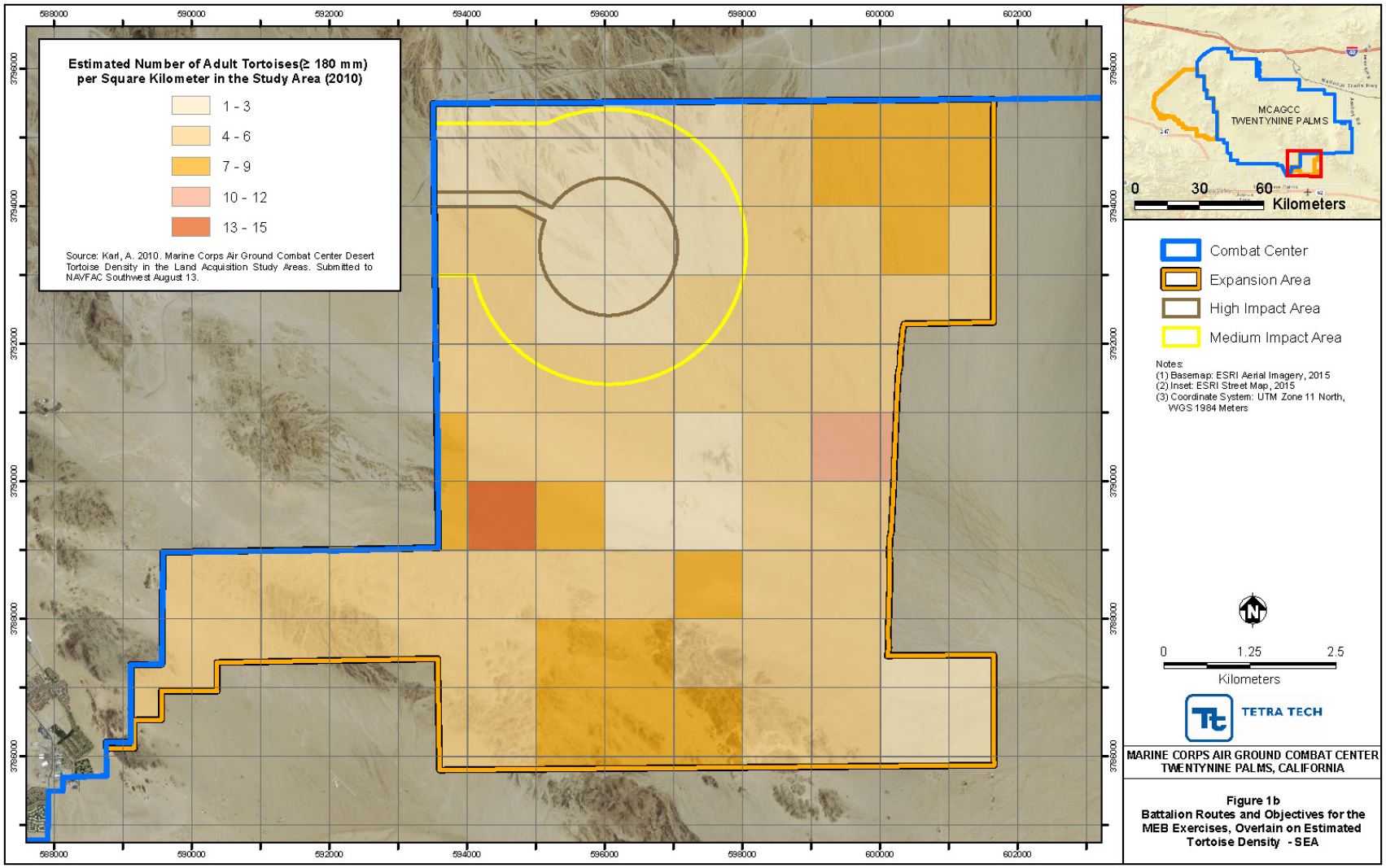
ATTACHMENT 1

FIGURES



MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 1a
Battalion Routes and Objectives for the MEB Exercises, Overlain on Estimated Tortoise Density - WEA



MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 1b
Battalion Routes and Objectives for the MEB Exercises, Overlain on Estimated Tortoise Density - SEA

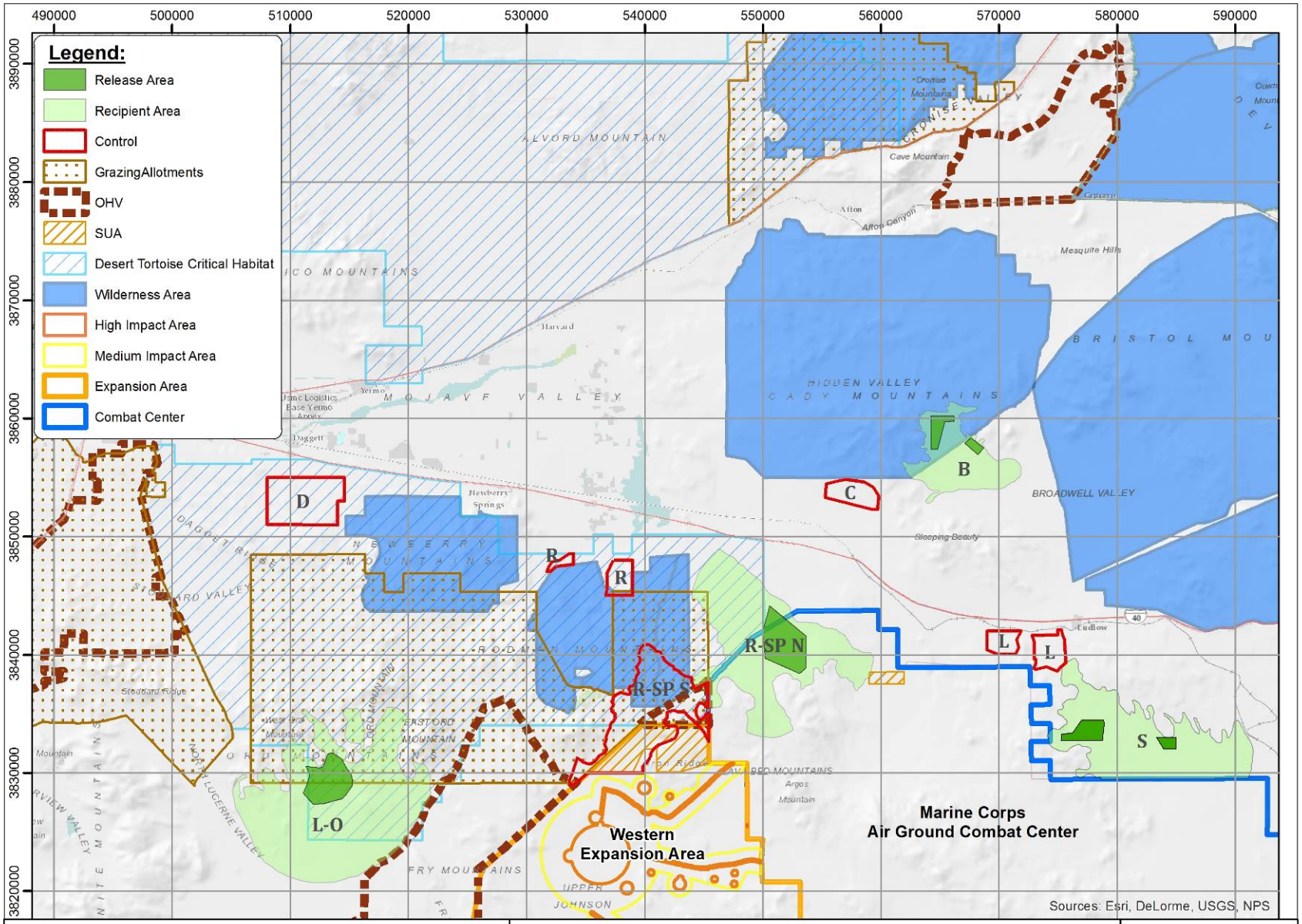


Figure 2a
Translocation Sites for the MCAGCC Expansion - WEA

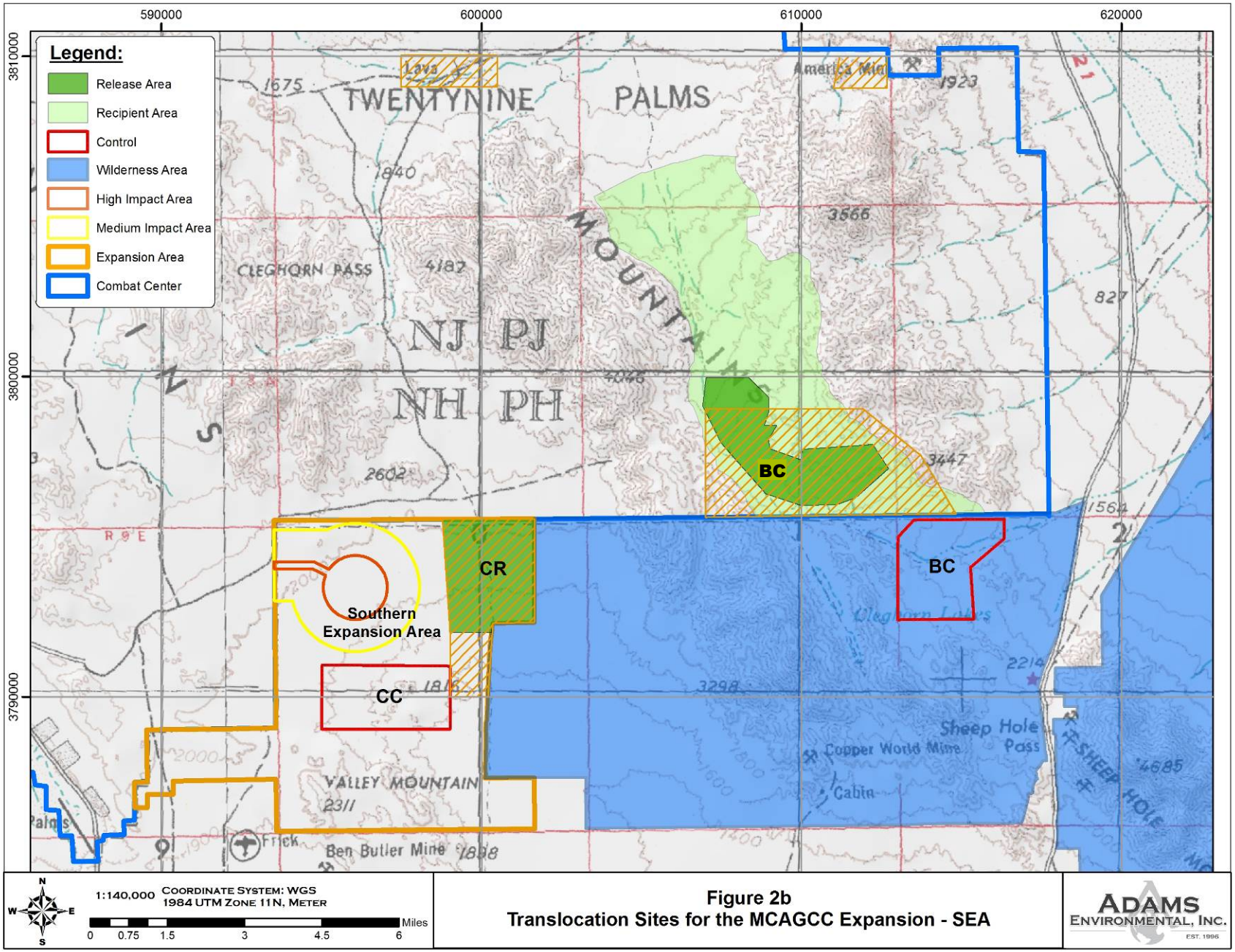
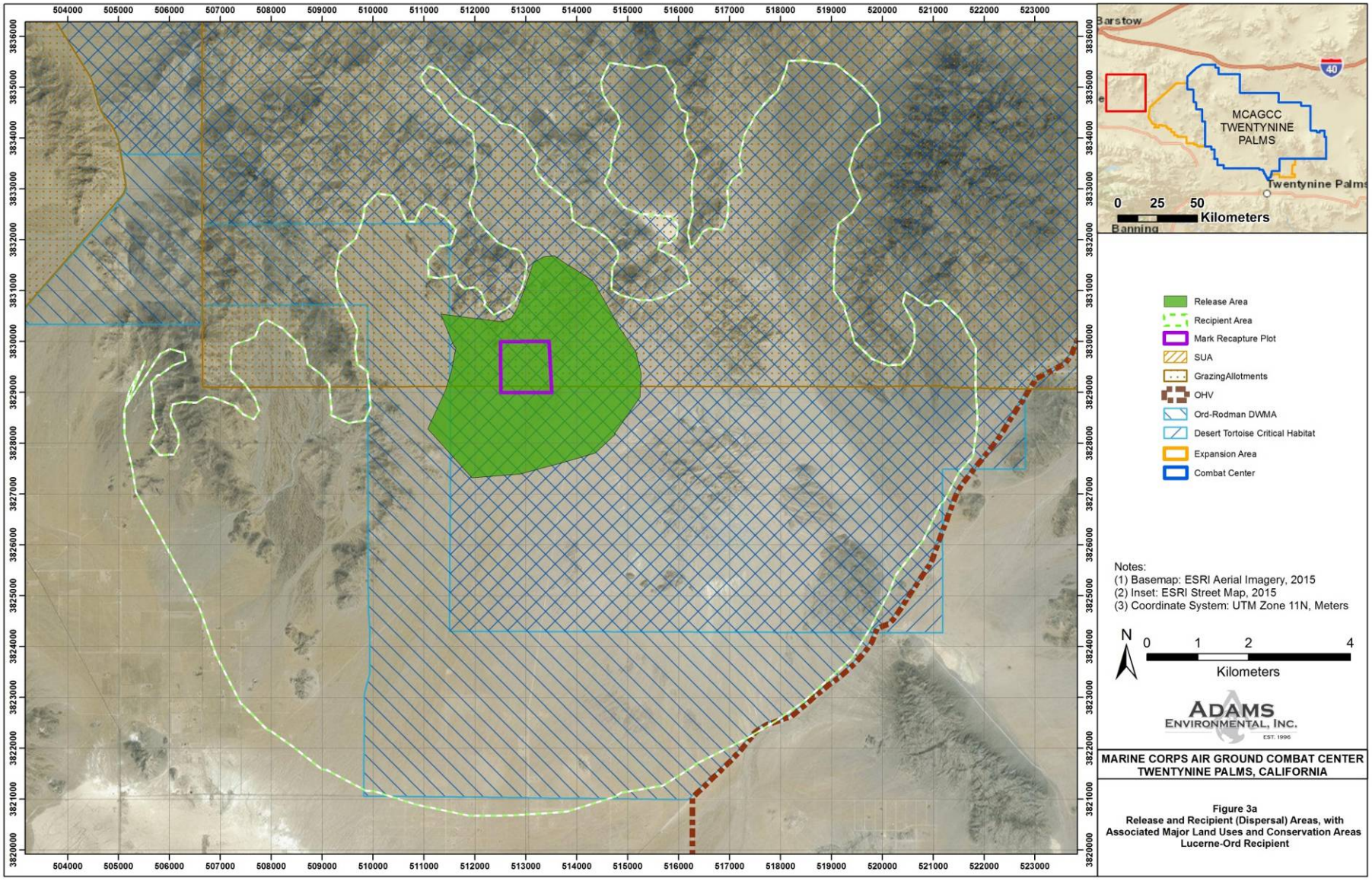


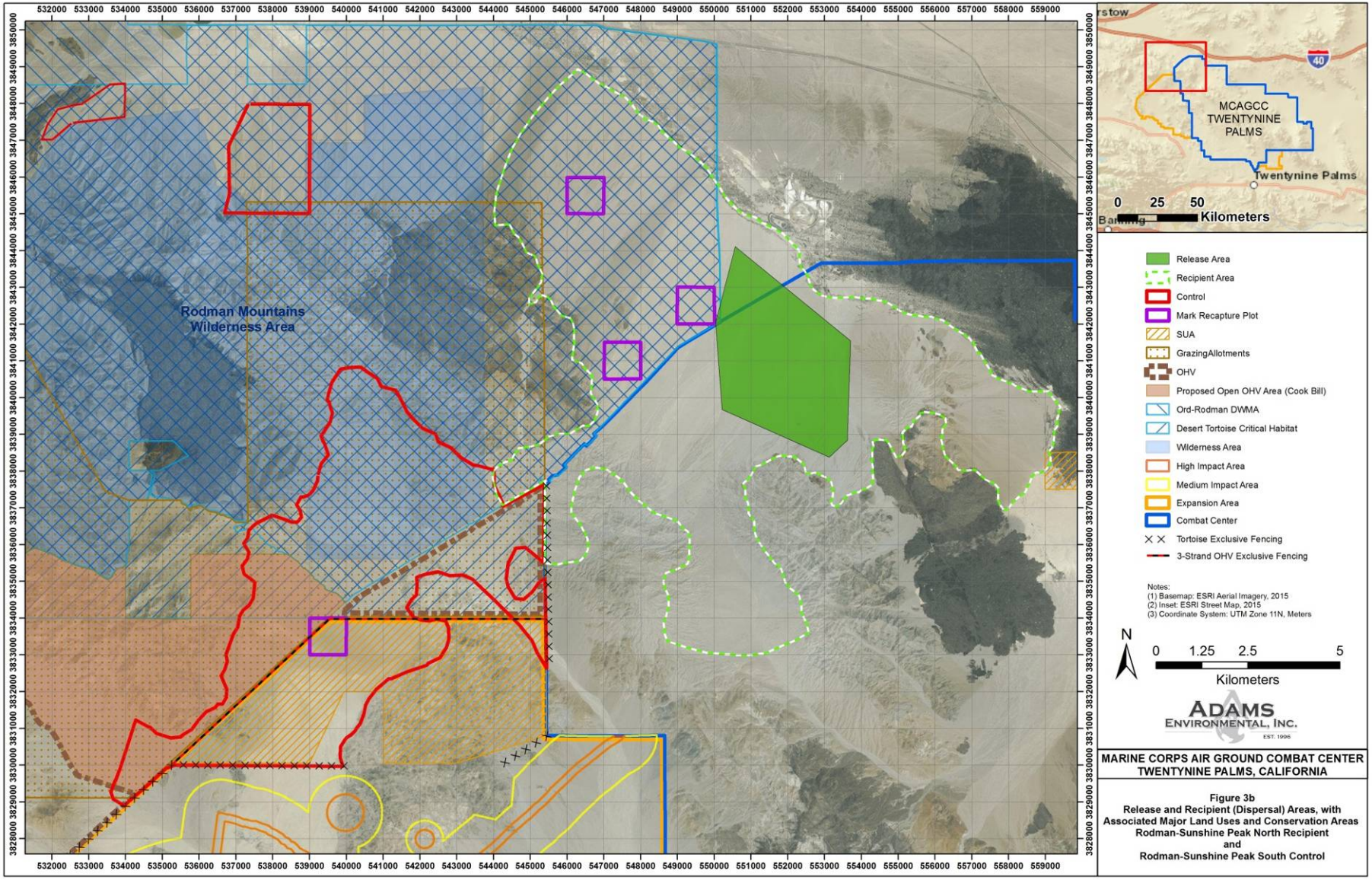
Figure 2b
Translocation Sites for the MCAGCC Expansion - SEA

ADAMS ENVIRONMENTAL, INC.
EST. 1996



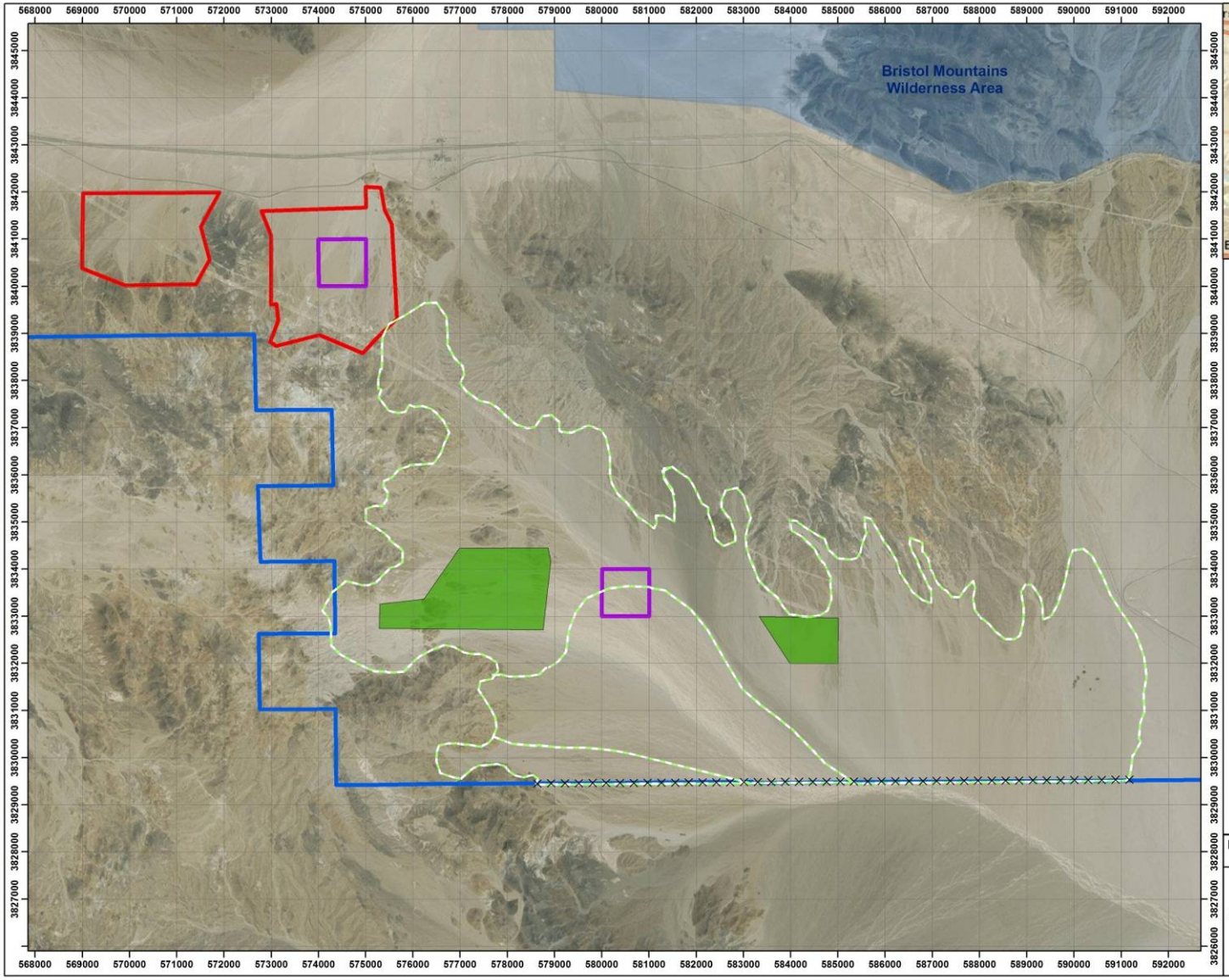
MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

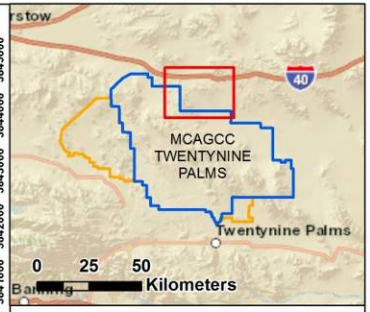
Figure 3a
Release and Recipient (Dispersal) Areas, with Associated Major Land Uses and Conservation Areas
Lucerne-Ord Recipient



MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 3b
Release and Recipient (Dispersal) Areas, with Associated Major Land Uses and Conservation Areas
Rodman-Sunshine Peak North Recipient
and
Rodman-Sunshine Peak South Control





Release Area
Recipient Area
Control
Mark Recapture Plot
Wilderness Area
Expansion Area
Combat Center

Notes:
(1) Basemap: ESRI Aerial Imagery, 2015
(2) Inset: ESRI Street Map, 2015
(3) Coordinate System: UTM Zone 11N, Meters

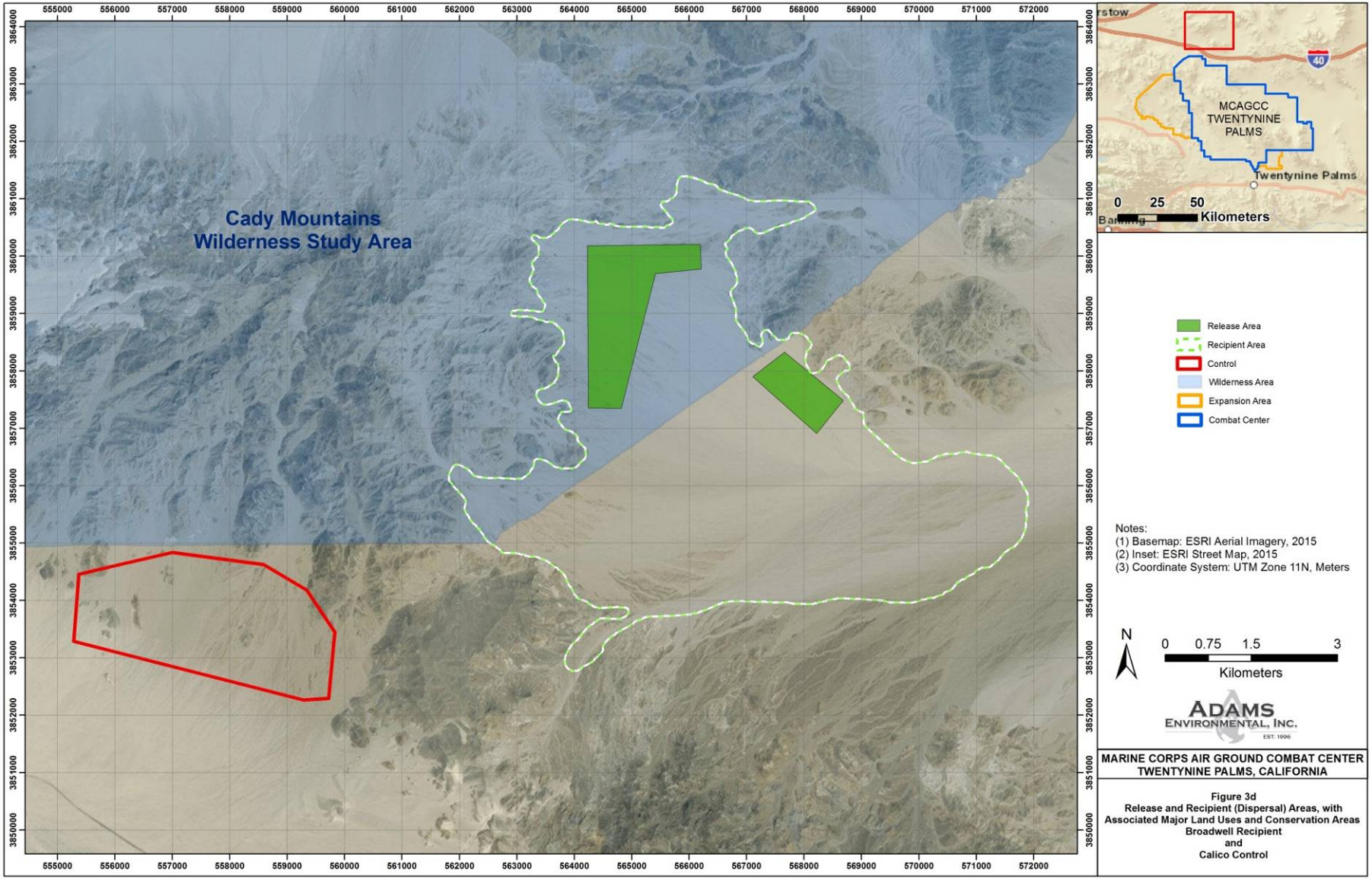
N

0 1 2 4
Kilometers

ADAMS ENVIRONMENTAL, INC.
EST. 1996

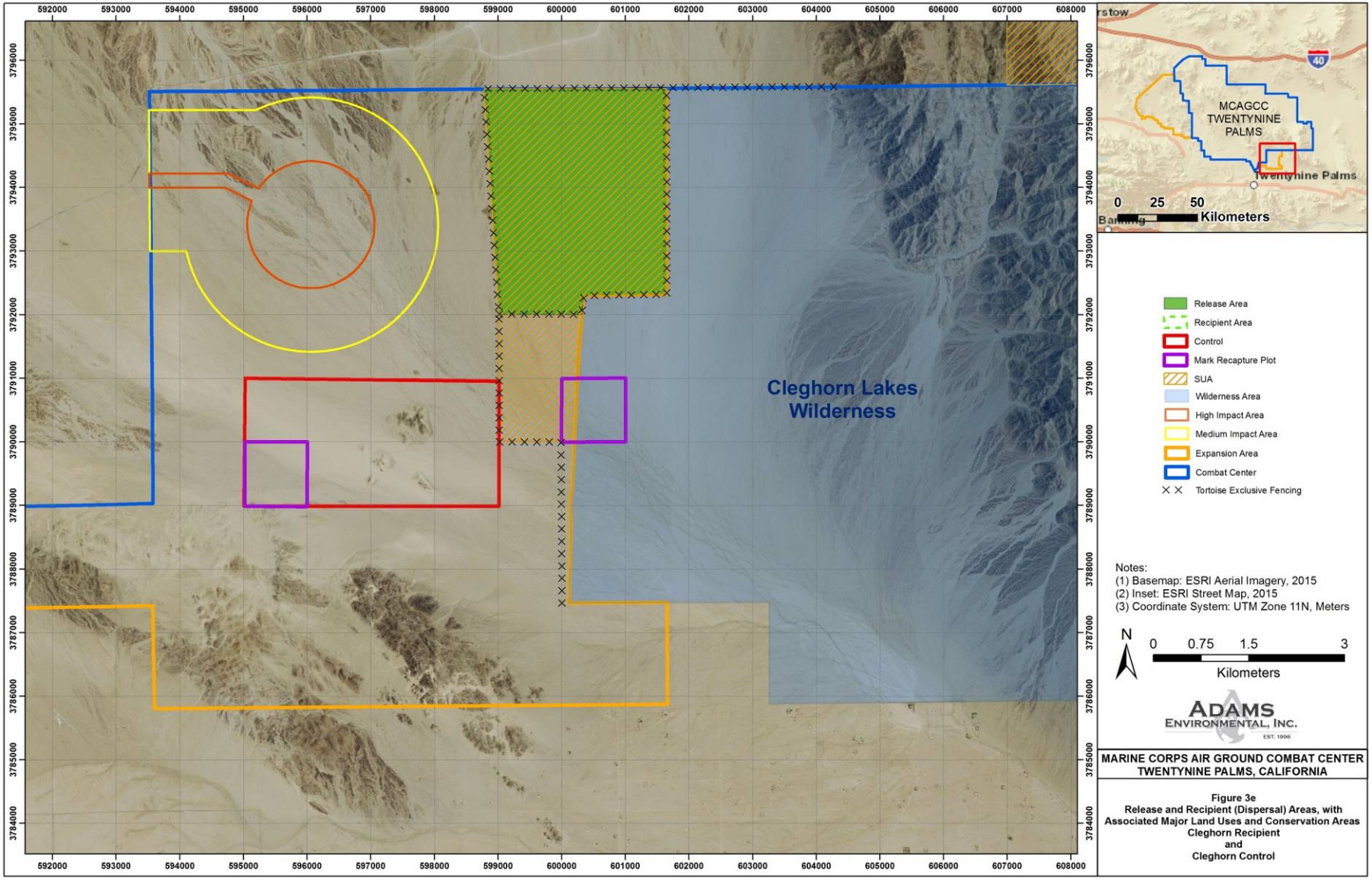
MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 3c
Release and Recipient (Dispersal) Areas, with Associated Major Land Uses and Conservation Areas
Siberia Recipient
and
Ludlow Control



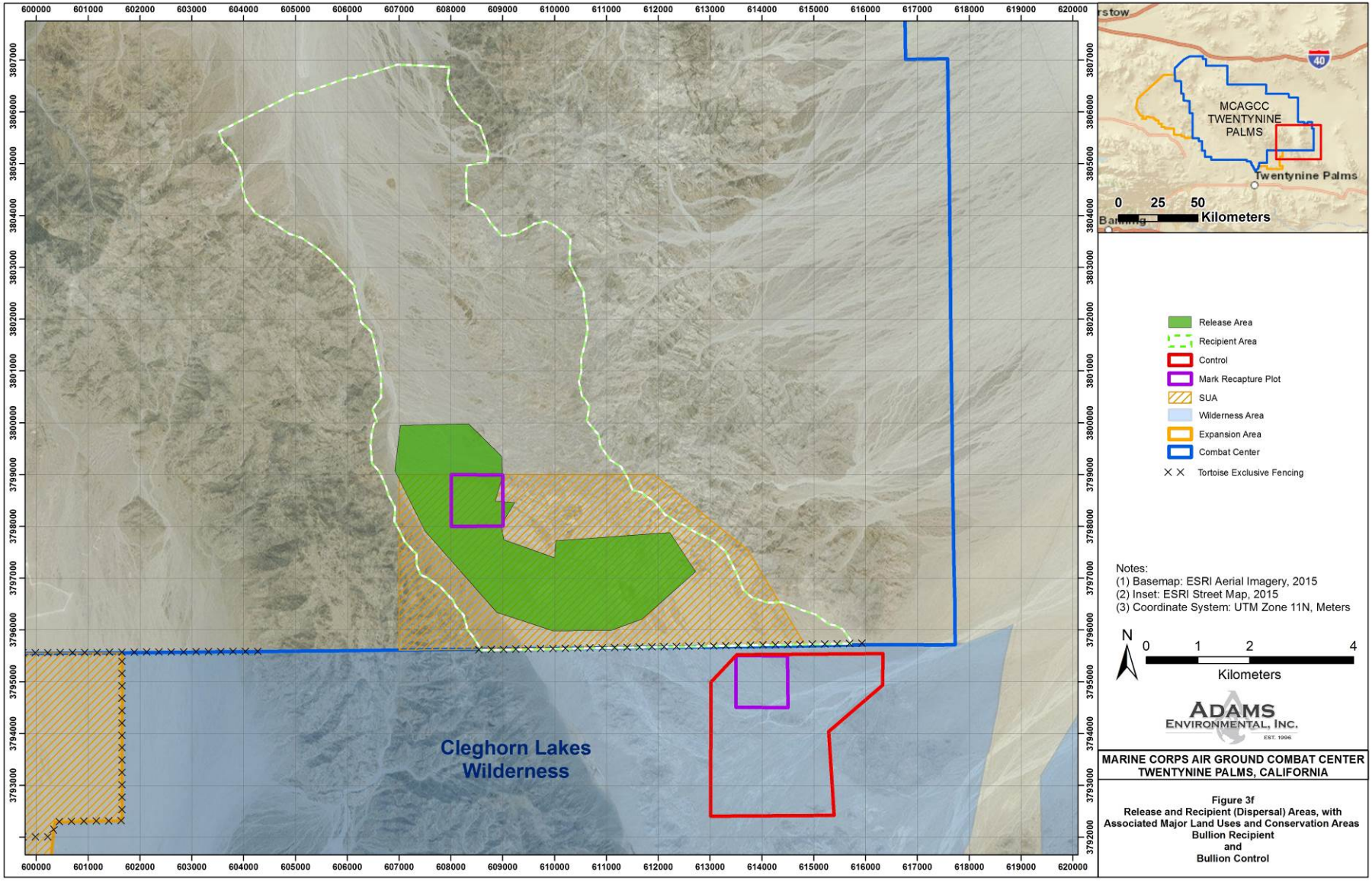
MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 3d
Release and Recipient (Dispersal) Areas, with Associated Major Land Uses and Conservation Areas
Broadwell Recipient
and
Calico Control



MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 3e
Release and Recipient (Dispersal) Areas, with Associated Major Land Uses and Conservation Areas
Cleghorn Recipient
and
Cleghorn Control



MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 3f
Release and Recipient (Dispersal) Areas, with Associated Major Land Uses and Conservation Areas
Bullion Recipient
and
Bullion Control

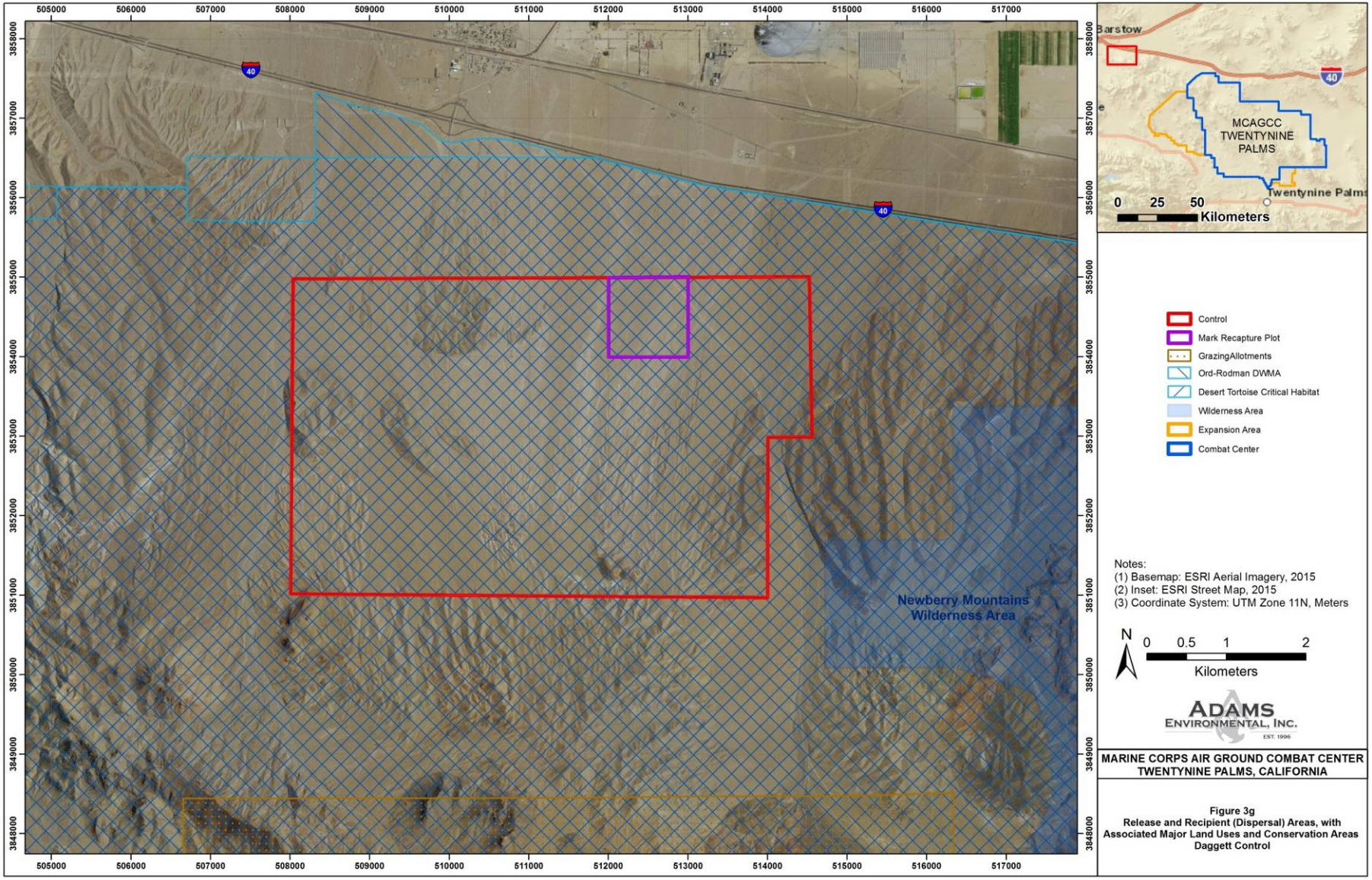


Figure 3g
Release and Recipient (Dispersal) Areas, with Associated Major Land Uses and Conservation Areas
Daggett Control

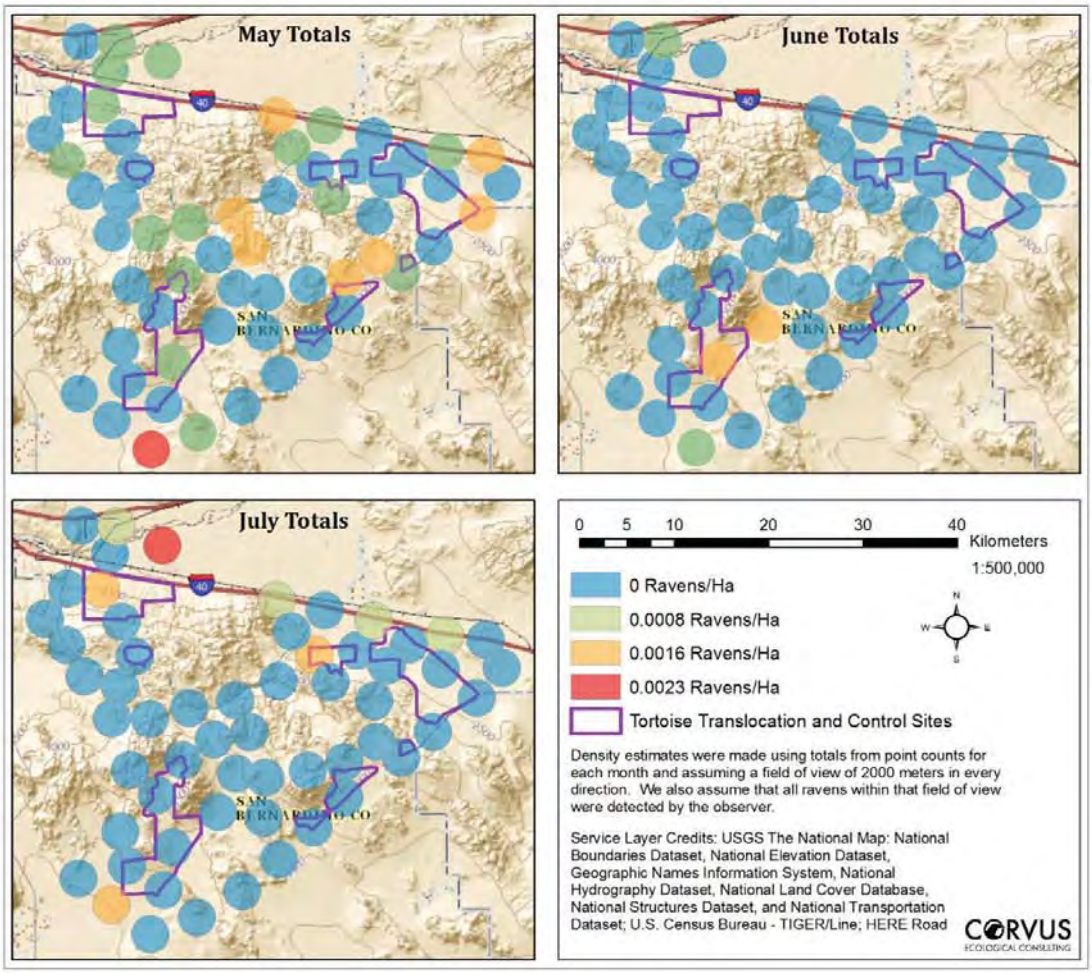
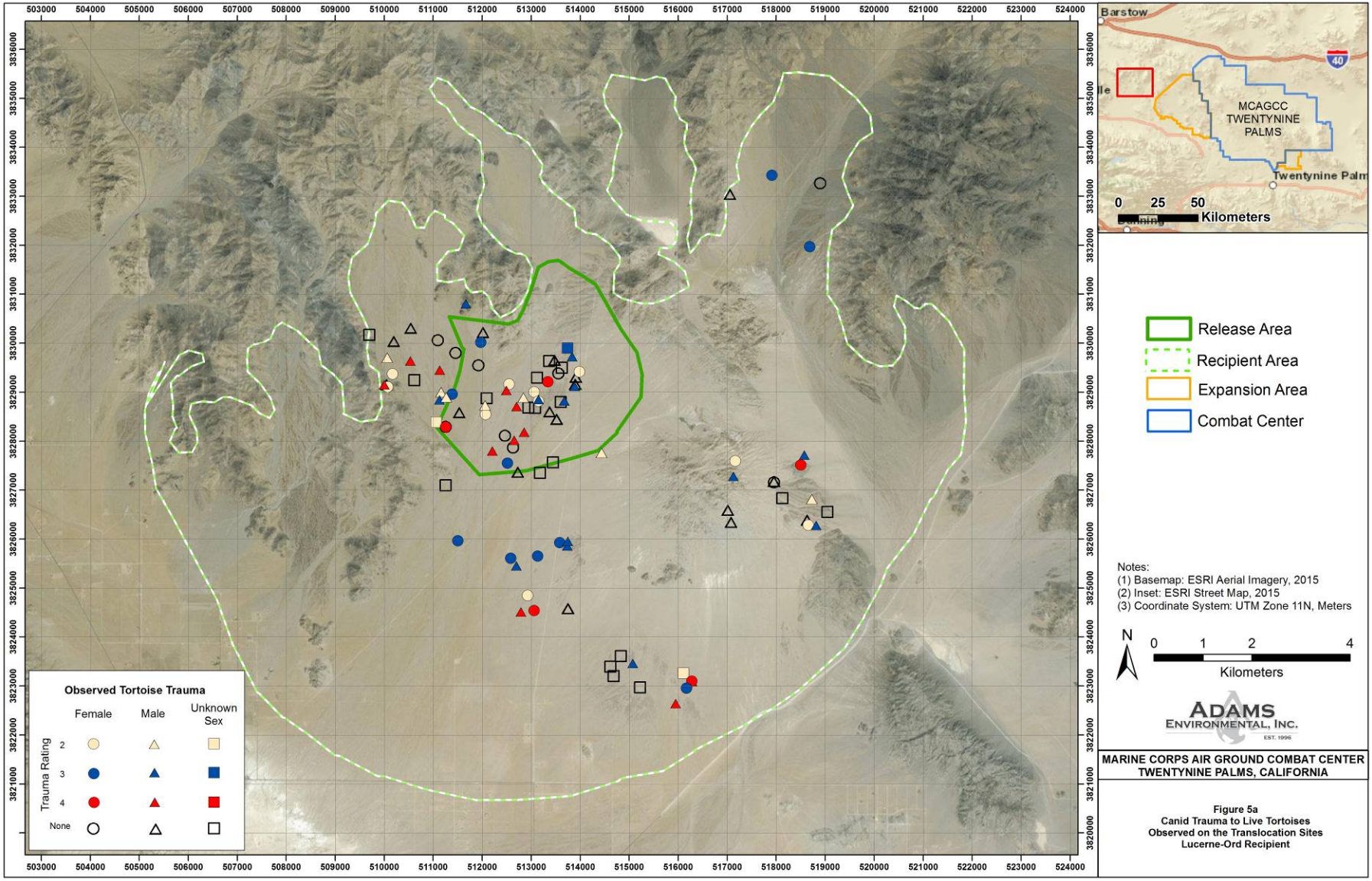


Figure 4. Comparative raven pressure at four translocation sites (purple polygons). Point count totals for three months in Spring and Summer 2015 are shown for Lucerne-Ord Recipient, Rodman-Sunshine Peak North Recipient, Rodman-Sunshine Peak South Control, and Daggett Control. See legend for calculation of raven pressure. Source: Corvus Ecological, unpub. data.



MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 5a
Canid Trauma to Live Tortoises
Observed on the Translocation Sites
Lucerne-Ord Recipient

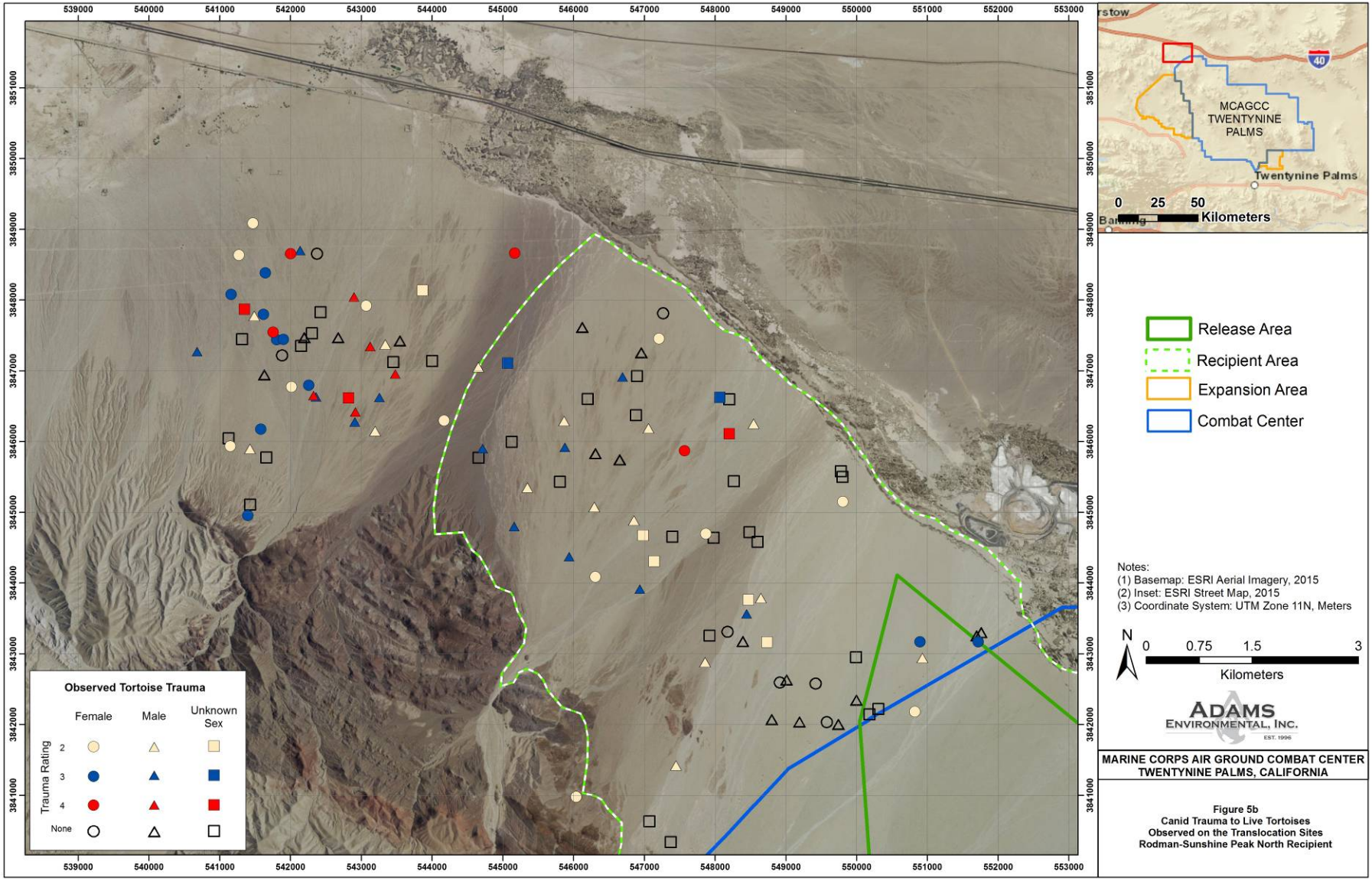
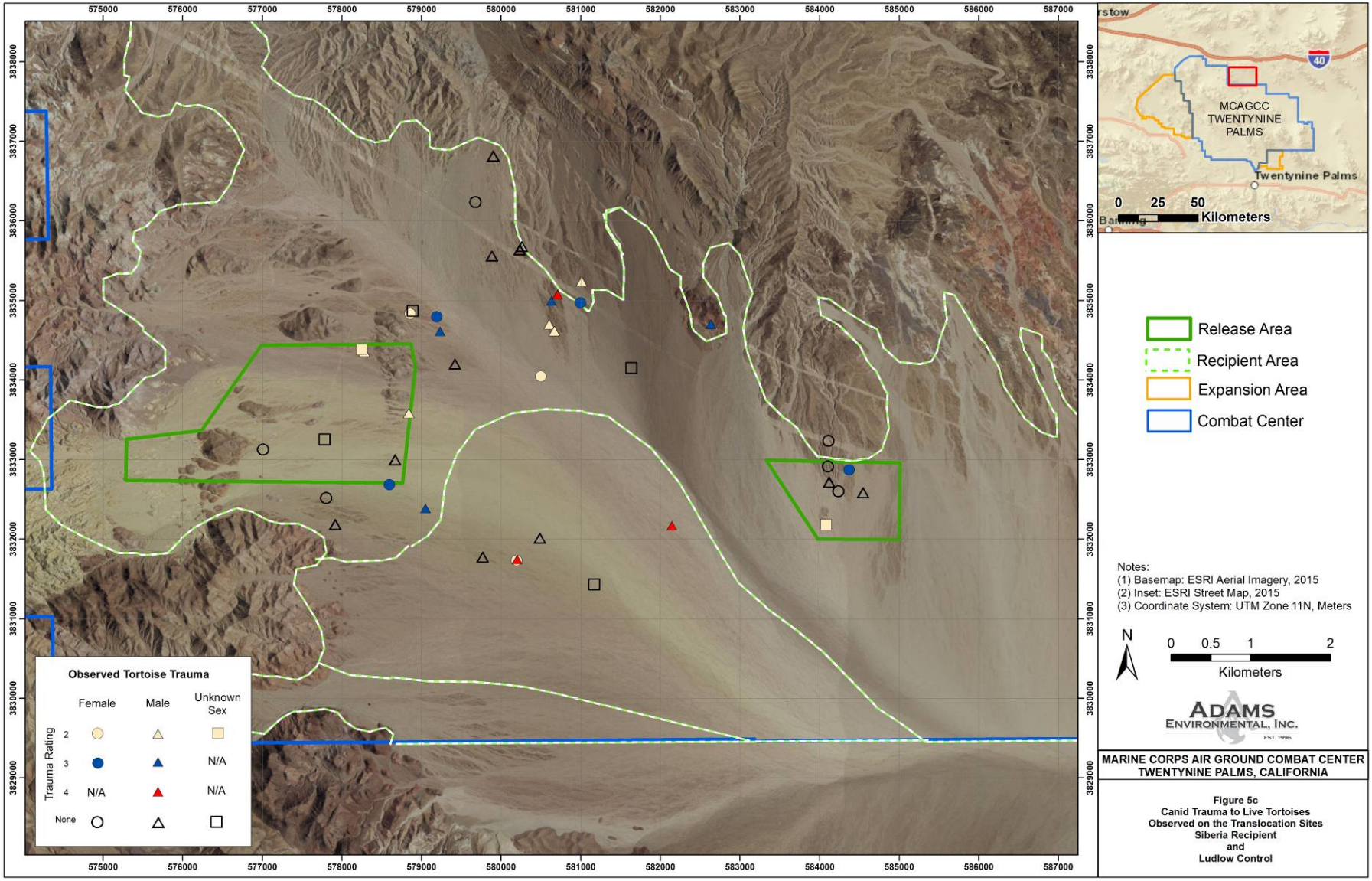
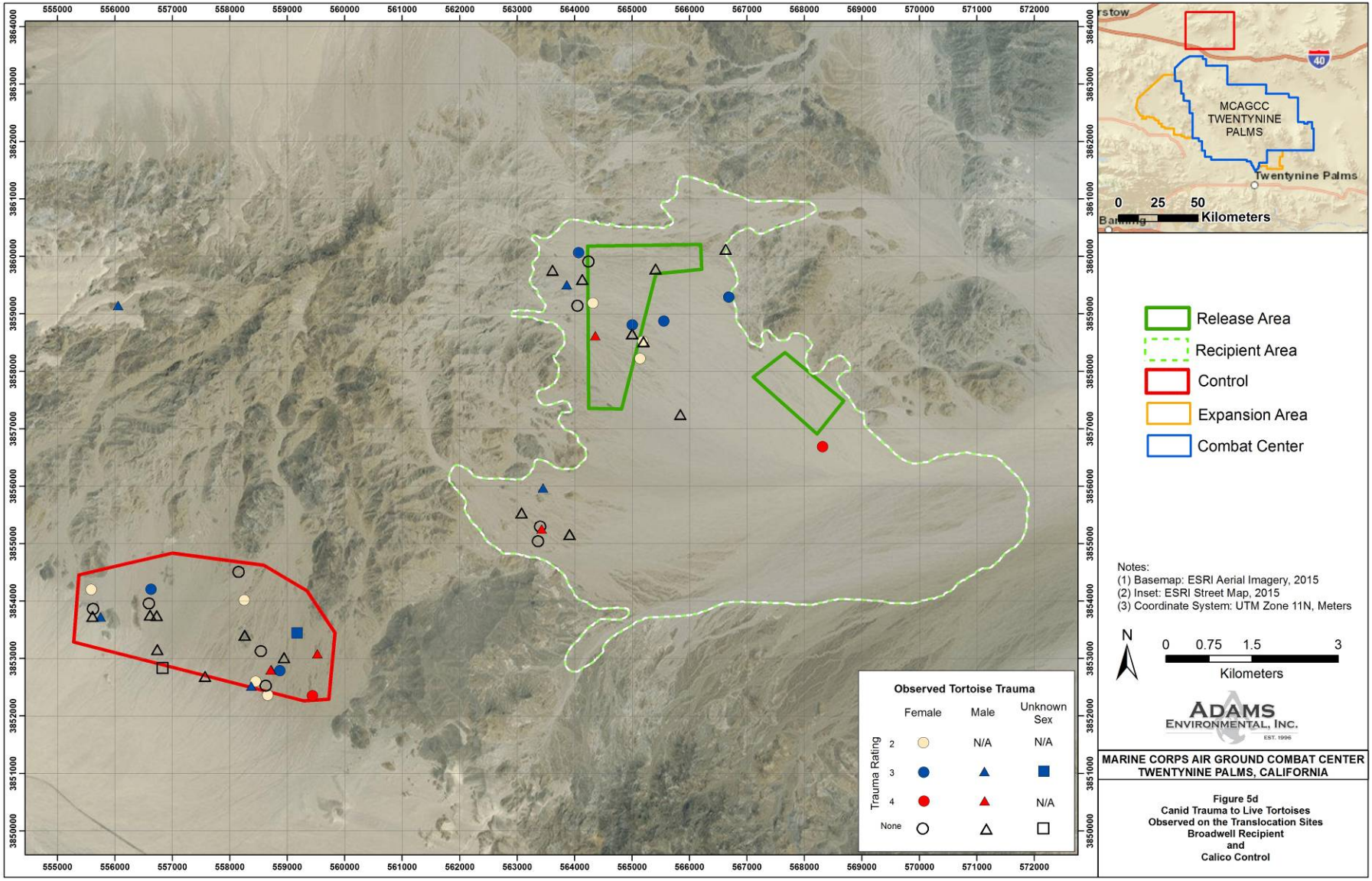


Figure 5b
Canid Trauma to Live Tortoises Observed on the Translocation Sites Rodman-Sunshine Peak North Recipient



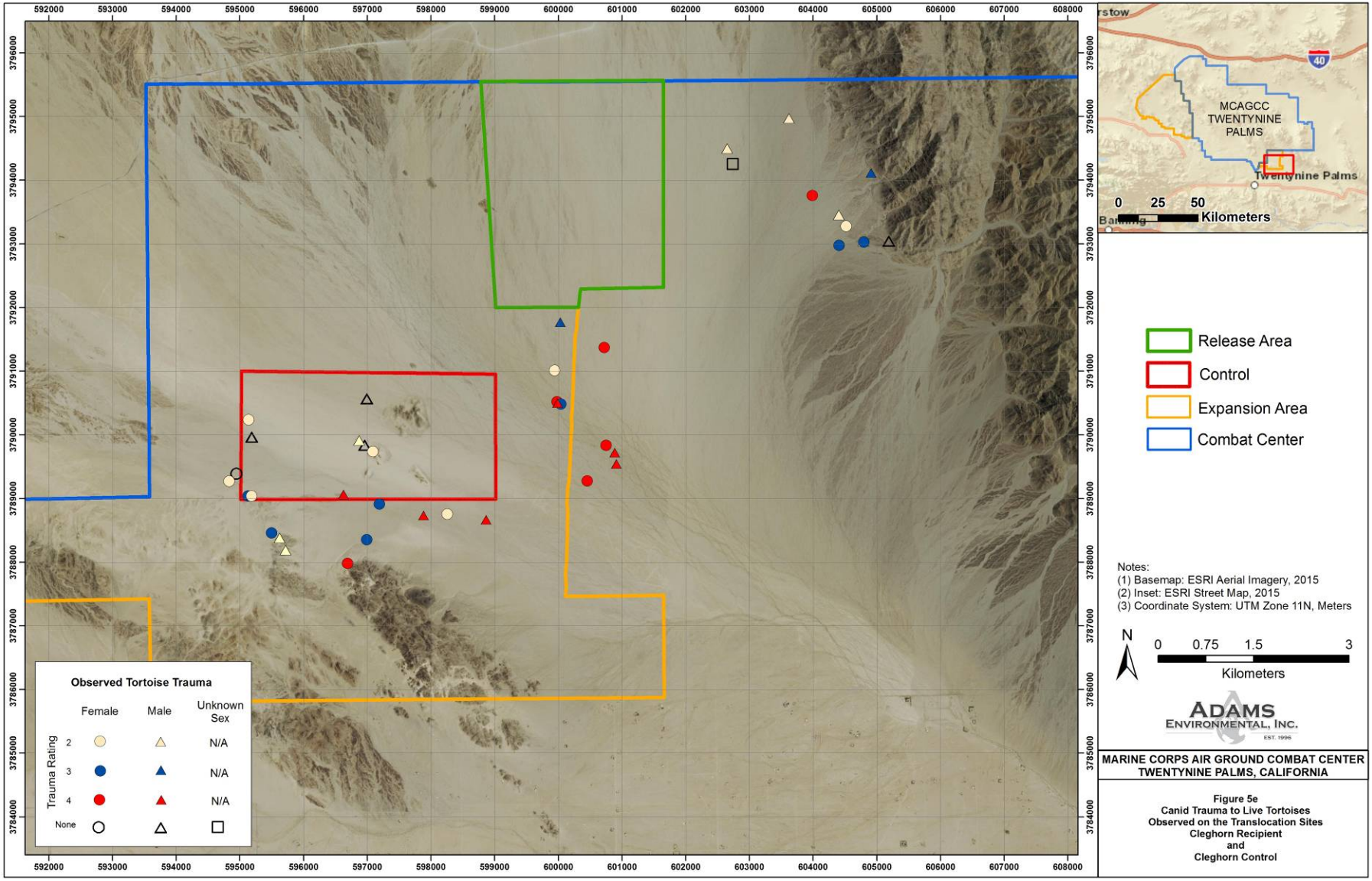
MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 5c
Canid Trauma to Live Tortoises
Observed on the Translocation Sites
Siberia Recipient
and
Ludlow Control



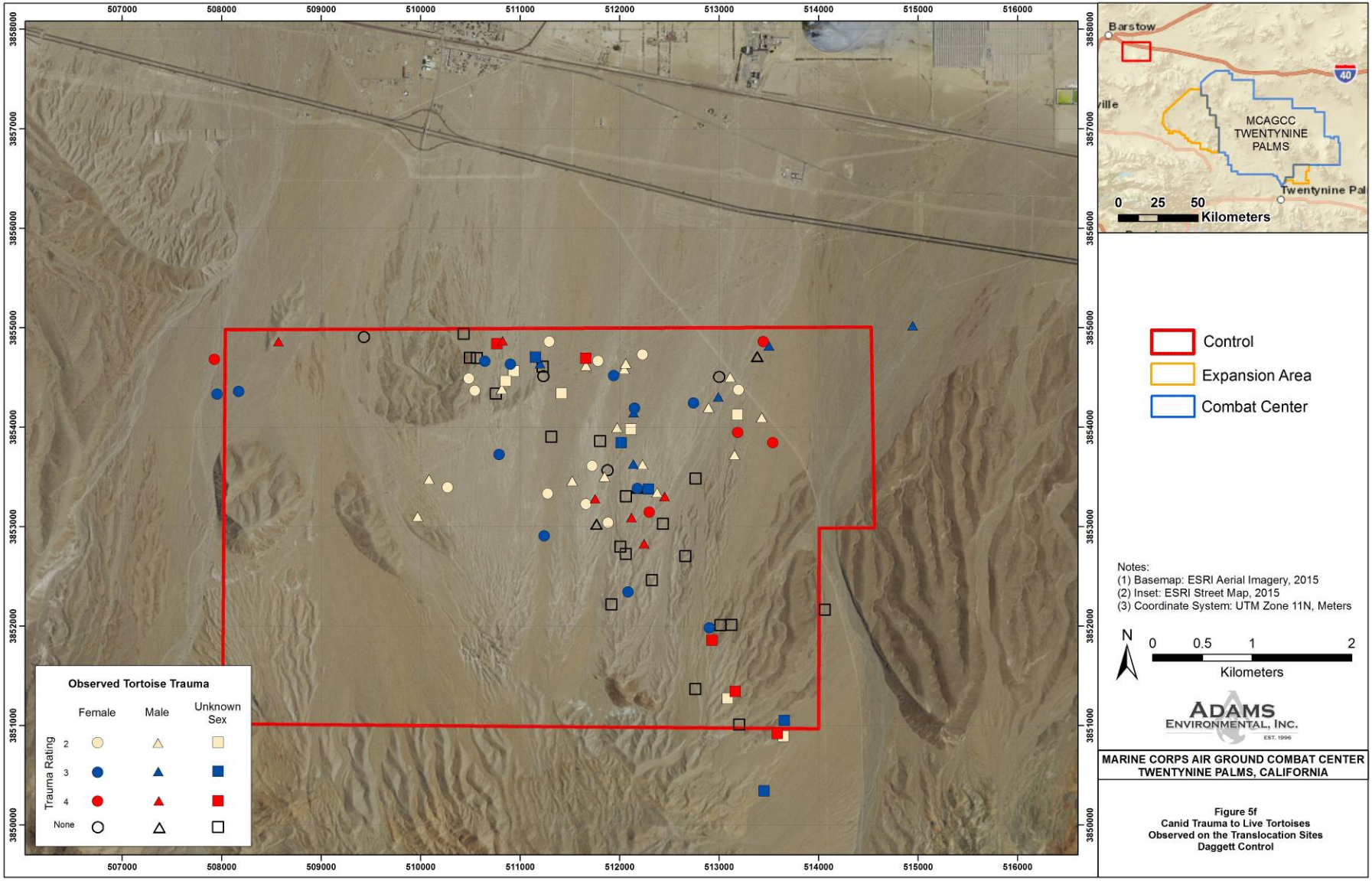
MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 5d
Canid Trauma to Live Tortoises
Observed on the Translocation Sites
Broadwell Recipient
and
Calico Control



MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 5e
Canid Trauma to Live Tortoises
Observed on the Translocation Sites
Cleghorn Recipient
and
Cleghorn Control



MARINE CORPS AIR GROUND COMBAT CENTER
TWENTYNINE PALMS, CALIFORNIA

Figure 5f
Canid Trauma to Live Tortoises
Observed on the Translocation Sites
Daggett Control

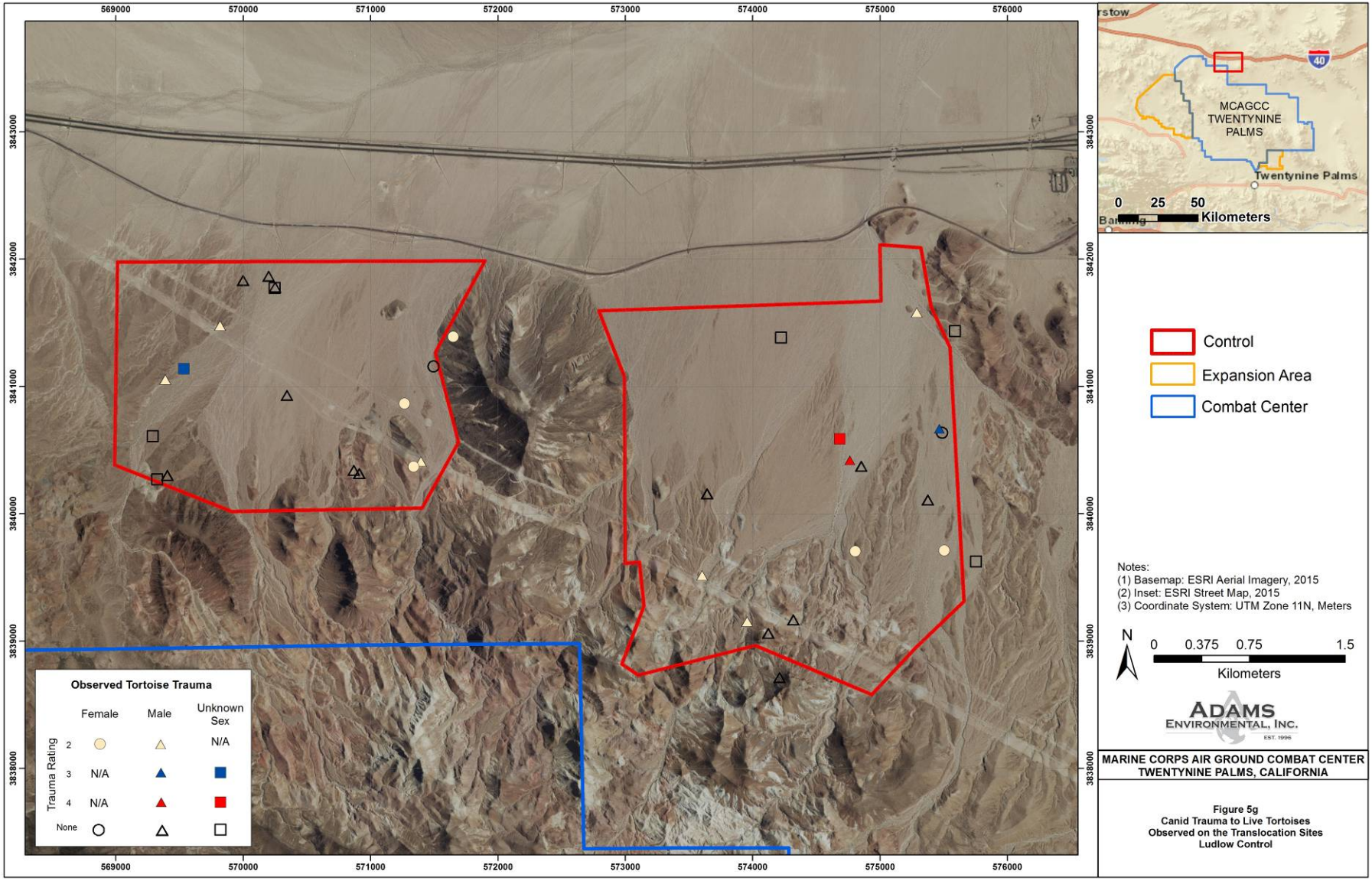


Figure 5g
Canid Trauma to Live Tortoises
Observed on the Translocation Sites
Ludlow Control

This page intentionally left blank.

APPENDIX B
PUBLIC INVOLVEMENT

This page intentionally left blank.

burden per rule submission filing is estimated to be $958.16. The Commission based its calculation on (1) an hourly wage rate of $48.14 for a Compliance Specialist to perform the filing over 8 hours;[1] an hourly wage rate of $71.63 for one economist to analyze trading data in the process over 8 hours.[2]

Respondents/Affected Entities: SEFs, DCMs.

Estimated Number of Respondents: 5.

Estimated Total Annual Burden on Respondents: 80 hours.

Frequency of Collection: Occasional.

Authority: 44 U.S.C. 3501 *et seq.*

Dated: August 19, 2016.

Christopher J. Kirkpatrick,

Secretary of the Commission.

[FR Doc. 2016–20288 Filed 8–23–16; 8:45 am]

BILLING CODE 6351–01–P

[1] *See* Report on Management & Professional Earnings in the Securities Industry 2013, Securities Industry and Financial Markets Association at 4 (Oct. 2013). The report lists the average total annual compensation for a compliance specialist (intermediate) as $66,649. The Commission estimated the personnel's hourly cost by assuming an 1,800 hour work year and by multiplying by 1.3 to account for overhead and other benefits.

[2] *See* Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Economists, *http://www.bls.gov/ooh/life-physical-and-social-science/economists.htm*. The report lists the median total annual compensation for an economist as $99,180. The Commission estimated the economist personnel's hourly cost by assuming an 1,800 hour work year and by multiplying by 1.3 to account for overhead and other benefits.

DEPARTMENT OF DEFENSE

Office of the Secretary

Defense Advisory Committee on Women in the Services; Notice of Federal Advisory Committee Meeting

AGENCY: Department of Defense.

ACTION: Federal Advisory Committee meeting notice.

SUMMARY: The Department of Defense is publishing this notice to announce that the following Federal Advisory Committee meeting of the Defense Advisory Committee on Women in the Services (DACOWITS) will take place. This meeting is open to the public.

DATES: Tuesday, September 13, 2016, from 8:30 a.m. to 2:15 p.m.; Wednesday, September 14, 2016, from 8:30 a.m. to 12 p.m.

ADDRESSES: Hilton Alexandria—Mark Center, 5000 Seminary Road, Alexandria, VA 22311.

FOR FURTHER INFORMATION CONTACT: Mr. Robert Bowling or DACOWITS Staff at 4800 Mark Center Drive, Suite 04J25–01, Alexandria, Virginia 22350–9000; *robert.d.bowling1.civ@mail.mil,* telephone (703) 697–2122, fax (703) 614–6233. Any updates to the agenda or any additional information can be found at *http://dacowits.defense.gov/.*

SUPPLEMENTARY INFORMATION: Pursuant to the Federal Advisory Committee Act of 1972 (5 U.S.C. Appendix, as amended), the Government in the Sunshine Act of 1976 (5 U.S.C. 552b), and section 10(a), Public Law 92–463, as amended, notice is hereby given of a forthcoming meeting of the DACOWITS.

The purpose of the meeting is for the Committee to receive briefings and updates relating to their current work. The Committee will start the meeting with the Designated Federal Officer (DFO) giving a status update on the Committee's requests for information. There will then be a panel discussion with the U.S. Army and U.S. Marine Corps to discuss the Curriculum Standards for Infantry Officer School. This will be followed by a panel discussion with the Military Services on their Gender Neutral Occupational Standards. This will be followed with a public comment period. Day one will end with a panel discussion with the Military Services on their Maternity Uniforms. On the second day the Committee will receive a briefing from the Joint Advertising Market Research & Studies (JAMRS) Office on the Nation's Recruitable Population, which will then be followed by a panel discussion with the Military Services on the same topic. Lastly, the Committee will propose and vote on their 2016 Recommendations to the Secretary of Defense.

Pursuant to 41 CFR 102–3.140, and section 10(a)(3) of the Federal Advisory Committee Act of 1972, interested persons may submit a written statement for consideration by the DACOWITS. Individuals submitting a written statement must submit their statement to the point of contact listed at the address in **FOR FURTHER INFORMATION CONTACT** no later than 5 p.m., Tuesday, September 6, 2016. If a written statement is not received by Tuesday, September 6, 2016, prior to the meeting, which is the subject of this notice, then it may not be provided to or considered by the DACOWITS until its next open meeting. The DFO will review all timely submissions with the DACOWITS Chair and ensure they are provided to the members of the Committee. If members of the public are interested in making an oral statement, a written statement should be submitted. After reviewing the written comments, the Chair and the DFO will determine who of the requesting persons will be able to make an oral presentation of their issue during an open portion of this meeting or at a future meeting. Pursuant to 41 CFR 102–3.140(d), determination of who will be making an oral presentation is at the sole discretion of the Committee Chair and the DFO, and will depend on time available and if the topics are relevant to the Committee's activities. Five minutes will be allotted to persons desiring to make an oral presentation. Oral presentations by members of the public will be permitted only on Tuesday, September 13, 2016 from 12 p.m. to 12:30 p.m. in front of the full Committee. The number of oral presentations to be made will depend on the number of requests received from members of the public.

Pursuant to 5 U.S.C. 552b and 41 CFR 102–3.140 through 102–3.165, this meeting is open to the public, subject to the availability of space.

Meeting Agenda

Tuesday, September 13, 2016, From 8:30 a.m. to 2:15 p.m.

—Welcome, Introductions, Announcements
— Request for Information Status Update
— Panel Discussion—Curriculum Standards for Infantry Officer School
—Panel Discussion—Gender Neutral Occupational Standards
—Public Comment Period
—Panel Discussion—Maternity Uniforms

Wednesday, September 14, 2016, From 8:30 a.m. to 12:00 p.m.

—Welcome and Announcements
—Briefing—The Nation's Recruitable Population
—Panel Discussion—The Nation's Recruitable Population
—Committee Proposes and Votes on 2016 Recommendations

Dated: August 19, 2016.

Aaron Siegel,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 2016–20306 Filed 8–23–16; 8:45 am]

BILLING CODE 5001–06–P

DEPARTMENT OF DEFENSE

Department of the Navy

Notice of Intent To Prepare a Supplemental Environmental Impact Statement (EIS) to the Land Acquisition and Airspace Establishment Final EIS at the Marine Corps Air Ground Combat Center, Twentynine Palms, California

AGENCY: Department of the Navy, DoD.

ACTION: Notice.

SUMMARY: Pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA) of 1969, as implemented by the Council on Environmental Quality Regulations (40 CFR parts 1500–1508), the Department of the Navy (DON) announces its intent to prepare a Supplemental Environmental Impact Statement (EIS) to evaluate the potential environmental impacts that may result from implementing alternative desert tortoise translocation plans at the Marine Corps Air Ground Combat Center, Twentynine Palms (hereinafter ''the Combat Center''). The Supplemental EIS is a supplement to the Final EIS for ''Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live Fire and Maneuver Training'' dated July 2012 (hereinafter ''2012 Final EIS'') (77 FR 44234).

SUPPLEMENTARY INFORMATION: Pursuant to 40 CFR 1502.9(c), a Supplemental EIS is being prepared to evaluate new information relevant to environmental concerns associated with translocation of tortoises from specific training areas on newly acquired lands. Translocation was deemed necessary to mitigate the moderate to high levels of impact on the tortoise population from the Marine Expeditionary Brigade training activities assessed in the 2012 Final EIS. Since the 2012 Final EIS, the Marine Corps has conducted additional detailed studies and worked cooperatively with the United States Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife, and the Bureau of Land Management (BLM) on alternative translocation plans for the desert tortoise, as required in a 2012 Biological Opinion (BO) issued by the USFWS. In light of new information gained from these efforts, the DON has elected to prepare a Supplemental EIS focusing on the evaluation of potential impacts from alternative tortoise translocation plans.

The purpose of the proposed action evaluated in the Supplemental EIS is to study alternative translocation plans in support of the project that was described in the 2012 Final EIS, selected in the 2013 Record of Decision (ROD) (78 FR 11632), and authorized by the National Defense Authorization Act for Fiscal Year 2014.

The Marine Corps needs to implement the proposed action to satisfy requirements identified in the 2012 Final EIS and associated 2012 BO. The 2012 BO concluded that the implementation of the Preferred Alternative from the 2012 Final EIS would likely result in the ''take'' of desert tortoises associated with military training, tortoise translocation efforts, and authorized and unauthorized Off-Highway Vehicle (OHV) use by recreationists displaced from former areas of the Johnson Valley OHV Area.

The 2013 ROD and associated BO committed the Marine Corps to undertake measures to minimize the ''take'' of desert tortoises including:

- Establishment of new Special Use Areas (tortoises habitat areas where military training and Off-Highway Vehicle use will be prohibited;
- Translocation Program;
- Desert Tortoise Headstarting and Population Augmentation; and
- Monitoring.

While the 2012 Final EIS and associated BO analyzed a particular translocation program, additional detailed studies and cooperative work on alternative translocation plans for the desert tortoise revealed other possible methods of meeting these requirements. In light of the purpose and need for the proposed action, the DON has identified two potential action alternatives and a No-Action Alternative for the translocation of desert tortoise from training impact areas.

Each alternative will identify recipient sites (to which tortoises would be translocated), and control sites (where the resident tortoise populations will be studied to provide comparative data on survival, threats to survival, habitat stability and changes, and health and disease relative to the translocated tortoise populations at the recipient sites). Each alternative will also include details of the proposed tortoise translocation, including specific handling procedures, fencing, clearance surveys, 30 years of post-translocation monitoring, and other research activities.

The Combat Center identified and applied screening criteria from the 2011 USFWS revised recovery plan for the Mojave population of the desert tortoise and the 2011 USFWS guidance for translocation of desert tortoises to evaluate and select the proposed recipient sites/areas under each alternative. These criteria relate to land use, habitat quality, population levels, disease prevalence, and distance from collection. The Combat Center also screened for research and monitoring feasibility.

Under the No-Action Alternative, the Marine Corps would conduct translocation of desert tortoises in accordance with the General Translocation Plan (GTP) described in the 2012 BO. Alternatives 1 and 2 primarily differ from the No Action Alternative in the selection of proposed recipient and control areas and in the distribution of desert tortoises at each release site. Compared to the No Action Alternative, Alternatives 1 and 2 would also include additional research studies and reflect updated information obtained from the 3-year program of surveys conducted since the 2012 Final EIS. Alternative 2 differs from Alternative 1 in that: (1) One less recipient site would be used; (2) the pairing of control sites to recipient sites would be different; (3) the Bullion control site would be located on the Combat Center instead of within the Cleghorn Lakes Wilderness Area; and (4) translocation densities would be different.

The Supplemental EIS will analyze environmental effects associated primarily with biological resources, land use, air quality, and cultural resources. The Supplemental EIS analysis will evaluate direct, indirect, short-term and long-term impacts, as well as cumulative impacts from other relevant activities. Additionally, the DON will undertake any consultations required by all applicable laws or regulations.

BLM has been invited to be a Cooperating Agency on the preparation of the Supplemental EIS since many of the lands to which tortoises would be relocated are managed by BLM.

Pursuant to 40 CFR 1502.9(c)(4), the DON will prepare, circulate, and file the Supplemental EIS in the same fashion (exclusive of scoping) as it did the draft and 2012 Final EIS. This will include providing a Draft Supplemental EIS for a 45-day public review period in October 2016, during which three (3) public information meetings will be held in the communities of Joshua Tree, Palm Springs, and Barstow. A Notice of Availability of the Draft Supplemental EIS and Notice of Public Meetings will be published in the **Federal Register**, in area newspapers, and on the Supplemental EIS Web site at *http://LADTT.com* in advance of the release of the Draft Supplemental EIS and the public meetings. Those notices will identify further details about the public meetings and the specific opportunities and methods for the public to provide comments on the Draft Supplemental EIS.

The mailing list for the Supplemental EIS is based on the 2012 Final EIS. Those on this list will receive notices and documents related to Supplemental EIS preparation. This list includes local, state, and federal agencies with jurisdiction or other interests in the alternatives. In addition, the mailing list includes adjacent property owners, affected municipalities, and other interested parties such as conservation

and off-highway vehicle organizations. Anyone wishing to be added to the mailing list may request to be added by contacting the Supplemental EIS project manager at the address below.

No decision will be made to implement any alternative until the Supplemental EIS process is completed and a ROD is signed by the Assistant Secretary of the Navy (Energy, Installations and Environment) or designee.

FOR FURTHER INFORMATION CONTACT: NEPA Program Manager (Attn: Mr. Scott Kerr), Bldg. 1418, MAGTFTC/MCAGCC, Twentynine Palms, CA 92278–8104; phone: 760–830–8190; email: *Scott.Kerr@usmc.mil.*

Dated: August 18, 2016.

C. Pan,

Lieutenant, Judge Advocate General's Corps, U.S. Navy, Alternate Federal Register Liaison Officer.

[FR Doc. 2016–20231 Filed 8–23–16; 8:45 am]

BILLING CODE 3810–FF–P

DEPARTMENT OF EDUCATION

[Docket No.: ED–2016–ICCD–0093]

Agency Information Collection Activities; Comment Request; 2012/17 Beginning Postsecondary Students Longitudinal Study: (BPS:12/17)

AGENCY: National Center for Education Statistics (NCES), Department of Education (ED).

ACTION: Notice.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. chapter 3501 *et seq.*), ED is proposing a revision of an existing information collection.

DATES: Interested persons are invited to submit comments on or before October 24, 2016.

ADDRESSES: To access and review all the documents related to the information collection listed in this notice, please use *http://www.regulations.gov* by searching the Docket ID number ED–2016–ICCD–0093. Comments submitted in response to this notice should be submitted electronically through the Federal eRulemaking Portal at *http://www.regulations.gov* by selecting the Docket ID number or via postal mail, commercial delivery, or hand delivery. *Please note that comments submitted by fax or email and those submitted after the comment period will not be accepted.* Written requests for information or comments submitted by postal mail or delivery should be addressed to the Director of the Information Collection Clearance Division, U.S. Department of Education, 400 Maryland Avenue SW., LBJ, Room 2E–349, Washington, DC 20202–4537.

FOR FURTHER INFORMATION CONTACT: For specific questions related to collection activities, please contact NCES Information Collections at *NCES.Information.Collections@ed.gov.*

SUPPLEMENTARY INFORMATION: The Department of Education (ED), in accordance with the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3506(c)(2)(A)), provides the general public and Federal agencies with an opportunity to comment on proposed, revised, and continuing collections of information. This helps the Department assess the impact of its information collection requirements and minimize the public's reporting burden. It also helps the public understand the Department's information collection requirements and provide the requested data in the desired format. ED is soliciting comments on the proposed information collection request (ICR) that is described below. The Department of Education is especially interested in public comment addressing the following issues: (1) Is this collection necessary to the proper functions of the Department; (2) will this information be processed and used in a timely manner; (3) is the estimate of burden accurate; (4) how might the Department enhance the quality, utility, and clarity of the information to be collected; and (5) how might the Department minimize the burden of this collection on the respondents, including through the use of information technology. Please note that written comments received in response to this notice will be considered public records.

Title of Collection: 2012/17 Beginning Postsecondary Students Longitudinal Study: (BPS:12/17).

OMB Control Number: 1850–0631.

Type of Review: A revision of an existing information collection.

Respondents/Affected Public: Individuals.

Total Estimated Number of Annual Responses: 39,399.

Total Estimated Number of Annual Burden Hours: 55,002.

Abstract: The 2012/17 Beginning Postsecondary Students Longitudinal Study (BPS:12/17) is conducted by the National Center for Education Statistics (NCES), within the U.S. Department of Education (ED). BPS is designed to follow a cohort of students who enroll in postsecondary education for the first time during the same academic year, irrespective of the date of high school completion. The study collects data on students' persistence in and completion of postsecondary education programs; their transition to employment; demographic characteristics; and changes over time in their goals, marital status, income, and debt, among other indicators. Data from BPS are used to help researchers and policymakers better understand how financial aid influences persistence and completion, what percentages of students complete various degree programs, what are the early employment and wage outcomes for certificate and degree attainers, and why students leave school. This request is to conduct the BPS:12/17 full-scale data collection, including a student interview, file matching to various administrative data sources, and collection of corresponding postsecondary education transcripts and student records.

Dated: August 19, 2016.

Tomakie Washington,

Acting Director, Information Collection Clearance Division, Office of the Chief Privacy Officer, Office of Management.

[FR Doc. 2016–20263 Filed 8–23–16; 8:45 am]

BILLING CODE 4000–01–P

DEPARTMENT OF EDUCATION

Reopening the Fiscal Year 2016 Competition for Certain Eligible Applicants; Investing in Innovation Fund—Development Grants Full Application

[Catalog of Federal Domestic Assistance (CFDA) Number: 84.411C]

AGENCY: Office of Innovation and Improvement, Department of Education.

ACTION: Notice.

SUMMARY: On April 25, 2016, we published in the **Federal Register** (81 FR 24070) a notice inviting applications for new awards for fiscal year (FY) 2016 for the Investing in Innovation (i3) Fund Development competition. The Department reopens the FY 2016 i3 Development Grants competition for, and will accept applications from, certain prospective eligible applicants affected by the severe storms and flooding beginning on August 11, 2016, and continuing, in Louisiana. We are reopening this competition in order to help affected eligible applicants compete fairly with other eligible applicants under this competition.

DATES:

Deadline for Transmittal of Applications for Eligible Applicants: August 30, 2016.

Deadline for Intergovernmental Review: October 24, 2016.

United States Marine Corps

Internet: http://www.29palms.marines.mil/

Public Affairs Office

P.O. Box 788200

Marine Corps Air Ground Combat Center

Twentynine Palms, CA 92278

For more information:

Phone: (760) 830-6213

PRESS RELEASE #16-009 Aug. 24, 2016

FOR IMMEDIATE RELEASE

SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

MARINE CORPS AIR GROUND COMBAT CENTER TWENTYNINE PALMS, Calif. – The Department of the Navy is in the initial stages of preparing a Supplemental Environmental Impact Statement (EIS) to evaluate the potential environmental effects of alternative desert tortoise translocation options at Marine Corps Air Ground Combat Center (MCAGCC) Twentynine Palms, CA.

Translocation of the desert tortoise is necessary to support training on newly-acquired training areas resulting from a 2013 Record of Decision for Land Acquisition/Airspace Establishment at MCAGCC.

A Draft Supplemental EIS is scheduled for public release in October 2016 and will be available for a 45-day public review, during which three (3) public information meetings will be held in the communities of Joshua Tree, Palm Springs, and Barstow.

A Notice of Availability of the Draft Supplemental EIS and more details about the public meetings will be provided before release of the draft document. Announcements will identify specific opportunities for the public to provide your comments on the Draft Supplemental EIS.

For more information, please visit the project website at http://www.SEISforLAA.com or call the

Resource Management Group at (760) 830-3737.

UNITED STATES MARINE CORPS
MARINE AIR GROUND TASK FORCE TRAINING COMMAND
MARINE CORPS AIR GROUND COMBAT CENTER
BOX 788100
TWENTYNINE PALMS, CALIFORNIA 92278-8100

5060
4
23 Aug 16

Dear Sir/Madam:

Subj: SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR PROPOSED DESERT TORTOISE TRANSLOCATION OPTIONS AT MARINE CORPS AIR GROUND COMBAT CENTER TWENTYNINE PALMS, CALIFORNIA

The Department of the Navy is in the initial stages of preparing a Supplemental Environmental Impact Statement (EIS) to evaluate the potential environmental effects of alternative desert tortoise translocation options at Marine Corps Air Ground Combat Center (MCAGCC) Twentynine Palms, CA. Translocation of the desert tortoise is necessary to support training on newly-acquired training areas resulting from a 2013 Record of Decision for Land Acquisition/Airspace Establishment at MCAGCC.

A Draft Supplemental EIS is scheduled for public release in October 2016 and will be available for a 45-day public review, during which public information meetings will be held in the communities of Joshua Tree, Palm Springs, and Barstow.

A Notice of Availability of the Draft Supplemental EIS and more details about the public meetings will be provided before release of the draft document. Announcements will identify specific opportunities for you to provide your comments on the Draft Supplemental EIS.

For more information, please visit the project website at http://www.SEISforLAA.com or call the Resource Management Group at (760) 830-3737.

Sincerely,

J. D. WYLIE
Assistant Chief of Staff, G-4
By Direction

Supplemental Environmental Impact Statement (SEIS) at 29Palms

29Palms SEIS Project Team
c/o Cardno Government Services
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Visit **www.SEISforLAA.com** or call (760) 830-3737 to learn more about the SEIS.

Supplemental Environmental Impact Statement (SEIS) at 29Palms

The Department of the Navy is preparing an SEIS to evaluate alternative plans for translocating desert tortoises from specific newly-acquired training areas following the July 2012 Final EIS for Land Acquisition/Airspace Establishment at the Marine Corps Air Ground Combat Center.

Translocation of the desert tortoise is necessary to mitigate the expected impacts to tortoise populations from planned Marine Expeditionary Brigade-level training activities, as assessed in the July 2012 Final EIS.

A Draft Supplemental EIS is scheduled for public release in October 2016 and will be available for a 45-day public review, during which public information meetings will be held in the communities of Joshua Tree, Palm Springs, and Barstow.

A Notice of Availability of the Draft SEIS and more details about the public meetings will be provided upon the release of the Draft SEIS. Announcements will identify specific opportunities for you to provide your comments on the Draft SEIS.

For more information visit **www.SEISforLAA.com** or call the Resource Management Group at (760) 830-3737.

U.S. Marine Corps announces Supplemental Environmental Impact Statement (EIS) to evaluate desert tortoise translocation at the Combat Center

A Supplemental EIS is being prepared to evaluate the effects of alternative plans for translocating tortoises from specific newly-acquired training areas following the July 2012 Final EIS for Land Acquisition/Airspace Establishment.

Translocation was deemed necessary to mitigate the expected impacts on tortoise populations from planned Marine Expeditionary Brigade-level training activities assessed in the July 2012 Final EIS.

The U.S. Marine Corps welcomes your input in this process!

A Draft Supplemental EIS is scheduled for public release in October 2016 and will be available for a 45-day public review, during which three public information meetings will be held in the communities of Joshua Tree, Palm Springs, and Barstow.

A Notice of Availability of the Draft Supplemental EIS and more details about the public meetings will be published in the Federal Register and local newspapers, and also made available at local libraries and on the project website, upon the release of the Draft Supplemental EIS. Those announcements will identify specific opportunities for you to provide your comments on the Draft Supplemental EIS.

For more information, please visit the project website at http://www.SEISforLAA.com or call the Resource Management Group at (760) 830-3737.

For more information visit: www.SEISforLAA.com

MCAGCC TWENTYNINE PALMS
OBSERVATION POST
August 26, 2016 | Since 1957 | Vol. 60 Issue 34
www.29palms.marines.mil

LANCE CPL. LEVI SCHULTZ

Marines with Special Purpose Marine Air Ground Task Force, Crisis Response, Central Command, interact with role-players during a non-combatant evacuation operation exercise at Range 220, a military operations on urbanized terrain facility, Wednesday.

SPMAGTF ready to deploy

STORY AND PHOTOS BY LANCE CPL. LEVI SCHULTZ

Marines and sailors with Special Purpose Marine Air Ground Task Force, Crisis Response, Central Command 17.1 conducted their Certification Exercise (CertEx) aboard the Combat Center, Aug. 22 through 25.

Following months of pre-deployment training including Integrated Training Exercise, CertEx was the final examination for the Marines to prove they are capable of serving as the nation's premiere crisis response force in the U.S. Central Command area of operations.

"During ITX, we prepared for major combat operations," said Col. Bill Vivian, commanding officer, 7th Marine Regiment and SPMAGTF 17.1. "Those are the core skills that all Marines build before they deploy. In addition, a smaller group who will be facing a deployment in the early fall is preparing for mission specific tasks; that is CertEx."

The exercise presented the Marines with a gamut of air and ground operations such as a tactical recovery of aircraft and personnel, reinforcement of an embassy, logistical movements and personnel evacuation; all of which are vital to the crisis response mission, according to 1st Lt. David Williams, public affairs officer, SPMAGTF 17.1. On Aug. 24 at Range 220, the Combat Center's largest military operations on urbanized terrain facility, Marines worked with

See **CertEx** A6

Combat Center victim advocates receive STOP training

STORY AND PHOTOS BY CPL. THOMAS MUDD

Victim advocates and clinicians aboard the Combat Center attended the Skills, Techniques, Options and Plans training program held at the Education Center, Aug. 17-19.

The three-day training program, given by Dr. David Wexler, clinical psychologist and executive director, Relationship Training Institute San Diego, teaches attendees how to better support military personnel and their families in instances of domestic violence. The training covered the types of domestic violence, the causes and how advocates can best help the individuals who come through their respective offices.

"For years, different Marine bases have been using the domestic violence treatment programs that my institute developed," Wexler said. "I go to those bases to train the staff on how to use our programs to the best of their ability."

The training also covered some psychological issues that can lead to offenders abusing their spouse

See **STOP** A6

CPL. THOMAS MUDD

David Wexler, clinical psychologist and executive director, Relationship Training Institute San Diego, answers questions during his lecture on domestic violence the Skills, Techniques, Options and Plans training program at the Education Center, Aug. 17.

CPL. THOMAS MUDD

Domestic violence advocates and clinicians from Marine Corps Air Ground Combat Center, Twentynine Palms, Calif., attend a class on the Skills, Techniques, Options and Plans program at the Education Center, Aug. 17.

Inside the Observation Post

Volume 60, Issue 34

Corps modernizing tank commander's weapon station

Page A7

Marine Corps' Top Shot

[Every week, thousands of fans cast their votes for the best photograph posted on the Corps' Facebook page. This week's top shot comes from Cpl. Timothy Valero.]

Marines with 7th Marine Regiment holds a ceremony for the regiment's 99th anniversary aboard Marine Corps Air-Ground Combat Center Twentynine Palms, Calif., Aug. 14. The 7th Marine Regiment has a rich history spanning from the Banana Wars and Guadalcanal to today's Operation Inherit Resolve.

exercise due diligence and continue to comply with provisions found in Sections 745 and 746 of the Financial Services and General Government Appropriations Act, 2016 (Division E of Pub. L. 114–113, the Consolidated Appropriations Act, 2016), as well as similar provisions that future years' appropriations acts may include. The requirements of these provisions were originally enacted in three Fiscal Year (FY) 2012 appropriations acts that made funds available to DoD Components for obligation. The details of the provisions in the three FY 2012 acts varied somewhat but they generally required DoD to consider suspension or debarment before using appropriated funding to enter into a grant or cooperative agreement with a corporation if the awarding official was aware that the corporation had an unpaid federal tax liability or was convicted of a felony criminal violation within the preceding 24 months. The FY 2012 provisions were in:

- Sections 8124 and 8125 of the Department of Defense Appropriations Act, 2012 (Division A of Pub. L. 112–74, the Consolidated Appropriations Act, 2012);
- Section 514 of the Military Construction and Veterans Affairs and Related Agencies Appropriations Act, 2012 (Division H of Pub. L. 112–74); and
- Sections 504 and 505 of the Energy and Water Development Appropriations Act, 2012 (Division B of Pub. L. 112–74).

Generally, the requirements related to these provisions of the FY 2012 appropriations acts have been included in each subsequent fiscal year's appropriations acts. Since FY 2015, the provisions related to felony convictions and unpaid federal tax liabilities have been enacted in the government-wide general provisions portion of the Financial Services and General Government Appropriations Act.

Affected Public: Not-For-Profit Institutions; Business or other for-profit.

Frequency: On occasion.

Respondent's Obligation: Required to Obtain or Retain Benefits.

OMB Desk Officer: Ms. Jasmeet Seehra.

Comments and recommendations on the proposed information collection should be emailed to Ms. Jasmeet Seehra, DoD Desk Officer, at *Oira_submission@omb.eop.gov.* Please identify the proposed information collection by DoD Desk Officer and the Docket ID number and title of the information collection.

You may also submit comments and recommendations, identified by Docket ID number and title, by the following method:

- *Federal eRulemaking Portal: http://www.regulations.gov.* Follow the instructions for submitting comments.

Instructions: All submissions received must include the agency name, Docket ID number and title for this **Federal Register** document. The general policy for comments and other submissions from members of the public is to make these submissions available for public viewing on the Internet at *http://www.regulations.gov* as they are received without change, including any personal identifiers or contact information.

DOD Clearance Officer: Mr. Frederick Licari.

Written requests for copies of the information collection proposal should be sent to Mr. Licari at WHS/ESD Directives Division, 4800 Mark Center Drive, East Tower, Suite 03F09, Alexandria, VA 22350–3100.

Dated: September 27, 2016.

Aaron Siegel,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 2016–23636 Filed 9–29–16; 8:45 am]

BILLING CODE 5001–06–P

DEPARTMENT OF DEFENSE

Department of the Navy

Notice of Availability and Notice of Public Meetings for the Draft Supplemental Environmental Impact Statement for Land Acquisition and Airspace Establishment To Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at the Marine Corps Air Ground Combat Center, Twentynine Palms, California

AGENCY: Department of the Navy, DoD.

ACTION: Notice.

SUMMARY: Pursuant to section (102)(2)(c) of the National Environmental Policy Act (NEPA) of 1969, and regulations implemented by the Council on Environmental Quality (40 Code of Federal Regulations [CFR] Parts 1500–1508), Department of Navy (DoN) NEPA regulations (32 CFR part 775) and U.S. Marine Corps (USMC) NEPA directives (Marine Corps Order P5090.2A, changes 1–3), the DoN has prepared and filed with the U.S. Environmental Protection Agency (EPA) a Draft Supplemental Environmental Impact Statement (EIS) evaluating the potential environmental impacts that may result from implementing alternative desert tortoise translocation plans at the Marine Corps Air Ground Combat Center, Twentynine Palms (hereinafter ''the Combat Center''). The Supplemental EIS is a supplement to the Final EIS for ''Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live Fire and Maneuver Training'' dated July 2012 (hereinafter ''2012 Final EIS'') (77 FR 44234).

With the filing of the Draft Supplemental EIS, the DoN is initiating a 45-day public comment period and has scheduled three public open house meetings to receive oral and written comments on the Draft Supplemental EIS. Federal, state and local agencies and interested parties are encouraged to provide comments in person at any of the public open house meetings, or in writing anytime during the public comment period. This notice announces the dates and locations of the public meetings and provides supplementary information about the environmental planning effort.

DATES: The Draft Supplemental EIS public review period will begin September 30, 2016, and end on November 14, 2016. The USMC is holding three informational open house style public meetings to inform the public about the proposed action and the alternatives under consideration, and to provide an opportunity for the public to comment on the proposed action, alternatives, and the adequacy and accuracy of the Draft Supplemental EIS. USMC representatives will be on hand to discuss and answer questions on the proposed action, the NEPA process and the findings presented in the Draft Supplemental EIS. Public open house meetings will be held:

(1) Tuesday, October 25, 2016, 5:00 p.m. to 8:00 p.m., at the Joshua Tree Community Center, 6171 Sunburst Avenue, Joshua Tree, CA 92252.

(2) Wednesday, October 26, 2016, 5:00 p.m. to 8:00 p.m., at the Palm Springs Convention Center, 277 N. Avenida Caballeros, Palm Springs, CA 92262.

(3) Thursday, October 27, 2016, 5:00 p.m. to 8:00 p.m., at the Barstow Harvey House, 681 N. 1st Avenue, Barstow, CA 92311.

Attendees will be able to submit written comments at the public meetings. A stenographer will be present to transcribe oral comments. Equal weight will be given to oral and written statements. All statements, oral transcription and written, submitted during the public review period will become part of the public record on the Draft Supplemental EIS and will be responded to in the Final Supplemental EIS. Comments may also be submitted

by U.S. mail or electronically via the project Web site provided below.

ADDRESSES: A copy of the Draft Supplemental EIS is available at the project Web site, *http://www.SEISforLAA.com,* and at the local libraries identified at the end of this notice. Comments on the Draft Supplemental EIS can be submitted via the project Web site or submitted in writing to: 29Palms SEIS Project Team, c/o Cardno Government Services, 3888 State Street, Ste. 201, Santa Barbara, CA 93105. All comments must be postmarked or received by November 14, 2016, to ensure they become part of the official record. All timely comments will be responded to in the Final Supplemental EIS.

FOR FURTHER INFORMATION CONTACT: The Resource Management Group at the Combat Center 760–830–3737.

SUPPLEMENTARY INFORMATION: A Notice of Intent to prepare the Supplemental EIS was published in the **Federal Register** on August 24, 2016 (Vol. 81, No. 164, p. 57891–57893).

Proposed Action

Pursuant to 40 CFR 1502.9(c), the Draft Supplemental EIS evaluates new information relevant to environmental concerns associated with translocation of tortoises from specific training areas on newly acquired lands. Translocation was deemed necessary to mitigate the moderate to high levels of impact on the tortoise population from the Marine Expeditionary Brigade (MEB) training activities assessed in the 2012 Final EIS. A 2012 Biological Opinion (hereinafter ''the 2012 BO'') issued by the United States Fish and Wildlife Service (USFWS) approved several conservation measures pertaining to the desert tortoise, including a 2011 General Translocation Plan (GTP). Since the 2012 Final EIS, and the subsequent Record of Decision (ROD) signed by the DON in February 2013 (hereinafter ''the 2013 ROD''), the Marine Corps has conducted additional detailed studies and worked cooperatively with the USFWS, the California Department of Fish and Wildlife (CDFW), and the Bureau of Land Management (BLM) on alternative translocation plans for the desert tortoise, as required in the 2012 BO.

The proposed action for this Supplemental EIS includes four fundamental and interrelated components that are reflected in all alternatives:

(1) *Recipient and Control Areas.* The 2011 GTP identified criteria for selection of recipient areas that should be met for successful translocation to occur. These criteria are consistent with the goals, objectives, and recovery strategies of the 2011 USFWS revised recovery plan for the Mojave population of the desert tortoise and the 2010 USFWS plan development guidance for translocation of desert tortoises.

(2) *Translocation Methods.* Translocation methods would include handling procedures, fencing, translocation, and clearance surveys. All tortoise handling would be accomplished by the techniques outlined in the Desert Tortoise Field Manual, including the most recent disease prevention techniques. Juvenile tortoises that are too small to wear transmitters would be moved to established juvenile pens at Tortoise Research and Captive Rearing Sites (TRACRS) or Special Use Areas where they may become part of the head start program (the Combat Center's tortoise rearing program). Tortoise exclusion fencing would be installed along certain borders of newly designated Special Use Areas (areas that have not been identified as part of the large-scale training scenarios and that contain habitat supporting desert tortoises) on Combat Center land near maneuver or high use areas.

Desert tortoises that exhibit moderate to severe nasal discharge would not be translocated, and may be sent to a USFWS-approved facility where they would undergo further assessment, treatment, and/or study. For up to the first 5 years following initial translocation, clearance surveys would be conducted in the high- and moderate-impact areas to locate and remove any remaining desert tortoises.

(3) *Post-Translocation Monitoring.* Radio-telemetry tracking of all translocated tortoises is impractical; however, 20 percent of translocated tortoises, and a similar number of resident and control tortoises, would be tracked using radio-telemetry. Repeated readings of mark-recapture plots where tortoises have been translocated would be conducted to yield information on survival of translocated tortoises, population demography, repatriation, and health. Mark-recapture plots would be used to estimate the tortoise population size by capturing, marking, and releasing a portion of the population, then later capturing another portion and counting the number of marked individuals. Capture, marking, and releasing activities would not involve any ground disturbance. Four subject areas would be investigated by monitoring, each of which is described below:

(a) *Survival:* Survival of translocated is the main metric for evaluating translocation as a take minimization measure. Survival of translocated tortoises would be measured using two methods: Mark-recapture plots and tracking.

(b) *Threats to survival:* Anthropogenic disturbances and predator populations that cause potential risks to recovery and translocation success threats would be assessed both qualitatively and quantitatively and compared to current levels.

(c) *Habitat stability/changes:* Habitat would be assessed to monitor changes or stability during each reading of the mark-recapture plots.

(d) *Health and disease:* The incidence of disease and other health issues would be monitored using body condition indices, clinical signs of disease, serology, and visual inspection for injuries. This would be accomplished using both telemetered tortoises and all tortoises captured on mark-recapture plots. Any health problems observed (*e.g.,* rapid declines in body condition, perceived outbreaks of disease, mortality events) would be reported to the USFWS, CDFW, and BLM such that appropriate actions could be taken in a timely manner.

(4) *Other Research.* The Marine Corps, in consultation with USFWS, identified a research program to benefit recovery of the species. Research topics include translocation effectiveness, constrained dispersal (''repatriation'' in the 2011 GTP), stocking densities, habitat, and disease.

Two main research topics that would be implemented are summarized below, both of which are anticipated to provide results that are topical and important for recovery.

(a) *Experimental Translocation Densities:* The intent behind this research is to evaluate the capability of the habitat to sustain a certain density of tortoises.

(b) *Constrained Dispersal:* Constrained dispersal (called ''repatriation'' in the 2011 GTP) is a technique wherein tortoises are translocated to a fenced site to encourage settling before the fence is removed.

Purpose and Need

The purpose of the proposed action evaluated in the Supplemental EIS is to study alternative translocation plans in support of the project that was described in the 2012 Final EIS, selected in the 2013 Record of Decision (ROD)(78 FR 11632), and authorized by the National Defense Authorization Act for Fiscal Year 2014. The 2011 GTP, developed during the section 7 Endangered Species Act (ESA) consultation on the 2012 Final EIS proposed action, identified proposed recipient areas, translocation methods,

and research treatments based on information available at the time of publication. Studies were planned over the following 3 years to provide information necessary to refine these areas, methods, and treatments. The 2011 GTP explicitly recognized that as a result of these studies, the Combat Center could refine these areas to specific sites and determine better recipient sites not considered in the 2011 GTP. The results of these efforts and further consultation with USFWS and CDFW, identified refinements to translocation methods, recipient sites, and research treatments that could better support the goals of the translocation effort (and became the basis for the action alternatives considered in this Supplemental EIS). The alternative selected in the ROD for the Supplemental EIS will be implemented prior to conducting sustained, combined-arms, live-fire, and maneuver field training for MEB-sized Marine Air Ground Task Forces (MAGTFs) contemplated in the 2012 Final EIS.

The Marine Corps needs to implement the proposed action to satisfy requirements identified in the 2012 Final EIS and associated 2012 BO. The 2012 BO concluded that the implementation of the Preferred Alternative from the 2012 Final EIS would likely result in the ''take'' of desert tortoises associated with military training, tortoise translocation efforts, and authorized and unauthorized Off-Highway Vehicle (OHV) use by recreationists displaced from former areas of the Johnson Valley OHV Area.

Alternatives Considered in the Draft Supplemental EIS

In light of the purpose and need for the proposed action, the DON has identified two potential action alternatives and a No-Action Alternative for the translocation of desert tortoise from training impact areas.

Each alternative includes recipient areas/sites (to which tortoises would be translocated) and control areas/sites (where the resident tortoise populations will be studied to provide comparative data on survival, threats to survival, habitat stability and changes, and health and disease relative to the translocated tortoise populations at the recipient sites). Each alternative also specifies the details of the proposed tortoise translocation, including specific handling procedures, fencing, clearance surveys, 30 years of post-translocation monitoring, and other research activities.

The Combat Center identified and applied screening criteria from the 2011 USFWS revised recovery plan for the Mojave population of the desert tortoise and the 2011 USFWS revised recovery plan development guidance for translocation of desert tortoises to evaluate and select the proposed recipient areas/sites under each alternative. These criteria relate to land use, habitat quality, population levels, disease prevalence, and distance from collection. The Combat Center also screened for research and monitoring feasibility.

Under the No-Action Alternative, the Marine Corps would conduct translocation of desert tortoises in accordance with the 2011 GTP described in the 2012 BO. Alternatives 1 and 2 primarily differ from the No-Action Alternative in the selection of proposed recipient and control areas and in the distribution of desert tortoises at each release site. Compared to the No-Action Alternative, Alternatives 1 and 2 would also include additional research studies and reflect updated information obtained from the 3-year program of surveys conducted since the 2012 Final EIS. Alternative 2 differs from Alternative 1 in that: (1) One less recipient site would be used; (2) the pairing of control sites to recipient sites would be different; (3) the Bullion control site would be located on the Combat Center instead of within the Cleghorn Lakes Wilderness Area; and (4) translocation densities would be different.

Environmental Effects Identified in the Draft Supplemental EIS

Potential impacts were evaluated in the Draft Supplemental EIS under all alternatives for the following resources: Biological resources, land use, air quality, and cultural resources. The Draft Supplemental EIS analysis evaluates direct, indirect, short-term and long-term impacts, as well as cumulative impacts from other relevant activities.

The Draft Supplemental EIS includes mitigation measures, special conservation measures, and features of project design to avoid or minimize potential impacts. The proposed action would fully comply with regulatory requirements for the protection of environmental resources. A desert tortoise translocation plan has been submitted to the USFWS in compliance with Section 7 of the ESA. The USFWS will issue a revised BO that will be included with the Final Supplemental EIS. In addition, the USMC is coordinating with the California State Historic Preservation Office and affected Native American tribes under Section 106 of the National Historic Preservation Act, and with the Mojave Desert Air Quality Management District under the Clean Air Act.

The proposed action would result in unavoidable impacts related to biological resources (due to desert tortoise translocation as well as impacts to vegetation and desert tortoise habitat resulting from construction of fences and associated maintenance roads); land use (due to desert tortoise translocation); air quality (due to air emissions from construction activities); and potentially cultural resources (due to the fence and road construction; although the fences/roads would be routed to avoid cultural resource sites).

Schedule: The Notice of Availability (NOA) and Notice of Public Meetings (NOPM) publication in the **Federal Register** and local print media starts the 45-day public comment period for the Draft Supplemental EIS. The DoN will consider and respond to all written, oral and electronic comments, submitted as described above, in the Final Supplemental EIS. The DoN intends to issue the Final Supplemental EIS in January 2017, at which time an NOA will be published in the **Federal Register** and local print media. A Record of Decision is expected to be published in February 2017.

Copies of the Draft Supplemental EIS can be found on the project Web site, *http://www.SEISforLAA.com* or at the following locations:

(1) Newton T. Bass Apple Valley Branch Library, 14901 Dale Evans Parkway, Apple Valley, CA 92307
(2) Barstow Branch Library, 304 E. Buena Vista St., Barstow, CA 92311
(3) Joshua Tree Library, 6465 Park Blvd., Joshua Tree, CA 92252
(4) Lucerne Valley Janice Horst Branch Library, 33103 Old Woman Springs Road, Lucerne Valley, CA 92356
(5) Needles Branch Library, 1111 Bailey Ave., Needles, CA 92363
(6) Ovitt Family Community Library, 215 E. C St., Ontario, CA 91764
(7) Stanley Mosk Library and Courts Building, 914 Capitol Mall, Sacramento, CA 95814
(8) San Bernardino County Library Administrative Offices, 777 E. Rialto Avenue, San Bernardino, CA 92415
(9) Twentynine Palms Library, 6078 Adobe Road, Twentynine Palms, CA 92277
(10) Victorville City Library, 15011 Circle Drive, Victorville, CA 92395
(11) Yucca Valley Branch Library, 57098 29 Palms Highway, Yucca Valley, CA 92284
(12) Palm Springs Public Library, 300 S. Sunrise Way, Palm Springs, CA 92262

Dated: September 26, 2016.

C. Mora,

Commander, Judge Advocate General's Corps, U.S. Navy, Federal Register Liaison Officer.

[FR Doc. 2016–23649 Filed 9–29–16; 8:45 am]

BILLING CODE 3810–FF–P

DEPARTMENT OF EDUCATION

[Docket No.: ED–2016–ICCD–0106]

Agency Information Collection Activities; Comment Request; Targeted Teacher Shortage Areas

AGENCY: Office of Postsecondary Education (OPE), Department of Education (ED).

ACTION: Notice.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. chapter 3501 *et seq.*), ED is proposing a revision of an existing information collection.

DATES: Interested persons are invited to submit comments on or before November 29, 2016.

ADDRESSES: To access and review all the documents related to the information collection listed in this notice, please use *http://www.regulations.gov* by searching the Docket ID number ED–2016–ICCD–0106. Comments submitted in response to this notice should be submitted electronically through the Federal eRulemaking Portal at *http://www.regulations.gov* by selecting the Docket ID number or via postal mail, commercial delivery, or hand delivery. *Please note that comments submitted by fax or email and those submitted after the comment period will not be accepted.* Written requests for information or comments submitted by postal mail or delivery should be addressed to the Director of the Information Collection Clearance Division, U.S. Department of Education, 400 Maryland Avenue SW., LBJ, Room 2E–347, Washington, DC 20202–4537.

FOR FURTHER INFORMATION CONTACT: For specific questions related to collection activities, please contact Freddie Cross, 202–453–7224.

SUPPLEMENTARY INFORMATION: The Department of Education (ED), in accordance with the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3506(c)(2)(A)), provides the general public and Federal agencies with an opportunity to comment on proposed, revised, and continuing collections of information. This helps the Department assess the impact of its information collection requirements and minimize the public's reporting burden. It also helps the public understand the Department's information collection requirements and provide the requested data in the desired format. ED is soliciting comments on the proposed information collection request (ICR) that is described below. The Department of Education is especially interested in public comment addressing the following issues: (1) Is this collection necessary to the proper functions of the Department; (2) will this information be processed and used in a timely manner; (3) is the estimate of burden accurate; (4) how might the Department enhance the quality, utility, and clarity of the information to be collected; and (5) how might the Department minimize the burden of this collection on the respondents, including through the use of information technology. Please note that written comments received in response to this notice will be considered public records.

Title of Collection: Targeted Teacher Shortage Areas.

OMB Control Number: 1840–0595.

Type of Review: A revision of an existing information collection.

Respondents/Affected Public: State, Local, and Tribal Governments.

Total Estimated Number of Annual Responses: 57.

Total Estimated Number of Annual Burden Hours: 4,275.

Abstract: This request is for approval of reporting requirements that are contained in the Federal Family Education Loan Program regulations which address the targeted teacher deferment provision of the Higher Education Act of 1965, as amended. The information collected is necessary for a state to support it's annual request for designation of teacher shortage areas within the state. In previous years, the data collection was conducted by paper and pencil, mail-in method. Beginning with the 2017 collection, data collection will be conducted completely online thus reducing burden to the respondents.

Dated: September 27, 2016.

Kate Mullan,

Acting Director, Information Collection Clearance Division, Office of the Chief Privacy Officer, Office of Management.

[FR Doc. 2016–23658 Filed 9–29–16; 8:45 am]

BILLING CODE 4000–01–P

DEPARTMENT OF ENERGY

[OE Docket No. EA–429]

Application To Export Electric Energy; CWP Energy

AGENCY: Office of Electricity Delivery and Energy Reliability, DOE.

ACTION: Notice of application.

SUMMARY: CWP Energy (Applicant or CWP Energy) has applied for authority to transmit electric energy from the United States to Mexico pursuant to section 202(e) of the Federal Power Act.

DATES: Comments, protests, or motions to intervene must be submitted on or before October 31, 2016.

ADDRESSES: Comments, protests, motions to intervene, or requests for more information should be addressed to: Office of Electricity Delivery and Energy Reliability, Mail Code: OE–20, U.S. Department of Energy, 1000 Independence Avenue SW., Washington, DC 20585–0350. Because of delays in handling conventional mail, it is recommended that documents be transmitted by overnight mail, by electronic mail to *Electricity.Exports@hq.doe.gov,* or by facsimile to 202–586–8008.

SUPPLEMENTARY INFORMATION: Exports of electricity from the United States to a foreign country are regulated by the Department of Energy (DOE) pursuant to sections 301(b) and 402(f) of the Department of Energy Organization Act (42 U.S.C. 7151(b), 7172(f)) and require authorization under section 202(e) of the Federal Power Act (16 U.S.C. 824a(e)).

On September 14, 2016, DOE received an application from CWP Energy for authority to transmit electric energy from the United States to Mexico as a power marketer for a five-year term using existing international transmission facilities.

In its application, CWP Energy states that it does not own or control any electric generation or transmission facilities, and it does not have a franchised service area. The electric energy that CWP Energy proposes to export to Mexico would be surplus energy purchased from third parties such as electric utilities and Federal power marketing agencies pursuant to voluntary agreements. The existing international transmission facilities to be utilized by the Applicant have previously been authorized by Presidential Permits issued pursuant to Executive Order 10485, as amended, and are appropriate for open access transmission by third parties.

Procedural Matters: Any person desiring to be heard in this proceeding should file a comment or protest to the application at the address provided above. Protests should be filed in accordance with Rule 211 of the Federal Energy Regulatory Commission's (FERC) Rules of Practice and Procedures (18 CFR 385.211). Any person desiring to

United States Marine Corps

Internet: http://www.29palms.marines.mil/

Public Affairs Office

P.O. Box 788200

Marine Corps Air Ground Combat Center

Twentynine Palms, CA 92278

For more information:

Phone: (760) 830-6213

PRESS RELEASE #16-011 Oct 11, 2016

FOR IMMEDIATE RELEASE

DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

MARINE CORPS AIR GROUND COMBAT CENTER TWENTYNINE PALMS, Calif. – The Draft Supplemental Environmental Impact Statement (SEIS) to evaluate the potential environmental effects of alternative desert tortoise translocation options at Marine Corps Air Ground Combat Center (MCAGCC) Twentynine Palms, CA is now available for public review and comment.

The SEIS analyzes the potential environmental impacts alternatives addressing different methodologies and locations for implementing a desert tortoise translocation program in support of training exercises on the newly acquired lands. Potential impacts for biological resources, land use and air quality are analyzed. Translocation of the desert tortoise is necessary to support recovery of the species while enabling training on newly-acquired training areas provided to MCAGCC in the FY 2014 Fiscal Year National Defense Authorization Act.

The Notice of Availability for the Draft Supplemental Environmental Impact Statement (SEIS) to the Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at MCAGCC, Twentynine Palms, California, was published in the Federal Register on September 30, 2016. In conjunction with the Draft SEIS Notice of Availability, the Department of the Navy published a Notice of Public Meetings on September 30, 2016.

The public has a review period of 45-day from September 30, 2016 to November 14, 2016, during which public information meetings will be held in the communities of Joshua Tree, Palm Springs and Barstow during this period:

Tuesday, October 25, 2016, 5:00pm – 8:00pm
Joshua Tree Community Center
6171 Sunburst Street
Joshua Tree, CA 92252

Wednesday, October 26, 2016, 5:00pm – 8:00pm
Palm Springs Convention Center
277 N. Avenida Caballeros
Palm Springs, CA 92262

Thursday, October 27, 2016, 5:00pm – 8:00pm
Barstow Harvey House
681 N. 1st Avenue
Barstow, CA 92311

Comments can be made at the meetings and also through the website: http://www.SEISforLAA.com, or by mail to the following address:

29Palms SEIS Project Team
c/o Cardno Government Services
3888 State Street, Ste. 201
Santa Barbara, CA 93105

In addition, persons who wish to be added to the mailing list may send a request to the SEIS project manager at the above address. For more information, please visit the project website at http://www.SEISforLAA.com or call the Resource Management Group at (760) 830-3737.

UNITED STATES MARINE CORPS
G-5 GOVERNMENT AND EXTERNAL AFFAIRS
MARINE AIR GROUND TASK FORCE TRAINING COMMAND
MARINE CORPS AIR GROUND COMBAT CENTER
BOX 788105
TWENTYNINE PALMS, CALIFORNIA 92278-8105

5000
5A
29 Sep 16

Dear Sir or Madam:

SUBJECT: NOTICE OF PUBLIC MEETINGS AND AVAILABILITY OF SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR LAND ACQUISITION AND AIRSPACE RESTABLISHMENT TO SUPPORT LARGE-SCALE MARINE AIR GROUND TASK FORCE, LIVE-FIRE AND MANEUVER TRAINING, MARINE CORPS AIR GROUND COMBAT CENTER

The Department of the Navy has prepared a Draft Supplemental Environmental Impact Statement (SEIS) to study the impacts of alternative plans for translocating desert tortoises from specific newly-acquired training areas before planned Marine Expeditionary Brigade-level training activities are conducted. The land acquisition and training activities were assessed in the 2012 Final EIS for Land Acquisition/Airspace Establishment at the Marine Corps Air Ground Combat Center, Twentynine Palms.

The Draft SEIS is scheduled for public release and 45-day public review starting on September 30, 2016. A Notice of Availability of the Draft Supplemental EIS will be published in the Federal Register. The Draft Supplemental EIS is posted in electronic format on the "Documents" portion of the project website: http://www.SEISforLAA.com and is available for public review at the following local libraries starting September 30, 2016:

Newton T. Bass Apple Valley Library
Barstow Branch Library
Palm Springs Public Library
Stanley Mosk Library and Courts Building
San Bernardino County Library Administrative Offices
Twentynine Palms Library
Victorville City Library
Yucca Valley Branch Library
Joshua Tree Library
Lucerne Valley Janice Horst Branch Library
Needles Branch Library
Ovitt Family Community Library

The public may submit comments on the Draft SEIS in the following ways:

1. Review the Draft SEIS online at http://www.SEISforLAA.com and submit comments electronically by using the comment form on the website.

2. Mail written comments to:

29Palms SEIS Project Team
c/o Cardno Government Services
3888 State Street, Ste. 201
Santa Barbara, CA 93105

3. Attend one of the public meetings and submit a comment form or provide comments verbally to a certified court reporter, who will provide certified transcripts of all spoken comments received at each meeting.

The three (3) public information meetings will be held in the communities of Joshua Tree, Palm Springs, and Barstow as shown below. The Combat Center invites you to attend any of the open-house public meetings at the locations and times shown below. The purpose of both the public comment period and public meetings is to provide you with opportunities to comment on the content, adequacy, and accuracy of the Draft SEIS.

Public Meeting Locations:

DATE/TIME	LOCATION	ADDRESS
TUE, OCT 25, 2016 5 - 8 p.m.	Joshua Tree Community Center	6171 Sunburst St. Joshua Tree, CA 92252
WED, OCT 26, 2016 5 - 8 p.m.	Palm Springs Convention Center	277 N. Avenida Caballeros Palm Springs, CA 92262
THU, OCT 27, 2016 5 - 8 p.m.	Barstow Harvey House	681 N. 1st Ave. Barstow, CA 92311

If you have any questions, please call 760-830-3737.

The U.S. Marine Corps thank you for your time and participation in the NEPA process for the SEIS. For more information, please visit the project website at http://www.SEISforLAA.com or call the Resource Management Group at (760) 830-3737.

Sincerely,

E. M. ADAMS
Deputy Assistant Chief of Staff, G-5

Draft Supplemental EIS

Marine Corps Air Ground Combat Center

Read the SEIS at www.SEISforLAA.com or at public libraries in Apple Valley; Barstow; Palm Springs (Sunrise Way); San Bernardino (Administrative Offices); Twentynine Palms; Victorville (Circle Dr.); Yucca Valley; Joshua Tree; Lucerne Valley; Needles; Ontario (C Street); and Sacramento (Capitol Mall).

Visit **www.SEISforLAA.com** or call (760) 830-3737 to learn more about the SEIS or submit comments online.

29Palms SEIS Project Team
c/o Cardno Government Services
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Draft Supplemental EIS

Marine Corps Air Ground Combat Center

Open House
Public Meetings
5 to 8 p.m.
There will not be a formal presentation.

Joshua Tree
Tuesday, Oct. 25, 2016
Joshua Tree
Community Center
6171 Sunburst St.
Joshua Tree, CA 92252

Palm Springs
Wednesday, Oct. 26, 2016
Palms Springs
Convention Center
277 N. Avenida Caballeros
Palm Springs, CA 92262

Barstow
Thursday, Oct. 27, 2016
Barstow Harvey House
681 N. 1st Ave.
Barstow, CA 92311

A Draft Supplemental Environmental Impact Statement (SEIS) has been prepared to study alternative plans for translocating tortoises from specific newly-acquired training areas following the July 2012 Final EIS for Land Acquisition/Airspace Establishment at Marine Corps Air Ground Combat Center at Twentynine Palms.

THE MARINE CORPS REQUESTS YOUR PARTICIPATION

- **Read** the Draft SEIS at any of 12 community libraries listed on this card or download it from the project website at **www.SEISforLAA.com**. You can submit comments about the Draft SEIS on the website.
- **Attend** any of the three open house public meetings. Project team members will be available to discuss the translocation alternatives and potential impacts, and you can provide written or verbal comments.
- **Mail** written comments about the Draft SEIS to:
  29Palms SEIS Project Team
  c/o Cardno Government Services
  3888 State Street, Ste. 201
  Santa Barbara, CA 93105

All comments must be postmarked or received by November 14, 2016 for inclusion in the Final SEIS.

Visit **www.SEISforLAA.com** or call (760) 830-3737 to learn more about the SEIS.

The Marine Corps invites you to comment on a Draft Supplemental Environmental Impact Statement (EIS) and attend public information meetings

A Draft Supplemental Environmental Impact Statement (SEIS) has been prepared to study alternative plans for translocating tortoises from specific newly-acquired training areas following the July 2012 Final EIS for Land Acquisition/Airspace Establishment at Marine Corps Air Ground Combat Center at Twentynine Palms.

The Marine Corps welcomes your participation!

Comments will be accepted during the public meetings, by mail, or online at **www.SEISforLAA.com**.

Submit written comments to:
29Palms SEIS Project Team
c/o Cardno Government Services
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Comments on the Draft SEIS must be received or postmarked by November 14, 2016, for consideration in the Final SEIS.

The Draft SEIS is available on the website and at public libraries in Apple Valley; Barstow; Palm Springs (Sunrise Way); San Bernardino (Administrative Offices); Twentynine Palms; Victorville (Circle Dr.); Yucca Valley; Joshua Tree; Lucerne Valley; Needles; Ontario (C Street); and Sacramento (Capitol Mall).

OPEN HOUSE PUBLIC MEETINGS
5 8 p.m.

Joshua Tree
Tuesday, Oct. 25, 2016
Joshua Tree Community Center
6171 Sunburst St.

Palm Springs
Wednesday, Oct. 26, 2016
Palms Springs Convention Center
277 N. Avenida Caballeros

Barstow
Thursday, Oct. 27, 2016
Barstow Harvey House
681 N. 1st Ave.

There will not be a formal presentation.

For more information visit: **www.SEISforLAA.com**

The Marine Corps invites you to comment on a Draft Supplemental Environmental Impact Statement (EIS) and attend public information meetings

A Draft Supplemental Environmental Impact Statement (SEIS) has been prepared to study alternative plans for translocating tortoises from specific newly-acquired training areas following the July 2012 Final EIS for Land Acquisition/Airspace Establishment at Marine Corps Air Ground Combat Center at Twentynine Palms.

The Marine Corps welcomes your participation!

Comments will be accepted during the public meetings, by mail, or online at **www.SEISforLAA.com**.

Submit written comments to:
29Palms SEIS Project Team
c/o Cardno Government Services
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Comments on the Draft SEIS must be received or postmarked by November 14, 2016, for consideration in the Final SEIS.

The Draft SEIS is available on the website and at public libraries in Apple Valley; Barstow; Palm Springs (Sunrise Way); San Bernardino (Administrative Offices); Twentynine Palms; Victorville (Circle Dr.); Yucca Valley; Joshua Tree; Lucerne Valley; Needles; Ontario (C Street); and Sacramento (Capitol Mall).

OPEN HOUSE PUBLIC MEETINGS
5 – 8 p.m.

Joshua Tree
Tuesday, Oct. 25, 2016
Joshua Tree Community Center
6171 Sunburst St.

Palm Springs
Wednesday, Oct. 26, 2016
Palms Springs Convention Center
277 N. Avenida Caballeros

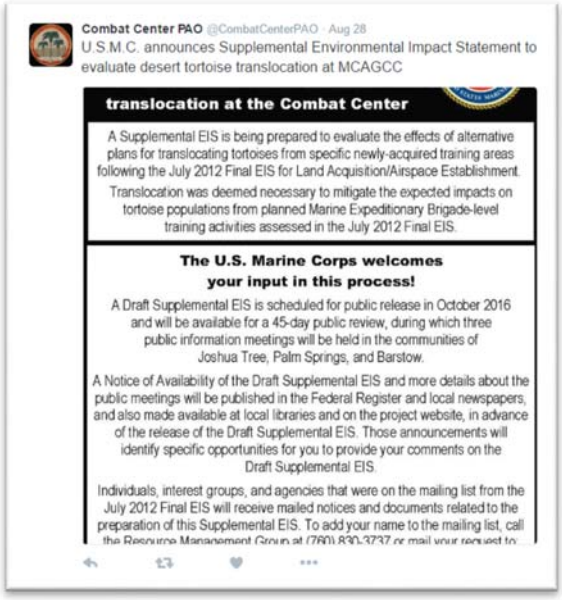
Barstow
Thursday, Oct. 27, 2016
Barstow Harvey House
681 N. 1st Ave.

There will not be a formal presentation.

For more information visit: **www.SEISforLAA.com**

Twitter Statistics for SEIS Public Meetings

Twitter Post 28 Aug 2016:



Combat Center PAO @CombatCenterPAO · Aug 28

U.S.M.C. announces Supplemental Environmental Impact Statement to evaluate desert tortoise translocation at MCAGCC

translocation at the Combat Center

A Supplemental EIS is being prepared to evaluate the effects of alternative plans for translocating tortoises from specific newly-acquired training areas following the July 2012 Final EIS for Land Acquisition/Airspace Establishment.

Translocation was deemed necessary to mitigate the expected impacts on tortoise populations from planned Marine Expeditionary Brigade-level training activities assessed in the July 2012 Final EIS.

The U.S. Marine Corps welcomes your input in this process!

A Draft Supplemental EIS is scheduled for public release in October 2016 and will be available for a 45-day public review, during which three public information meetings will be held in the communities of Joshua Tree, Palm Springs, and Barstow.

A Notice of Availability of the Draft Supplemental EIS and more details about the public meetings will be published in the Federal Register and local newspapers, and also made available at local libraries and on the project website, in advance of the release of the Draft Supplemental EIS. Those announcements will identify specific opportunities for you to provide your comments on the Draft Supplemental EIS.

Individuals, interest groups, and agencies that were on the mailing list from the July 2012 Final EIS will receive mailed notices and documents related to the preparation of this Supplemental EIS. To add your name to the mailing list, call the Resource Management Group at (760) 830-3737 or mail your request to:

Twitter Post 11 Oct 2016:

Combat Center PAO @CombatCenterPAO · Oct 11

Public information meetings on the Draft SEIS are coming up!

Supplemental Environmental Impact Statement

Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training, at Marine Corps Air Ground Combat Center, Twentynine Palms, CA

Desert Tortoise Translocation

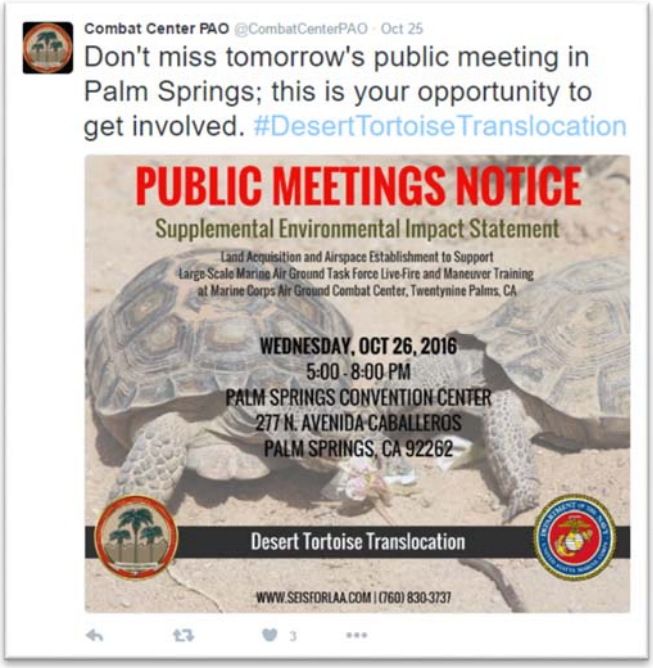
TUESDAY, OCT 25, 2016
5:00 - 8:00 PM
Joshua Tree Community Center
6171 Sunburst St Joshua Tree, CA 92252

WEDNESDAY, OCT 26, 2016
5:00 - 8:00 PM
Palm Springs Convention Center
277 N. Avenida Caballeros Palm Springs, CA 92262

Twitter Post 12 Oct 2016:

Twitter Post 24 Oct 2016:

Twitter Post 25 Oct 2016: 3 likes



This page intentionally left blank.

APPENDIX C
AGENCY CORRESPONDENCE

This page intentionally left blank.

UNITED STATES MARINE CORPS
MARINE AIR GROUND TASK FORCE TRAINING COMMAND
MARINE CORPS AIR GROUND COMBAT CENTER
BOX 788110
TWENTYNINE PALMS, CALIFORNIA 92278-8110

5750
4E/c-16-0201
January 25, 2016

Ms. Julianne Polanco
State Historic Preservation Officer
Office of Historic Preservation
Department of Parks and Recreation
1725 23rd St. #100
Sacramento, CA 95816

SUBJECT: SIGNAGE AND FENCING FOR LANDEX TORTOISE TRANSLOCATION ABOARD THE MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, SAN BERNARDINO COUNTY, CALIFORNIA

The Marine Corps is providing for your review and concurrence, information regarding the proposed undertaking to install signs and tortoise exclusion fencing within multiple Training Areas (TAs) aboard the Marine Corps Air Ground Combat Center (Combat Center), Twentynine Palms, California.

The project consists of emplacing standard tortoise exclusion fencing and/or three-strand twisted wire fence at locations depicted in Enclosure 1, Maps 1-6 and Table 1. A permanent maintenance road five meters wide will be constructed along the fence line where terrain permits. Trenches required for emplacement of tortoise exclusion fencing will be excavated 4-6 inches (10.2 - 15.4 cm) wide by 12 inches (30.7cm) deep. Temporary laydown areas will be placed within five meters of the maintenance road.

The Marine Corps has determined the Area of Potential Effect (APE) as a 100-meter wide strip along the proposed fence line (50 meters on each side) to take into account terrain considerations when placing the signs and trenching for the fence.

Some portions of the APE have been surveyed (see Enclosure 1: Maps 1-6; Table 2). These reports are among those provided to all consulting tribal groups as well as the California State Historic Preservation Office. One archaeological site (CA-SBR-12950) has been identified within the APE. The site, a Saratoga Springs period complex occupation, was evaluated in 2013 by Far Western Anthropological Research Group, Inc. (CRR214) and was recommended as eligible for National Register Listing under Criterion D. Intact cultural deposits appear to be artifact rich and contain at least one dateable feature. The site will be avoided and will be monitored by a Natural Resources Environmental Affairs (NREA)-approved archaeologist.

The Marine Corps has applied the criteria of adverse effect (36 CFR §800.5(a)) and has determined that this undertaking will not

adversely affect (alter, directly or indirectly) any characteristics of a historic property that qualify it for inclusion in the National Register of Historic Places or in a manner that would diminish the property's integrity for the following reason:

a. The Marine Corps will provide for an archaeological monitor to be present for all sign and post emplacement as well as all trenching for tortoise exclusion fencing. The monitor will ensure that no signs, posts, or trenches will be placed in a manner that would disturb any archaeological feature.

b. Any new archaeological site will be recorded at the primary record level, its location entered into the Combat Center's Geographic Information System database, and the site reported to the cultural resources staff. The monitor will ensure that no signs, posts, or trenches will be placed in a manner that would disturb any archaeological feature.

c. Laydown areas will be restricted to the defined APE and placement will be monitored by the archaeological monitor to ensure no cultural resources are present.

Full project packets, including project description, are being provided to the following tribes this date: Agua Caliente Band of Cahuilla Indians, Chemehuevi Indian Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, Morongo Band of Mission Indians, San Manuel Band of Mission Indians, and the Twentynine Palms Band of Mission Indians. According to the Native American Heritage Commission and past consultation with the aforementioned tribes, there are no sacred sites in the proposed project area.

The enclosed documentation satisfies requirements set forth in CFR 800.11(d). After consideration, the Marine Corps has reached a finding of "no historic properties adversely affected." The Marine Corps requests concurrence with this finding. The Marine Corps also requests the State Historic Preservation Officer concur with our determination of CA-SBR-12950 as eligible for listing in the National Register of Historic Places.

5750
4E/c-16-0201
January 25, 2016

Please feel free to contact the Combat Center Cultural Resources Manager, Ms. Leslie Glover, at 760-830-5369 (leslie.glover@usmc.mil), or Dr. John Hale at 760-830-7641 (john.p.hale@usmc.mil), with any questions or concerns.

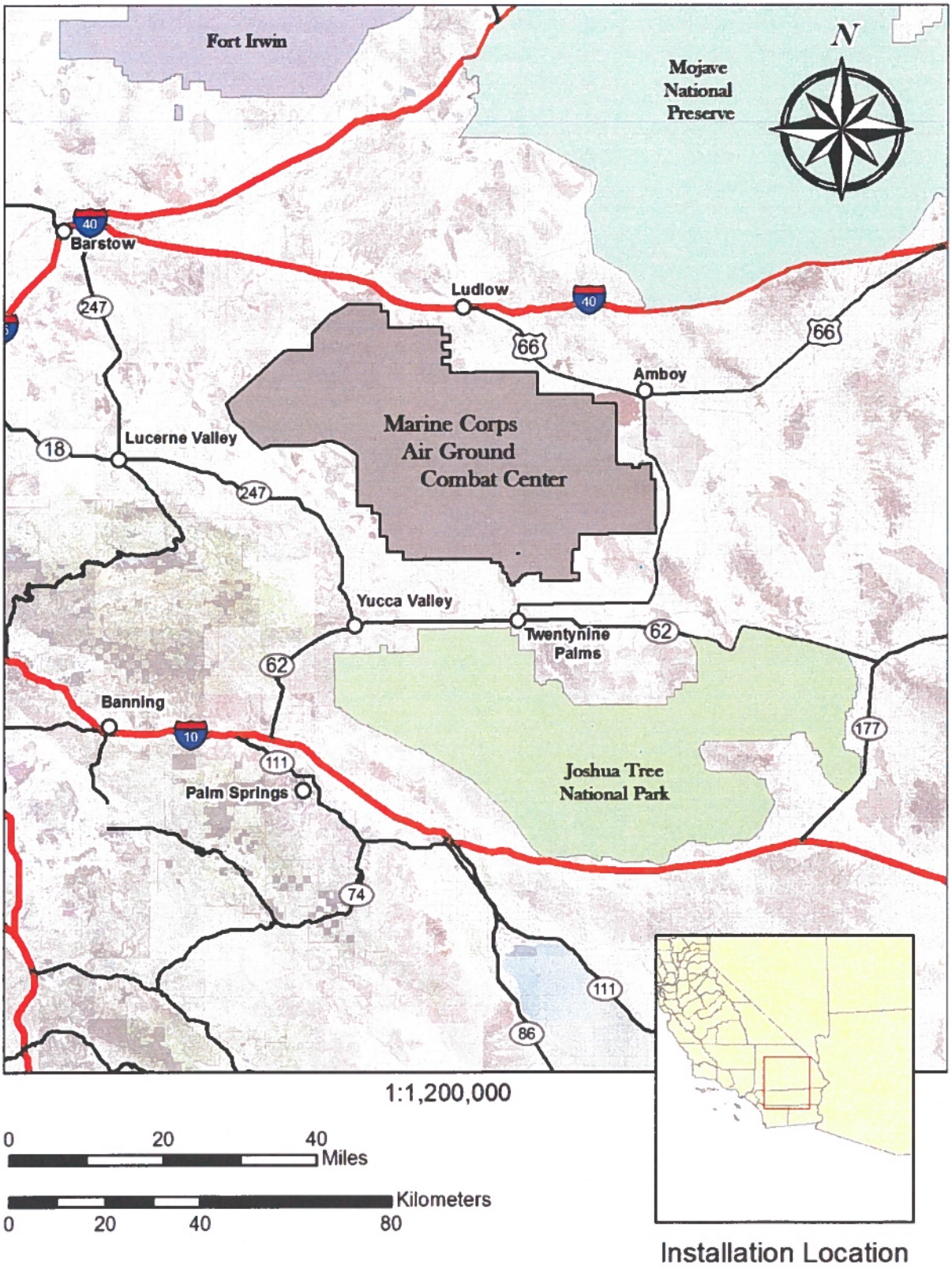
Sincerely,

R. W. LUZIER
Deputy Director, NREA

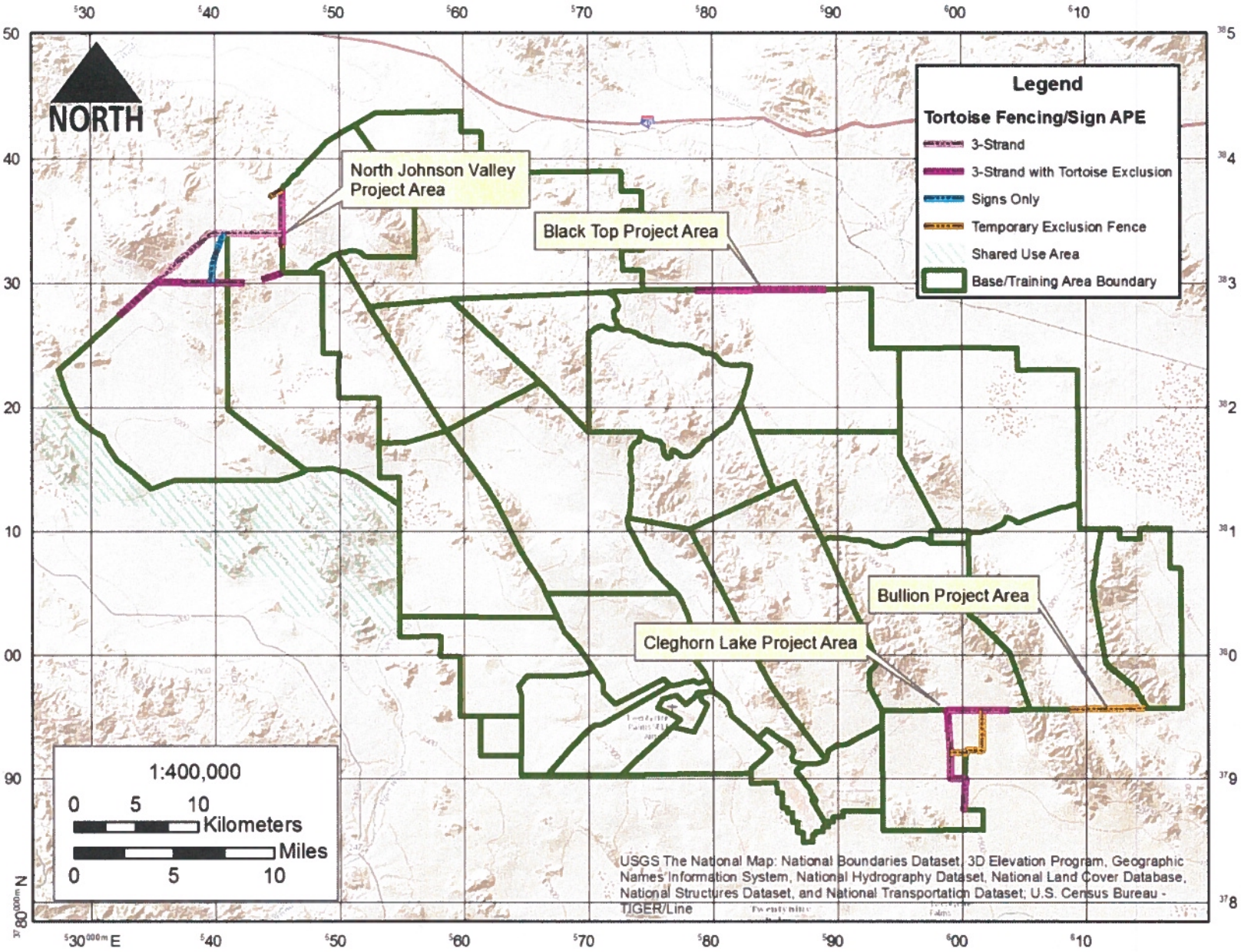
Enclosures: 1. Project Maps
2. Project Table

Copy to: AC/S G-4
NREA Files/Conservation
Mr. Ed Carroll, CA SHPO
Agua Caliente Band of Cahuilla Indians
Chemehuevi Indian Tribe
Colorado River Indian Tribes
Fort Mojave Indian Tribe
Morongo Band of Mission Indians
San Manuel Band of Serrano Mission Indians
Twentynine Palms Band of Mission Indians

Map 1. Installation Location



Map 2. Project Overview



OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

February 16, 2016

Reply in Reference To: USMC_2016_0126_001

Mr. R. W. Luzier, Deputy Director
Natural Resources and Environmental Affairs Division
Marine Corps Air Ground Combat Center
United States Marine Corps
Box 788110
Twentynine Palms, California 92278-8110

Re: Signage and Fencing for Landex Tortoise Translocation Aboard the Marine Corps Air Ground Combat Center, Twentynine Palms, San Bernardino County, California (your letter 5750, 4E/c-16-0201 of January 25, 2016 and two supplemental e-mails of February 3, 2016))

Dear Mr. Luzier:

Thank you for initiating consultation regarding the United States Marine Corps' efforts to comply with Section 106 of the *National Historic Preservation Act of 1966* (54 U.S.C. § 306108), as amended, and its implementing regulation found at 36 CFR Part 800. Marine Corps Air Ground Combat Center (MCAGCC) Twentynine Palms proposes to construct or install one of the following actions at four different training areas: (1) construction of standard tortoise exclusion fencing, (2) construction of three-strand twisted wire fencing, (3) construction of temporary exclusion fencing, or (4) installation of signs only.

The proposed undertaking will consist of the following components:

- Construction of the standard tortoise exclusion fencing will require the excavation of trenches measuring 4 to 6 inches wide and 12 inches deep;
- Construction of the three-strand twisted wire fencing will use t-posts and then the wire will be strung between the posts;
- The temporary exclusion fencing will be similar to the three-strand twisted wire fencing;
- The signs will be mounted on posts; and
- The active working areas and temporary laydown areas will be located within five meters of the fencing or signs.

The area of potential effects (APE) is 44.6 miles long collectively and the lengths of the individual components are as follows: (standard tortoise exclusion fencing – 30.2 miles, three-strand twisted wire fencing – 7.2 miles, temporary exclusive fencing – 4.6 miles, and signs only – 2.6 miles). Access to the APE will be by existing roads.

A records review was conducted at the Cultural Resources Section of the Natural Resources and Environmental Affairs (NREA) Division at MCAGCC, which identified that the APE had been previously surveyed by NREA's personnel or contractors. Those nine surveys identified only one archaeological site (CA-SBR-12950) as being located in the APE. That site was evaluated by Far Western Anthropological Research Group in 2013, who concluded that it was a Saratoga Springs period complex occupation site and that it was eligible for listing on the National Register of Historic Places under Criterion D.

MCAGCC has determined that the proposed undertaking will proceed under the following conditions:

- CA-SBR-12950 will be flagged and it will be monitored by a NREA-approved archaeologist to ensure that it is not inadvertently disturbed or affected;
- Archaeological monitors will be present during all sign and post emplacements as well as the trenching to ensure that no cultural resources are disturbed;
- Any new archaeological sites will be recorded and entered into the both NREA's and the State's databases; and
- Laydown areas will be restricted to the defined APE and placement will be monitored by archaeological monitors to ensure that no cultural resources are disturbed.

MCAGCC consulted with 7 tribal governments or groups and the Native American Heritage Commission (NAHC) in regards to the proposed undertaking. No sacred sites were identified by NAHC and none of the tribes had any comments in regards to the proposed undertaking.

Based on the records review, the pedestrian surveys, and the tribal consultations, MCAGCC has concluded that a finding of No Adverse Effect is appropriate for this proposed undertaking. MCAGCC has requested me to concur with their identification of the APE and their finding of No Adverse Effect.

After reviewing your letter of January 25, 2016 and the supplemental e-mails, I have the following comments:

(1) I have no objections to your identification and delineation of the APE, pursuant to 36 CFR Parts 800.4(a)(1) and 800.16(d);
(2) I concur with your decision to conduct the proposed undertaking in accordance with the four conditions described above; and
(3) I do not object to your finding of No Adverse Effect for this proposed undertaking.

Be advised that under certain circumstances, such as an unanticipated discovery or a change in project description, you may have additional future responsibilities for this proposed undertaking under 36 CFR Part 800. Should you encounter cultural artifacts during ground disturbing activities, please halt all work until a qualified archaeologist can be consulted on the nature and significance of such artifacts.

Thank you for seeking my comments and considering historic properties as part of your project planning. If you have any questions or concerns, please contact either of the following members of my staff: Ed Carroll at (916) 445-7006 or at e-mail at Ed.Carroll@parks.ca.gov or Duane Marti at (916) 445-7030 or at email at Duane.Marti@parks.ca.gov.

Sincerely,

Julianne Polanco
State Historic Preservation Officer

UNITED STATES MARINE CORPS
MARINE AIR GROUND TASK FORCE TRAINING COMMAND
MARINE CORPS AIR GROUND COMBAT CENTER
BOX 788100
TWENTYNINE PALMS, CALIFORNIA 92278-8100

5090
4E
AUG 12 2016

Tom Zale, Acting District Manager
California Desert District
Bureau of Land Management
22835 Calle San Juan De Los Lagos
Moreno Valley, CA 92553

Dear Mr. Zale:

SUBJECT: COOPERATING AGENCY REQUEST

In accordance with the National Environmental Policy Act (NEPA), the Department of the Navy (DON) intends to prepare a Supplemental Environmental Impact Statement (SEIS) to assess the potential environmental consequences of proposed revisions to the Desert Tortoise Translocation program in and around the Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter referred to as "Combat Center"). The proposed desert tortoise (*Gopherus agassizii*) translocation program and the SEIS are associated with the 2012 Environmental Impact Statement (EIS) for *Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live Fire and Maneuver Training* ("2012 EIS") and the DON's Record of Decision (ROD) signed in February 2013.

The 2013 ROD documented the DON's decisions regarding establishment of a large-scale Marine Air Ground Task Force (MAGTF) training facility at the Combat Center. The purpose of the proposed action as described in the 2012 Final EIS was to accommodate sustained, combined-arms, live-fire, and maneuver training for all elements of a Marine Expeditionary Brigade (MEB)-sized MAGTF. The action was needed because existing facilities, ranges, and live-fire ground and air maneuver areas were inadequate to support the Marine Corps' requirement for MEB-sized training exercises.

A General Translocation Plan (GTP) for Desert Tortoises and a Biological Assessment were prepared in support of the 2012 Final EIS. The intent of the GTP was to provide for the translocation of tortoises from training areas in the proposed Western Expansion Area and Southern Expansion Area that would experience high to moderate levels of impact from the proposed training activities. In July 2012, the United States Fish and Wildlife Service (USFWS) issued a Biological Opinion ("the 2012 BO") that identified conservation and mitigation measures the United States Marine Corps (USMC) would need to implement to minimize the rate of mortality or injury to resident desert tortoises, including developing a detailed plan to translocate desert tortoises from areas that would experience impacts from training. Since the 2012 Final EIS and 2013 ROD, the USMC has conducted the required detailed studies and has worked cooperatively with USFWS and the Bureau of Land Management (BLM) to identify the details of alternative translocation plans for the desert tortoise, as required in the 2012 BO and the 2013 ROD. In light of this new information, the DON has elected to prepare an SEIS evaluating the potential impacts of alternative tortoise relocation plans.

To adequately evaluate the potential environmental effects of the proposed action (and in accordance with 40 Code of Federal Regulations Part 1500 and Council on Environmental Quality guidance on Cooperating Agencies), the USMC as the SEIS lead agency requests that the BLM serve as a 'cooperating agency' for the development of this SEIS, as it did for the 2012 Final EIS.

The purpose of the proposed action evaluated in this SEIS is to improve the long-term success of desert tortoise translocation. The proposed action is needed to satisfy mitigation requirements identified in the 2012 Final EIS and associated 2012 BO.

The 2013 ROD committed the USMC to the following measures from the 2012 BO issued by the USFWS:

- New Special Use Areas
- Translocation Program
- Desert Tortoise "Headstarting" and Population Augmentation
- Monitoring

Impacts and issues to be addressed in the SEIS include, but are not limited to, the following resource areas: biological resources, land use, and air quality. The SEIS will include an evaluation of the proposed action's direct and indirect impacts, and will account for cumulative impacts from other relevant activities in the area of the Combat Center. Additionally, the DON will undertake any consultations required by applicable laws or regulations, including Tribal consultations.

As the lead program office, the USMC will be responsible for overseeing preparation of the SEIS. The USMC requests that the BLM, as a cooperating agency, support preparation of the SEIS in the following manner to support the expedited preparation of this SEIS with a ROD anticipated in February 2017:

- Participate in a timely and effective manner in the USMC's regulatory responsibilities;
- Advise lead program office on the scope of the proposal and analysis to be included in the SEIS;
- Provide comments on working drafts of the SEIS in accordance with the SEIS Project Schedule (enclosure 1);
- Participate in over-the-shoulder format team reviews of document iterations for expediency;
- Respond to the lead office requests for information. Timely input will be critical to ensure a successful NEPA process;
- Participate, as necessary, in discussions on SEIS-related issues; and
- Adhere to the overall schedule as set forth by the lead program office.

Please provide a response within 5 days of receipt of this letter indicating whether you accept our request that BLM serve as a cooperating agency and your point of contact for all SEIS-related matters.

5090
4E
AUG 12 2016

Should you have any questions please do not hesitate to contact me. My staff point of contact is Mr. Scott Kerr: scott.kerr@usmc.mil, (760) 830-8190.

Sincerely,

J. F. HARP
Chief of Staff

Enclosures: Project Schedule for Supplemental EIS (SEIS)

Copy to:
Katrina Symons, Field Manager
Bureau of Land Management
Barstow Field Office
2601 Barstow Road
Barstow CA 92311

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
California Desert District Office
22835 Calle San Juan De Los Lagos
Moreno Valley, CA 92553
www.blm.gov/ca/cdd

In Reply Refer To:
1795 - P
CAD01000

August 18, 2016

Colonel James F. Harp
United States Marine Corps
Marine Air Task Force Training Command
Marine Corps Air Ground Combat Center
Box 788100
Twentynine Palms, CA 92778

Dear Colonel Harp,

On August 18, 2016, the Bureau of Land Management (BLM) received your letter requesting that we become a cooperating agency for the Department of the Navy's Supplemental Environmental Impact Statement (SEIS) to assess the potential environmental consequences of the proposed revisions to the Desert Tortoise Translocation program in and around the Marine Corps Air Ground Combat Center.

By this letter, the BLM accepts your request to be a cooperating agency for the SEIS. The BLM understands that the United States Marine Corps (USMC) will be the lead agency, responsible for the preparation of the SEIS and the BLM, as a cooperating agency, will support the preparation of the SEIS in the following manner:

- Participate in a timely and effective manner in the USMC's regulatory responsibilities;
- Advise lead program office on the scope of the proposal and analysis to be included in the SEIS;
- Provide comments on administrative/working drafts of the SEIS in accordance with the SEIS project schedule;
- Participate in the "over-the-shoulder" format team reviews of document iterations for expediency;
- Respond to lead office requests for information;
- Participate, as necessary, in discussions on SEIS-related issues; and,
- Adhere to the overall schedule as set forth by the lead agency.

The BLM looks forward to helping the USMC in developing a Memorandum of Understanding (MOU) that defines the roles and responsibilities of each agency in this endeavor.

Should you have any questions please do not hesitate to contact me or my staff point of contact – Deputy District Manager for Resources, Mr. Greg Miller: gmiller@blm.gov or 951-697-5216.

Sincerely,

Thomas F. Zale
Acting District Manager

Mojave Desert Air Quality Management District
14306 Park Avenue, Victorville, CA 92392-2310
760.245.1661 • fax 760.245.2699
Visit our web site: http://www.mdaqmd.ca.gov
Brad Poiriez, Executive Director

October 20, 2016

29Palms SEIS Project Team
c/o Cardno Government Services
3888 State Street, Suite 201
Santa Barbara, CA 93105

Project: Draft Supplemental Environmental Statement

Dear Ms. Adams:

The Mojave Desert Air Quality Management District (District) has received an SEIS for studying alternative plans for translocating tortoises from specific newly acquired training areas following the July 2012 Final EIS for Land Acquisition/Airspace Establishment at Marine Corps Air Ground Combat Center at Twentynine Palms.

The District concurs with Air Quality mitigation noted in ES3.4.

Thank you for the opportunity to review this planning document. If you have any questions regarding this letter, please contact me at (760) 245-1661, extension 6726, or Tracy Walters at extension 6122.

Sincerely,

Alan J. De Salvio
Deputy Director – Mojave Desert Operations

AJD/tw MCAGCC Tortoise Translocation SEIS

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Pacific Southwest Region
333 Bush Street, Suite 515
San Francisco, CA 94104

IN REPLY REFER TO:
(ER 16/0533)

Filed Electronically

10 November 2016

Jesse Martinez
Project Manager
Department of the Navy Naval Facilities Engineering Command Southwest
1220 Pacific Highway
San Diego, CA 92132

Subject: Draft Supplemental Environmental Impact Statement by the U.S. Marine Corps and Department of the Navy regarding Tortoise Translocation for the Land Acquisition and Airspace Establishment Project to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training, Marine Corps Air Ground Combat Center, Twentynine Palms; San Bernardino County, California.

Dear Mr. Martinez,

The Department of the Interior has received and reviewed the subject document and has no comments to offer.

Thank you for the opportunity to review this project.

Sincerely,

Patricia Sanderson Port
Regional Environmental Officer

cc: OEPC - Staff Contact: cheryl_kelly@ios.doi.gov, 202-208-7565

State of California - Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Inland Deserts Region
3602 Inland Empire Blvd., Suite C-220
Ontario, CA 91764
(909) 484-0459
www.wildlife.ca.gov

***EDMUND G. BROWN, Jr.**, Governor*
CHARLTON H. BONHAM, Director

November 14, 2016

Department of the Navy
Naval Facilities Engineering Command Southwest Central Integrated Product Teams
Mr. Jesse Martinez, Project Manager
1220 Pacific Highway
San Diego, CA 92132-5190

Subject: Draft Supplemental Environmental Impact Statement for the Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at Marine Corps Air Ground Combat Center, Twentynine Palms, California

Dear Mr. Martinez:

The Department of Fish and Wildlife (CDFW) appreciates the opportunity to comment on the Draft Supplemental Environmental Impact Statement (SEIS) for the Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at Marine Corps Air Ground Combat Center (MCAGCC), Twentynine Palms, California (Project). CDFW is responding to the EA as a Trustee Agency for fish and wildlife resources (California Fish and Game Code Sections 711.7 and 1802, and the California Environmental Quality Act [CEQA] Guidelines Section 15386).

Project Location

The proposed project is located on and around Marine Corps Air Ground Combat Center, north of the City of Twentynine Palms, south of the Interstate 40 and west of Amboy Road, in the County of San Bernardino, State of California.

Project Description

The 2011 General Translocation Plan (GTP) that was prepared in support of the 2012 Final EIS and associated Biological Opinion (BO) is considered the No-Action Alternative in this SEIS. The intent of the GTP was to provide for the translocation of tortoises from training areas in the Western Expansion Area (WEA) and Southern Expansion Area (SEA) that would experience high to moderate levels of impact from the proposed training activities, and to recommend further investigation of those factors that would be important determinants of translocation success and tortoise recovery. The BO identified conservation and mitigation measures the Marine Corps would need to implement to minimize the rate of mortality or injury to

resident tortoises, including developing a detailed plan to translocate desert tortoises from areas that would experience impacts from training. Since the 2012 Final EIS and 2013 Record of Decision (ROD), the Marine Corps has conducted detailed studies and has worked with United States Fish and Wildlife Service (USFWS) and the Bureau of Land Management (BLM) to refine the translocation plan for the desert tortoise, as required in the 2012 Land Acquisition BO. As a result of this effort, and in consultation with the USFWS, the Combat Center refined and developed two alternative desert tortoise translocation plans.

Project Specific Comments and Recommendations

Following the review of the ESIS, CDFW offers the comments and recommendations listed below to assist MCLB in adequately identifying and/or mitigating the Project's impacts on biological resources. CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of those species (i.e., biological resources).

Alternative 1

Page 2-10 Section 2.2.1.1 - Recipient and Control Site Selection

One factor not mentioned is that recipient sites should be similar (vegetation, soil, etc.) to the sites in which tortoises are translocated. This should be included as one of the conditions for site location.

Page 2-12 Table 2.2.1 Recipient and Paired Control Sites

Because of the following reasons Daggett does not make a good paired control site. Table 4 on page 15 of the Translocation plan shows the Daggett site with a highest of seropositive tortoises, of any site, tied for the highest percent of tortoise with canid trauma and a fairly significate amount of "Offending Raven" nests. Mortality would almost certainly be higher in this site, so it should not qualify for a control site.

The other comparison should be use between recipient and paired control site type of vegetation.

Page 2-15 Figure 2.2-2 View of Recipient and Control Sites West and Northwest of the WEA

The Lucerne-Ord Recipient site abuts the Johnson Valley OHV Open area. The recipient should be fence to prevent OHV use and collection of tortoises in the area. In addition, one of Dr. Kristin Berry's long-term study plots is within this proposed recipient site. In past discussion with the USFWS, it was always discussed in the past that we need to be aware of where there are research projects taking place so they do not

overlap. The addition of tortoises in the area will impact the study plot and data collected there.

The south west corner of the Rodman-Sunshine Peak South Control site abuts Dr. Berry's Johnson Valley long-term study plot. Care will need to be taken so none of the tortoises from the study plot area used as control animals.

In the no-action alterative there several recipient sites in the WEA, which were not in Alternative 1. Why were these locations deleted?

Pages 2-21 & 22 Section 2.2.2.2 Fencing

As mentioned above the site most at risk from OHV use is the Lucerne-Ord recipient site. This area should be fence to preclude OHV is and illegal collection of tortoises. It does not sound as if this area is currently included in the proposed fencing areas.

Page 2-23 Section 2.2.2.3 Translocation

The SEIS states that during coordination with the CDFW regarding the Alternative 1translocation plan, the agency requested that the Combat Center consider limiting translocation of ELISA-positive tortoises. As a precautionary measure, the Combat Center agreed not to translocate any ELISA-positive tortoises into desert tortoise critical habitat, and would instead place them in other identified recipient sites. CDFW would like to recommend the ELISA-positive tortoises be transmittered, place in the medium use area and monitored to determine the impacts to the tortoises from training in a medium use area. This could valuable information for future projects.

CDFW seeks clarification if there will be any consideration of rainfall and amount of forage available prior to translocation. If there minimal rainfall this winter, there may not be adequate vegetation for the recipient population let alone for translocated tortoises especially in the grazing allotment areas.

In the Translocation Plan it say the survival will be assessed via tracking 675 telemetered tortoises, 225 each of translocated, control, and resident groups, with 225 representing approximately 20% (190 tortoises) of the adults, and 5% (35 tortoises) of the juveniles originally anticipated to be translocated. The adults in both groups should consist of an equal number of males and females.

Page 2-24 Section 2.2.2.4 Subsequent Clearance Surveys

This section states or mentions the surveys would be conducted as described in the No-Action Alternative which states -For any tortoise found, the standard measurements and assessments that were used on other tortoises would be completed and the tortoise numbered. All tortoises that are suitable candidates for translocation, based

on the health assessment, would be translocated to the designated recipient areas. CDFW is assuming the health assessment mentioned in the statement includes blood work, not just a visual assessment and that the tortoise will be held until the results have been obtained.

Page 2-25 Section 2.2.4.1 Table 2.2-3 Recipient Sites Post Translocation Densities for Alternative 1

CDFW would hope these number could be flexible if rain fall is sporadic in areas this winter and could change some of the translocation number if some recipient site have more forage for the tortoises. It is CDFW ‘s opinion translocation should be conducted in order to insure the highest survival rate of the translocated animals.

Alternative 2

Comments are the same as Alternative 1 above.

General Comments

CDFW appreciates that the Marine Corp has committed to a total of 30 years for studying the effect of translocation on the desert tortoise.

Aa Memorandum of Understanding with CDFW for the translocation will be need for on the work conducted off base.

CDFW appreciates the opportunity to comment on the ESIS. If you should have any questions pertaining to this letter, please contact Rebecca Jones at Rebecca.Jones@wildlife.ca.gov or (661)-285-5867.

Sincerely,

Leslie McNair
Regional Manager
Inland Deserts Region

Cc: State Clearing House
CORR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

November 14, 2016

Craig Bloxham
c/o Cardno Government Services
3888 State Street, Suite 201
Santa Barbara, California 93105

Subject: Draft Supplemental Environmental Impact Statement (Draft SEIS) for the Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at Marine Corps Air Ground Combat Center, Twentynine Palms, California (CEQ # 20160221)

Dear Mr. Bloxham:

The U.S. Environmental Protection Agency (EPA) has reviewed the above-referenced document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

The Draft SEIS evaluates the environmental effects of implementing alternative plans to translocate Agassiz's desert tortoises (*Gopherus agassizii*) from new training areas acquired by the Marine Corps as evaluated in the 2012 *Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training* Final Environmental Impact Statement. That document included a general translocation plan, but the 2012 Biological Opinion issued by the U.S. Fish and Wildlife Service (USFWS) required development of a detailed translocation plan to translocate desert tortoises from areas that would experience impacts from training. Subsequent to the 2013 Record of Decision, the Marine Corps conducted detailed studies and worked with the USFWS, the California Department of Fish and Wildlife, and the Bureau of Land Management to develop alternative translocation plans. In light of new information gained from these efforts, the Department of the Navy elected to prepare a Supplemental EIS focusing on the evaluation of potential impacts of implementing the alternative tortoise translocation plans.

-

ticks, scorpions, and venomous snakes. We recommend that the health and safety plan also address Valley Fever, which is present in San Bernardino County at a moderate rate.[1]

- The Draft SEIS references the final Council on Environmental Quality (CEQ) *Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*. We appreciate the discussion in the Draft SEIS of the cumulative climate change effects on the desert tortoise and the estimate of greenhouse gas (GHG) emissions from construction and operation of the project. The Draft SEIS compares the estimated annual GHG emissions during the lifespan of the project to the total annual emissions of the entire U.S. (p. 5-26). As is explained in the CEQ Guidance, such comparisons are "not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations because this approach does not reveal anything beyond the nature of the climate change itself: the fact that diverse individual sources of emissions each make a relatively small addition to global atmospheric GHG concentrations that collectively have a large impact."[2] EPA recommends that the Navy remove this comparison in the Final SEIS, consistent with CEQ guidance.

EPA appreciates the opportunity to review this Draft SEIS. When the Final SEIS is released for public review, please send one electronic copy to the address above (mail code: ENF-4-2). If you have any questions, please contact me at (415) 947-4161, or contact Karen Vitulano, the lead reviewer for this project, at 415-947-4178 or vitulano.karen@epa.gov.

Sincerely,

Connell Dunning

Connell Dunning, Acting Manager
Environmental Review Section

Enclosure: Summary of EPA Rating Definitions

cc: Ray Bransfield, U.S. Fish and Wildlife Service
Scott Kerr, U.S. Marine Corps

[1] see http://www.cdph.ca.gov/HealthInfo/discond/Documents/VFGeneral.pdf
[2] CEQ Guidance, p.11.

SUMMARY OF EPA RATING DEFINITIONS

This rating system was developed as a means to summarize EPA's level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the EIS.

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

ADEQUACY OF THE IMPACT STATEMENT

Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, “Policy and Procedures for the Review of Federal Actions Impacting the Environment.”

825 East Third Street, San Bernardino, CA 92415-0835 | Phone: 909.387.8109 Fax: 909.387.7876
www.SBCounty.gov

SAN BERNARDINO COUNTY

Department of Public Works
Environmental & Construction • Flood Control
Operations • Solid Waste Management
Surveyor • Transportation

Gerry Newcombe
Director

November 15, 2016

29 Palms SEIS Project Team
C/O Cardno Government Services
3888 State Street, Ste. 201
Santa Barbara, CA. 93105

File: 10(ENV)-4.01

RE: NOTICE OF AVAILABILITY OF A SUBSEQUENT ENVIRONMENTAL IMPACT STATEMENT FOR THE U.S. MARINE CORPS DESERT TORTOISE TRANSLOCATION PROJECT

To whom it may concern:

Thank you for giving the San Bernardino County Department of Public Works the opportunity to comment on the above-referenced project. **We received this request on October 11, 2016** and pursuant to our review, we have no comments.

If you have any questions, please contact the individuals who provided the specific comment, as listed above.

Sincerely,

NIDHAM ARAM ALRAYES, MSCE, PE, QSD/P
Public Works Engineer III
Environmental Management

NAA:PE:sr

ARTHUR CARHART NATIONAL WILDERNESS TRAINING CENTER

MINIMUM REQUIREMENTS DECISION GUIDE WORKBOOK

"...except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act..."

-- The Wilderness Act of 1964

Project Title: Translocation of Desert Tortoises-Cady Mountains Wilderness Study Area

MRDG STEP 1

Determine if Administrative Action is Necessary

Description of the Situation
What is the situation that may prompt administrative action?

Note- The Bureau of Land Management (BLM) manages wilderness areas under the policies and guidelines in MANAGEMENT OF DESIGNATED WILDERNESS AREAS, released July 2012 (BLM Manual 6340). These policies require use of a Minimum Requirements Decision Process (MRDP) document to be prepared by the Bureau of Land Management, when the project proposal impairs a wilderness character as defined by Section 1.6 (c) of BLM Manual 6340.

The Department of the Navy (DON) signed a Record of Decision (ROD) regarding the 2012 Final Environmental Impact Statement (EIS) for *Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training,* Marine Corps Air Ground Combat Center, Twentynine Palms, California (Combat Center).

The Combat Center has therefore conducted a 3-year program of surveys, literature reviews, and consultation with resource agencies, resulting in the preparation of a desert tortoise translocation plan in 2016. The proposed alternatives include establishing a desert tortoise recipient area within Cady Mountains Wilderness Study Area.

Options Outside of Wilderness
Can action be taken outside of wilderness that adequately addresses the situation?

☐ YES **STOP – DO NOT TAKE ACTION IN WILDERNESS**

☒ NO **EXPLAIN AND COMPLETE STEP 1 OF THE MRDG**

Explain:

Each recipient site is paired with a control site to match genetics, habitat, and local weather patterns (DSEIS, Sept 2016, 2-11; 2.2.1.2 Recipient and Control Site Selection). The separation distance recommend between recipient and control sites is approximately 6.25 miles (DSEIS, Sept 2016, 2-10; last bullet).

The site achieves moderately high protection from overlapping and nearby existing and proposed conservation lands and nearly all of the lands are federally-owned (DSEIS, Sept 2016, 2-16; Broadwell).

Criteria for Determining Necessity
Is action necessary to meet any of the criteria below?

A. Valid Existing Rights or Special Provisions of Wilderness Legislation
Is action necessary to satisfy valid existing rights or a special provision in wilderness legislation (the Wilderness Act of 1964 or subsequent wilderness laws) that ***requires*** *action? Cite law and section.*

☐ YES ☒ NO

Explain:

Proposal is between the Bureau of Land Management and the Combat Center. There are no valid existing rights or special provisions of wilderness legislation that are directly relevant to this proposal.

B. Requirements of Other Legislation
Is action necessary to meet the requirements of other federal laws? Cite law and section.

☐ YES ☒ NO

Explain:

Proposal is between Bureau of Land Management and the Combat Center. There are no requirements of other federal laws that are directly relevant to this proposal.

C. Wilderness Character

Is action necessary to preserve one or more of the qualities of wilderness character, including: Untrammeled, Undeveloped, Natural, Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation, or Other Features of Value?

UNTRAMMELED

☐ YES ☒ NO

Explain:

It is not necessary to take action to preserve this quality. The Wilderness Act states that wilderness is "an area where the earth and its community of life are untrammeled by man." A "trammel" is literally a net, hobble, or other device that impedes the free movement of an animal. This quality is impaired by human activities or actions that control or manipulate the components or processes of ecological systems inside the wilderness (BLM Manual 6340, 1-5).

There is no need to take action to preserve the untrammeled quality and prevent adverse impacts from free movement of tortoises as they will not be controlled or manipulated. The potential impacts of any proposed methods will be addressed in Step 2 alternatives.

UNDEVELOPED

☐ YES ☒ NO

Explain:

It is not necessary to take action to preserve this quality. The Wilderness Act states that there should be "no presence of structures or installations, and by the use of motor vehicles, motorized equipment, or mechanical transport." Preserving this quality keeps areas free from mechanization (Wilderness Act of 1964, Section 4(c)).

"Tortoise will be flown by helicopter or driven to location at or near the relevant translocation area, according to the approved disposition plan for the tortoise. Biologist would then carry the tortoises from this location to release them at designated release sites" (DSEIS, Sept 2016, 2-23). The release site is staged outside of wilderness study area boundaries.

"Helicopters would land within MSRs or other existing roads/routes and preferably within intersections of roads. Tortoise would then be carried by foot following capture and for release" (DSEIS, Sept 2016, 2-24).

There will be no mechanical transport within Cady Wilderness Study Area. The potential impacts of methods on this quality will be addressed in Step 2 alternatives.

NATURAL

☒ YES ☐ NO

Explain:

It is necessary to take action to preserve this quality. A wilderness area is to "free as possible from the effects of modern civilization. Management must foster a natural distribution of native wildlife, fish, and plants by ensuring that ecosystems and ecological processes continue to function naturally." (BLM Manual 6340, 1-5).

Tortoise in the wilderness should remain free as possible from the effects of the modern civilization. During the tortoise capture, mark, and release process, tortoises will be in contact with humans and this alters ecological systems to continue to function naturally. This is anticipated to occur once a year. The potential impacts of any proposed methods on this quality will be addressed in Step 2 Alternatives.

SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION

☐ YES ☒ NO

Explain:

It is not necessary to take action to preserve this quality. The Wilderness Act defines wilderness as having "outstanding opportunities for solitude or primitive and unconfined type of recreation." This quality is about the opportunity for people to experience wilderness in terms of visitor's sense of solitude, and their expectation for an undeveloped environment with minimal restrictions (Wilderness Act of 1964, Section 4(c).

Solitude, primitive and unconfined recreation should remain consistent with or without proposal to monitor tortoise inside wilderness areas when motor vehicles are used to transport tortoise to release area. When a helicopter is used it may alter this quality because visitors may see or hear the helicopter even when it is staged outside the wilderness study area.

OTHER FEATURES OF VALUE

☒ YES ☐ NO

Explain:

It is necessary to take action to preserve this quality. The Wilderness Act says these areas "may also contain ecological, geological, or other features of scientific, educational, scenic, or historical use"...some of these features, such as the presence of threatened and endangered species, are also part of the natural quality of a wilderness. (BLM 6340, 1-6).

The desert tortoises (Gopherus agassizii) both currently existing and potentially translocated within Cady Mountains Wilderness Study Area are a unique feature of value as they are a threatened species in this area. When tortoise are captured, marked, and released it may negatively impact ecological processes which tortoise depend on for survival. The potential impacts of any proposed methods on this quality will be addressed in Step 2 alternatives.

Step 1 Decision
Is administrative action necessary in wilderness?

Decision Criteria

A.	Existing Rights or Special Provisions	☐ YES	☒ NO
B.	Requirements of Other Legislation	☐ YES	☒ NO
C.	Wilderness Character		
	Untrammeled	☐ YES	☒ NO
	Undeveloped	☐ YES	☒ NO
	Natural	☒ YES	☐ NO
	Outstanding Opportunities	☐ YES	☒ NO
	Other Features of Value	☒ YES	☐ NO

Is administrative action necessary in wilderness?

☒ YES **EXPLAIN AND PROCEED TO STEP 2 OF THE MRDG**

☐ NO **STOP – DO NOT TAKE ACTION IN WILDERNESS**

Explain:

Several wilderness character qualities will be impacted if the proposal goes forth in monitoring tortoises in Cady Mountains Wilderness Study Area. Desert tortoises are a threatened species that thrive in this wilderness and the proposal may alter the natural and other feature of value qualities because of what is being proposed regarding the tortoise within the wilderness study area.

This proposal and alternatives will be considered in Step 2 of this analysis.

MRDG STEP 2

Determine the Minimum Activity

Other Direction
Is there "special provisions" language in legislation (or other Congressional direction) that

☐ YES **DESCRIBE DOCUMENTS & DIRECTION BELOW**

☒ NO **SKIP AHEAD TO COMPONENTS OF THE ACTION BELOW**

Describe Documents & Direction:

There are no 'special provisions' language in legislation that explicitly allows consideration of use otherwise prohibited by Section 4(c).

Components of the Action
What are the discrete components or phases of the action?

Component X:	*Example: Transportation of personnel to the project site*
Component 1:	Translocation method
Component 2:	Post-translocation method
Component 3:	Type of travel in wilderness study area
Component 4:	

Proceed to the alternatives.

Refer to the **MRDG Instructions** regarding alternatives and the effects to each of the comparison criteria.

MRDG STEP 2: Alternative 1

Alternative 1: SEIS No-Action Alternative (No effect on Cady Mountains)

Description of the Alternative
What are the details of this alternative? When, where, and how will the action occur? What

Under the SEIS No-Action Alternative, the Marine Corps proposed no actions within Cady Wilderness Study Area.

Component Activities
How will each of the components of the action be performed under this alternative?

Component of the Action		Activity for this Alternative
X	*Example: Transportation of personnel to the project site*	*Example: Personnel will travel by horseback*
1	Translocation method	No translocation
2	Post-translocation method	No post-translocation
3	Type of travel in wilderness study area	No travel in wilderness study area

Wilderness Character
What is the effect of each component activity on the qualities of wilderness character? What

UNTRAMMELED

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	No translocation	☐	☐	☒
2	No post-translocation	☐	☐	☒
3	No travel in wilderness study area	☐	☐	☒
4		☐	☐	☐
Total Number of Effects		0	0	NE
Untrammeled Total Rating		0		

Explain:

No action would be taken in wilderness study area and there are no impacts to this quality.

UNDEVELOPED

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	No translocation	☐	☐	☒
2	No post-translocation	☐	☐	☒
3	No travel in wilderness study area	☐	☐	☒
4		☐	☐	☐
Total Number of Effects		0	0	NE
Undeveloped Total Rating		0		

Explain:

No action would be taken in wilderness study area and there are no impacts to this quality.

NATURAL

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	No translocation	☐	☐	☒
2	No post-translocation method	☐	☐	☒
3	No travel in wilderness study area	☐	☐	☒
4		☐	☐	☐
Total Number of Effects		0	0	NE
Natural Total Rating		0		

Explain:

No action would be taken in wilderness study area and there are no impacts to this quality.

SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	No translocation	☐	☐	☒
2	No post-translocation	☐	☐	☒
3	No travel in wilderness study area	☐	☐	☒
4		☐	☐	☐
Total Number of Effects		0	0	NE
Solitude or Primitive & Unconfined Rec. Total Rating		0		

Explain:

No action would be taken in wilderness study area and there are no impacts to this quality.

OTHER FEATURES OF VALUE

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	No translocation	☐	☐	☒
2	No post-translocation	☐	☐	☒
3	No travel in wilderness study area	☐	☐	☒
4		☐	☐	☐
Total Number of Effects		0	0	NE
Other Features of Value Total Rating		0		

Explain:

No action would be taken in wilderness study area and there are no impacts to this quality.

Other Criteria

What is the effect of each component activity on other comparison criteria? What mitigation

MAINTAINING TRADITIONAL SKILLS

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	No translocation	☐	☐	☒
2	No post-translocation	☐	☐	☒
3	No travel in wilderness study area	☐	☐	☒
4		☐	☐	☐
Total Number of Effects		0	0	NE
Maintaining Traditional Skills Total Rating		0		

Explain:

No action would be taken in wilderness study area and there are no impacts to this quality.

ECONOMICS & TIME CONSTRAINTS

Component Activity for this Alternative		Estimated Cost
X	*Example: Personnel will travel by horseback*	
1	No translocation	$0
2	No post-translocation	$0
3	No travel in wilderness study area	$0
4		
Economics & Time Constraints Total Rating		$0

Explain:

No action would be taken in wilderness study area so there would be no relevant cost.

Safety of Visitors & Workers

What is the effect of each component activity on the safety of visitors and workers? What

SAFETY OF VISITORS & WORKERS

Risk Assessment		Accident				
Severity of Accident		Frequent	Likely	Common	Unlikely	Rare
1	Catastrophic: Death or permanent disability	☐	☐	☐	☐	☒
2	Critical: Permanent partial disability or temporary total disability	☐	☐	☐	☐	☒
3	Marginal: Compensable injury or illness, treatment, lost work	☐	☐	☐	☐	☒
4	Negligible: Superficial injury or illness, first aid only, no lost work	☐	☐	☐	☐	☒
Risk Assessment		**No Risk**				

Explain:

There is no risk associated with this alternative as there is no action in the wilderness study area.

Summary Ratings for Alternative 1	
Wilderness Character	
Untrammeled	0
Undeveloped	0
Natural	0
Solitude or Primitive & Unconfined Recreation	0
Other Features of Value	0
Wilderness Character Summary Rating	**0**
Traditional Skills	
Maintaining Traditional Skills	0
Economics	
Cost	$0.00
Safety of Visitors & Workers	
Risk Assessment	No Risk

MRDG STEP 2: Alternative 2

Alternative 2: SEIS Alternative 1 (Cady Mountains Recipient)

Description of the Alternative
What are the details of this alternative? When, where, and how will the action occur? What

Under SEIS Alternative 1, the Marine Corps would select Cady Mountains Wilderness Study Area as a part of a recipient area that is in the newly established Mojave Trails National Monument. Recipient areas include a release and dispersal area (DSEIS, Sept 2016, 2-11; 2.21.2). The release area is located outside Cady Mountain Wilderness Study Area boundaries (DSEIS, Sept 2016, 2-18; Figure 2.2-3). Only the dispersal area is within the boundaries. Post-translocation monitoring and health assessment would be supplemented by regular conservation Law Enforcement Officer patrols (DSEIS, Sept 2016, 2-25; First Bullet). Capture, mark, and releasing tortoises in recipient area would be evaluated to monitor survival once a year using a transect approach. This approach consist of walking 10 meters apart one direction, then walk line transect 10 meters apart in an orthogonal direction. Due to this approach, only foot traffic occurs inside the wilderness study area. The planned number of translocatees for alternative 1 is 47 at 6.2 tortoises per square mile (DSEIS, Sept 2016, 2-25; Table 2.2-3).

Component Activities
How will each of the components of the action be performed under this alternative?

Component of the Action		Activity for this Alternative
X	*Example: Transportation of personnel to the project site*	*Example: Personnel will travel by horseback*
1	Translocation method	Recipient site
2	Post-translocation method	Capture, marking, releasing tortoises
3	Type of travel in wilderness	Foot travel using a transect approach
4		

Wilderness Character
What is the effect of each component activity on the qualities of wilderness character? What

UNTRAMMELED

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	Recipient site	☐	☐	☒
2	Capture, marking, releasing tortoise	☐	☐	☒
3	Foot travel using a transect approach	☐	☐	☒
4		☐	☐	☐
Total Number of Effects		0	0	NE
Untrammeled Total Rating		0		

Explain:

The untrammeled quality is impacted when there is manipulation or control of natural processes in wilderness study area. The component activities for this alternative do not impact the untrammeled quality.

UNDEVELOPED

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	Recipient site	☐	☐	☒
2	Capture, marking, releasing tortoise	☒	☐	☐
3	Foot travel using a transect approach	☒	☐	☐
4		☐	☐	☐
Total Number of Effects		2	0	NE
Undeveloped Total Rating		2		

Explain:

There is no use of motorized equipment or presence of structures and installations. Capture, mark, and releasing is an alternative method of using transmitters. The use of transmitters would be an installation and is prohibited in wilderness areas.

NATURAL

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	Recipient site	☐	☐	☒
2	Capture, marking, releasing tortoise	☐	☒	☐
3	Foot travel using a transect approach	☐	☐	☒
4		☐	☐	☐
Total Number of Effects		0	-1	NE
Natural Total Rating		-1		

Explain:

Tortoise in wilderness study areas should remain free as possible from effects of the modern civilization and this is affected by intended human activities on the ecological systems inside the wilderness. When performing capture, mark, release on tortoise, this affects their ability to function naturally. Although, this would only happen once a year in Cady Mountains Wilderness Study Area.

SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	Recipient site	☐	☐	☒
2	Capture, marking, releasing tortoise	☐	☐	☒
3	Foot travel using a transect approach	☐	☐	☒
4		☐	☐	☐
Total Number of Effects		0	0	NE
Solitude or Primitive & Unconfined Rec. Total Rating		0		

Explain:

There are no impacts to this quality as solitude, primitive and unconfined recreation should remain consistent with these component activities present.

OTHER FEATURES OF VALUE

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	Recipient site	☐	☐	☒
2	Capture, marking, releasing tortoises	☐	☒	☒
3	Foot travel using a transect approach	☐	☐	☒
4		☐	☐	☐
Total Number of Effects		0	-1	NE
Other Features of Value Total Rating		-1		

Explain:

The tortoises being monitored are a unique feature of value to the Rodman Mountain Wilderness as they are a threatened species in this area. This proposal has a negative impact to this quality as they will be captured, marked, and released when they are already in a sensitive state. Although, this would only happen once a year in Cady Mountains Wilderness Study Area.

Other Criteria

What is the effect of each component activity on other comparison criteria? What mitigation

MAINTAINING TRADITIONAL SKILLS

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	Recipient site	☐	☐	☒
2	Capture, marking, releasing tortoise	☒	☐	☐
3	Foot travel using a transect approach	☒	☐	☐
4		☐	☐	☐
Total Number of Effects		2	0	NE
Maintaining Traditional Skills Total Rating		2		

Explain:

Using foot travel to capture, mark, and release tortoises contributes in the use of primitive and traditional skills.

ECONOMICS & TIME CONSTRAINTS

Component Activity for this Alternative		Estimated Cost
X	*Example: Personnel will travel by horseback*	
1	Recipient area	$0
2	Capture, marking, releasing tortoise	Unknown
3	Foot travel using a transect approach	Unknown
4		
Economics & Time Constraints Total Rating		Unknown

Explain:

The cost for this method integrated in the proposal is unknown at this time.

Safety of Visitors & Workers

What is the effect of each component activity on the safety of visitors and workers? What

SAFETY OF VISITORS & WORKERS

Risk Assessment		Probability of Accident				
Severity of Accident		Frequent	Likely	Common	Unlikely	Rare
1	Catastrophic: Death or permanent disability	☐	☐	☐	☐	☒
2	Critical: Permanent partial disability or temporary total disability	☐	☐	☐	☐	☒
3	Marginal: Compensable injury or illness, treatment, lost work	☐	☐	☐	☐	☒
4	Negligible: Superficial injury or illness, first aid only, no lost work	☐	☐	☐	☒	☐
Risk Assessment		**Low Risk**				

Explain:

There is low risk for accidents when required training and personal protective equipment is utilized. Foot traffic is the only method of travel inside the wilderness study area and qualified professionals will be implementing the capture, marking, and release. Helicopter and vehicle use occurs outside of the wilderness study area and is not evaluated in this case.

Summary Ratings for Alternative 2	
Wilderness Character	
Untrammeled	0
Undeveloped	2
Natural	-1
Solitude or Primitive & Unconfined Recreation	0
Other Features of Value	-1
Wilderness Character Summary Rating	0
Traditional Skills	
Maintaining Traditional Skills	2
Economics	
Cost	Unknown
Safety of Visitors & Workers	
Risk Assessment	Low Risk

MRDG STEP 2: Alternative 3

Alternative 3: SEIS Alternative 2 (Cady Mountains Recipient)

Description of the Alternative
What are the details of this alternative? When, where, and how will the action occur? What

SEIS Alternative 2 is the same as SEIS Alternative 1 for Cady Mountains Wilderness Study Area with the exception of density levels. The planned number of translocatees decreases from 47 at 6.2 tortoises per square mile to 18 at 5.5 tortoises per square mile for this alternative ((DSEIS, Sept 2016, 2-31; Table 2.3-2).

Under SEIS Alternative 2, the Marine Corps would select Cady Mountains Wilderness Study Area as a part of a recipient area that is in the newly established Mojave Trails National Monument. Recipient areas include a release and dispersal area (DSEIS, Sept 2016, 2-11; 2.21.2). The release area is located outside Cady Mountain Wilderness Study Area boundaries (DSEIS, Sept 2016, 2-18; Figure 2.2-3). Only the dispersal area is within the boundaries. Post-translocation monitoring and health assessment would be supplemented by regular conservation Law Enforcement Officer patrols (DSEIS, Sept 2016, 2-25; First Bullet). Capture, mark, and releasing tortoises in recipient area would be evaluated to monitor survival once a year using a transect approach. This approach consist of walking 10 meters apart in one direction, then walking a line transect 10 meters apart in an orthogonal direction. Due to this approach, only foot traffic occurs inside the wilderness study area. The planned number of translocatees for alternative 1 is 47 at 6.2 tortoises per square mile (DSEIS, Sept 2016, 2-25; Table 2.2-3).

MRDG STEP 2: Alternative Comparison

Alternative 1:	SEIS No-Action Alternative (No effect on Cady Mountain)
Alternative 2:	SEIS Alternative 1(Cady Mountains Recipient)
Alternative 3:	SEIS Alternative 2 (Cady Mountain Recipient)

Wilderness Character	Alt 1		Alt 2		Alt 3	
	+	-	+	-	+	-
Untrammeled	0	0	0	0	0	0
Undeveloped	0	0	2	0	2	0
Natural	0	0	0	1	0	1
Solitude or Primitive & Unconfined Rec.	0	0	0	0	0	0
Other Features of Value	0	0	0	1	0	1
Total Number of Effects	0	0	5	5	5	5
Wilderness Character Rating	0		0		0	
Traditional Skills	Alt 1		Alt 2		Alt 3	
	+	-	+	-	+	-
Maintaining Traditional Skills	0	0	2	0	2	0
Other Criteria Rating	0		2		2	
Economics	Alt 1		Alt 2		Alt 3	
	+	-	+	-	+	-
Cost	$0.00		Unknown		Unknown	
Safety	Alt 1		Alt 2		Alt 3	
	+	-	+	-	+	-
Risk Assessment	No Risk		Low Risk		Low Risk	

MRDG STEP 2: Alternatives Not Analyzed

Alternatives Not Analyzed
What alternatives were considered by not analyzed? Why were they not analyzed?

None.

SEIS alternatives 1 and 2 are extensions of the SEIS No-Action Alternative proposed in an earlier draft.

There are no other feasible methods to address the need for action.

MRDG STEP 2: Decision

Refer to the **MRDG Instructions** before identifying the selected alternative and explaining the rationale for the selection.

Selected Alternative		
☐	Alternative 1:	SEIS No-Action Alternative (No effect on Cady Mountains)
☐	Alternative 2:	SEIS Alternative 1 (Cady Mountains Recipient)
☒	Alternative 3:	SEIS Alternative 2 (Cady Mountains Recipient)

Explain Rationale for Selection:

Although, alternative 1 has no effect on Cady Mountains Wilderness Study Area, alternative 3 was chosen because there would be no adverse effects to the wilderness study area. Also, minimal action was found in alternative 3 in other proposed wilderness areas and supports the selected alternative for this analysis. There are no prohibited uses found in Section 4(c) of the Wilderness Act in any of the alternatives. The ratings are the same in alternative 2 and 3. Though, only 18 tortoises would be translocated and dispersed in the Broadwell recipient site in which only covers a portion of Cady Mountains Wilderness Study Area. A majority of the capture, marking, releasing will take place outside of the wilderness study area and only take place once a year.

Describe Monitoring & Reporting Requirements:

Post-Translocation monitoring consists of capture, mark, and release of tortoise within Cady Mountains Wilderness Study Area once a year. Vehicles would be staged outside of the wilderness study area. Only foot travel within wilderness study area boundaries would occur. A transect approach would be used to monitor and capture tortoises. This approach consist of walking 10 meters apart in one direction, then walking a line transect 10 meters apart in an orthogonal direction.

Approval of Prohibited Uses

Which of the prohibited uses found in Section 4(c) of the Wilderness Act are approved in the selected alternative and for what quantity?

☐	Mechanical Transport:	N/A
☐	Motorized Equipment:	N/A
☐	Motor Vehicles:	N/A
☐	Motorboats:	N/A
☐	Landing of Aircraft:	N/A
☐	Temporary Roads:	N/A
☐	Structures:	N/A
☐	Installations:	N/A

Record and report any authorizations of Wilderness Act Section 4(c) prohibited uses according to agency policies or guidance.

Refer to agency policies for the following review and decision authorities:

Prepared	Name	Position	
	Shantel Price	Outdoor Recreation Planner-Wilderness	
	Signature		Date
	Price		11/1/16

Recommended	Name	Position	
	Zackary Pratt	Supervisory Outdoor Recreation Planner	
	Signature Zachy Pratt		Date 11/1/16
	I concur with the findings.		

Approved	Name	Position	
	Katrina Symons	Field Manager-Barstow Field Office	
	Signature		Date 11/10/16
	I concur w/ assessment		

ARTHUR CARHART NATIONAL WILDERNESS TRAINING CENTER

MINIMUM REQUIREMENTS DECISION GUIDE WORKBOOK

"...except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act..."

-- The Wilderness Act of 1964

Project Title: Translocation of Desert Tortoises-Cleghorn Lakes Wilderness Area

MRDG STEP 1

Determine if Administrative Action is Necessary

Description of the Situation
What is the situation that may prompt administrative action?

Note- The Bureau of Land Management (BLM) manages wilderness areas under the policies and guidelines in MANAGEMENT OF DESIGNATED WILDERNESS AREAS, released July 2012 (BLM Manual 6340). These policies require use of a Minimum Requirements Decision Process (MRDP) document to be prepared by the Bureau of Land Management, when the project proposal impairs a wilderness character as defined by Section 1.6 (c) of BLM Manual 6340.

The Department of the Navy (DON) signed a Record of Decision (ROD) regarding the 2012 Final Environmental Impact Statement (EIS) for *Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training,* Marine Corps Air Ground Combat Center, Twentynine Palms, California (Combat Center).

The Combat Center has therefore conducted a 3-year program of surveys, literature reviews, and consultation with resource agencies, resulting in the preparation of a desert tortoise translocation plan in 2016. The proposed alternatives include establishing a desert tortoise control area(s) within Cleghorn Lakes Wilderness Area.

Options Outside of Wilderness
Can action be taken outside of wilderness that adequately addresses the situation?

☒ YES **STOP – DO NOT TAKE ACTION IN WILDERNESS**

☐ NO **EXPLAIN AND COMPLETE STEP 1 OF THE MRDG**

Explain:

Action is not necessary in Cleghorn Lakes Wilderness Area. Three alternatives were proposed in this wilderness. The SEIS alternative 2 removes the Bullion and Cleghorn control sites and the proposed mark-recapture plot outside of the wilderness area; whereas, the other alternatives require administrative action as they have control sites and mark-recapture plots within Cleghorn Lakes Wilderness boundaries. It was also suggested that the areas immediately north and west of Cleghorn Lakes have a good habitat quality and is far from any human impacts (DSEIS, Sept 2016, 2-27; Alternative 2). Therefore, no action should be taken in Cleghorn Lake Wilderness Area.

Refer to agency policies for the following review and decision authorities:

Prepared	Name	Position	
	Shantel Price	Outdoor Recreation Planner-Wilderness	
	Signature		Date
	Shantel Price		11/1/16

Recommended	Name	Position	
	Zack Pratt	Supervisory Outdoor Recreation Planner	
	Signature Zachary L. Pratt		Date 11/1/16
	I concur with the assessment for the Cleghorn Lakes Wilderness area.		

Approved	Name	Position	
	Katrina Symons	Field Manager	
	Signature		Date 11/10/16
	I concur w/ assessment		

ARTHUR CARHART NATIONAL WILDERNESS TRAINING CENTER

MINIMUM REQUIREMENTS DECISION GUIDE WORKBOOK

"...except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act..."

-- The Wilderness Act of 1964

Project Title: Translocation of Desert Tortoises-Rodman Mountain Wilderness Area

MRDG STEP 1

Determine if Administrative Action is Necessary

Description of the Situation
What is the situation that may prompt administrative action?

Note- The Bureau of Land Management (BLM) manages wilderness areas under the policies and guidelines in MANAGEMENT OF DESIGNATED WILDERNESS AREAS, released July 2012 (BLM Manual 6340). These policies require use of a Minimum Requirements Decision Process (MRDP) document to be prepared by the Bureau of Land Management, when the project proposal impairs a wilderness character as defined by Section 1.6 (c) of BLM Manual 6340.

The Department of the Navy (DON) signed a Record of Decision (ROD) regarding the 2012 Final Environmental Impact Statement (EIS) for *Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training,* Marine Corps Air Ground Combat Center, Twentynine Palms, California (Combat Center).

The Combat Center has therefore conducted a 3-year program of surveys, literature reviews, and consultation with resource agencies, resulting in the preparation of a desert tortoise translocation plan in 2016. The proposed alternatives include establishing a desert tortoise control area/site within Rodman Mountains Wilderness.

Options Outside of Wilderness
Can action be taken outside of wilderness that adequately addresses the situation?

☐ YES **STOP – DO NOT TAKE ACTION IN WILDERNESS**

☒ NO **EXPLAIN AND COMPLETE STEP 1 OF THE MRDG**

Explain:

Control areas must not have foreseeable development or other impacts precluding tortoise occupancy and should be approximately 6.25 miles from recipient areas. No other suitable areas were identified based on the selection of recipient sites…this would enable the Combat Center to monitor and observe what effects, if any, resulted from translocation of the tortoises (DSEIS, Sept 2016, 2-5; 2.1.1.4).

Criteria for Determining Necessity
Is action necessary to meet any of the criteria below?

A. Valid Existing Rights or Special Provisions of Wilderness Legislation
Is action necessary to satisfy valid existing rights or a special provision in wilderness legislation (the Wilderness Act of 1964 or subsequent wilderness laws) that ***requires*** *action? Cite law and section.*

☐ YES ☒ NO

Explain:

Land is being acquired by the Combat Center and no existing rights or special provisions exist in this proposal.

B. Requirements of Other Legislation
Is action necessary to meet the requirements of other federal laws? Cite law and section.

☐ YES ☒ NO

Explain:

Proposal is between the Bureau of Land Management and the Combat Center. There are no requirements of any other federal laws that are directly relevant to this proposal.

C. Wilderness Character
Is action necessary to preserve one or more of the qualities of wilderness character, including: Untrammeled, Undeveloped, Natural, Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation, or Other Features of Value?

UNTRAMMELED

☐ YES ☒ NO

Explain:

It is not necessary to take action to preserve this quality. The Wilderness Act states that wilderness is "an area where the earth and its community of life are untrammeled by man." A "trammel" is literally a net, hobble, or other device that impedes the free movement of an animal. This quality is impaired by human activities or actions that control or manipulate the components or processes of ecological systems inside the wilderness (BLM Manual 6340, 1-5).

There is no need to take action to preserve the untrammeled quality and prevent adverse impacts from free movement of tortoises as they will not be controlled or manipulated. The potential impacts of any proposed methods will be addressed in Step 2 alternatives.

UNDEVELOPED

☐ YES ☒ NO

Explain:

It is not necessary to take action to preserve this quality. The Wilderness Act states that there should be "no structure or installation within any such area." Preserving this quality keeps areas free from mechanization (Wilderness Act of 1964, Section 4(c)).

There is no need to take action to preserve the undeveloped quality and prevent adverse impacts from installations, structures, motorized equipment, or the use of mechanical devices. The potential impacts of any proposed methods on this quality will be addressed in Step 2 alternatives.

NATURAL

☒ YES ☐ NO

Explain:

It is necessary to take action to preserve this quality. A wilderness area is to be "free as possible from the effects of modern civilization. Management must foster a natural distribution of native wildlife, fish, and plants by ensuring that ecosystems and ecological processes continue to function naturally." (BLM Manual 6340, 1-5).

Tortoise in the wilderness should remain free as possible from the effects of the modern civilization. During the tortoise capture, mark, and release process, tortoises will be in

contact with humans and this alters ecological systems to continue to function naturally. This is anticipated to occur once a year. The potential impacts of any proposed methods on this quality will be addressed in Step 2 Alternatives.

SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION

☐ YES ☒ NO

Explain:

It is not necessary to take action to preserve this quality. The Wilderness Act defines wilderness as having "outstanding opportunities for solitude or primitive and unconfined type of recreation." This quality is about the opportunity for people to experience wilderness in terms of visitor's sense of solitude, and their expectation for an undeveloped environment with minimal restrictions (Wilderness Act of 1964, Section 4(c).

Solitude, and/or primitive and unconfined recreation should remain consistent with or without proposal to monitor tortoise inside wilderness areas.

OTHER FEATURES OF VALUE

☒ YES ☐ NO

Explain:

It is necessary to take action to preserve this quality. The Wilderness Act says these areas "may also contain ecological, geological, or other features of scientific, educational, scenic, or historical use"...some of these features, such as the presence of threatened and endangered species, are also part of the natural quality of a wilderness. (BLM 6340, 1-6).

The desert tortoises (Gopherus agassizii) being monitored in this proposal are a unique feature of value to the Rodman Mountain Wilderness as they are a threatened species in this area. The potential impacts of any proposed methods on this quality will be addressed in Step 2 alternatives.

Step 1 Decision
Is administrative action necessary in wilderness?

Decision Criteria

A.	Existing Rights or Special Provisions	☐ YES	☒ NO
B.	Requirements of Other Legislation	☐ YES	☒ NO
C.	Wilderness Character		
	Untrammeled	☐ YES	☒ NO
	Undeveloped	☐ YES	☒ NO
	Natural	☒ YES	☐ NO
	Outstanding Opportunities	☐ YES	☒ NO
	Other Features of Value	☒ YES	☐ NO

Is administrative action necessary in wilderness?

☒ YES	EXPLAIN AND PROCEED TO STEP 2 OF THE MRDG
☐ NO	STOP – DO NOT TAKE ACTION IN WILDERNESS

Explain:

Several wilderness character qualities will be impacted if the proposal goes forth in monitoring tortoises in Rodman Mountains Wilderness. Desert tortoises are a threatened species that thrive in this wilderness and the proposal may alter the natural and other feature of value qualities because of what is being proposed regarding the tortoise within the wilderness area.

This proposal and alternatives will be considered in Step 2 of this analysis.

MRDG STEP 2

Determine the Minimum Activity

Other Direction
Is there "special provisions" language in legislation (or other Congressional direction) that

☐ YES **DESCRIBE DOCUMENTS & DIRECTION BELOW**

☒ NO **SKIP AHEAD TO COMPONENTS OF THE ACTION BELOW**

Describe Documents & Direction:

There are no 'special provisions' language in legislation that explicitly allows consideration of use otherwise prohibited by Section 4(c).

Components of the Action
What are the discrete components or phases of the action?

Component X:	*Example: Transportation of personnel to the project site*
Component 1:	Translocation method
Component 2:	Post-translocation method
Component 3:	Type of travel in wilderness
Component 4:	
Component 5:	
Component 6:	

Proceed to the alternatives.

Refer to the MRDG Instructions regarding alternatives and the effects to each of the comparison criteria.

MRDG STEP 2: Alternative 1

Alternative 1: SEIS No-Action Alternative (Two control areas in Rodman Mountains Wilderness)

Description of the Alternative
What are the details of this alternative? When, where, and how will the action occur? What

Under the No-Action Alternative, the Marine Corps would select Rodman Mountains Wilderness as a control area as it meets the criteria in which it must be similar to recipient areas. The control area assists in providing a comparison between areas and tortoises affected by translocation and tortoises not affected by translocation. Two control areas were identified in the Rodman Mountains Wilderness Area. Capture, mark, and releasing tortoises in the control areas (Rodman Mountains Wilderness) would be evaluated to monitor survival once a year using a transect approach. This approach consists of walking 10 meters apart in one direction, then walking a line transect 10 meters apart in an orthogonal direction. Due to this approach, only foot traffic occurs inside the wilderness (DSEIS, Sept 2016, 2-8; 2.1.3 Post-Translocation Monitoring).

Component Activities
How will each of the components of the action be performed under this alternative?

Component of the Action		Activity for this Alternative
X	*Example: Transportation of personnel to the project site*	*Example: Personnel will travel by horseback*
1	Translocation method	Two control sites
2	Post-translocation method	Capture, marking, releasing tortoises
3	Type of travel in wilderness	Foot travel using a transect approach
4		

Wilderness Character
What is the effect of each component activity on the qualities of wilderness character? What

UNTRAMMELED

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	Two control sites	☐	☐	☒
2	Capture, marking, releasing tortoise	☐	☐	☒
3	Foot travel using a transect approach	☐	☐	☒
4		☐	☐	☐
Total Number of Effects		0	0	NE
Untrammeled Total Rating		0		

Explain:

The untrammeled quality is impacted when there is manipulation or control of natural processes in wilderness. The component activities for this alternative do not impact the untrammeled quality.

UNDEVELOPED

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	Two control sites	☐	☐	☒
2	Capture, marking, releasing tortoise	☒	☐	☐
3	Foot travel using a transect approach	☒	☐	☐
4		☐	☐	☒
Total Number of Effects		2	0	NE
Undeveloped Total Rating		2		

Explain:

There is no use of motorized equipment or presence of structures and installations. Capture, mark, and releasing is an alternative method of using transmitters. The use of transmitters would be an installation and is prohibited in wilderness areas.

NATURAL

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	Two control sites	☐	☐	☒
2	Capture, marking, releasing tortoise	☐	☒	☐
3	Foot travel using a transect approach	☐	☐	☒
4		☐	☐	☐
Total Number of Effects		0	-1	NE
Natural Total Rating		-1		

Explain:

Tortoise in wilderness areas should remain free as possible from effects of the modern civilization and this is affected by intended human activities on the ecological systems inside the wilderness. When performing capture, mark, release on tortoise, this affects their ability to function naturally. Although, this will only happen once a year in Rodman Mountains Wilderness.

SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	Two control sites	☐	☐	☒
2	Capture, marking, releasing tortoises	☐	☐	☒
3	Foot travel using a transect approach	☐	☐	☒
4		☐	☐	☒
Total Number of Effects		0	0	NE
Solitude or Primitive & Unconfined Rec. Total Rating		0		

Explain:

There are no impacts to this quality as solitude, primitive and unconfined recreation should remain consistent with these component activities present.

OTHER FEATURES OF VALUE

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	Two control sites	☐	☐	☒
2	Capture, marking, releasing tortoise	☐	☒	☐
3	Foot travel using a transect approach	☐	☐	☒
4		☐	☐	☐
Total Number of Effects		0	-1	NE
Other Features of Value Total Rating		-1		

Explain:

The tortoises being monitored are a unique feature of value to the Rodman Mountain Wilderness as they are a threatened species in this area. This proposal has a negative impact to this quality as they will be captured, marked, and released when they are already in a sensitive state. Although, this will only happen once a year in Rodman Mountains Wilderness.

Other Criteria

What is the effect of each component activity on other comparison criteria? What mitigation

MAINTAINING TRADITIONAL SKILLS

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	Two control sites	☐	☐	☒
2	Capture, marking, releasing tortoise	☒	☐	☐
3	Foot travel using a transect approach	☒	☐	☐
4		☐	☐	☐
Total Number of Effects		2	0	NE
Maintaining Traditional Skills Total Rating		2		

Explain:

Using foot travel to capture, mark, and release tortoises contributes in the use of primitive and traditional skills.

ECONOMICS & TIME CONSTRAINTS

Component Activity for this Alternative		Estimated Cost
X	*Example: Personnel will travel by horseback*	
1	Two control sites	$0
2	Capture, marking, releasing tortoise	Unknown
3	Foot travel using a transect approach	Unknown
Economics & Time Constraints Total Rating		**Unknown**

Explain:

The cost for this proposal is unknown at this time.

Safety of Visitors & Workers

What is the effect of each component activity on the safety of visitors and workers? What

SAFETY OF VISITORS & WORKERS

Risk Assessment		Probability of Accident				
Severity of Accident		Frequent	Likely	Common	Unlikely	Rare
1	Catastrophic: Death or permanent disability	☐	☐	☐	☐	☒
2	Critical: Permanent partial disability or temporary total disability	☐	☐	☐	☐	☒
3	Marginal: Compensable injury or illness, treatment, lost work	☐	☐	☐	☐	☒
4	Negligible: Superficial injury or illness, first aid only, no lost work	☐	☐	☐	☒	☐
Risk Assessment		**Low Risk**				

Explain:

There is low risk for accidents when required training and personal protective equipment is utilized. Foot traffic is only method of travel inside of wilderness and qualified professionals will be implementing the capture, marking, and release.

Summary Ratings for Alternative 1	
Wilderness Character	
Untrammeled	0
Undeveloped	2
Natural	-1
Solitude or Primitive & Unconfined Recreation	0
Other Features of Value	-1
Wilderness Character Summary Rating	**0**
Traditional Skills	
Maintaining Traditional Skills	2
Economics	
Cost	Unknown
Safety of Visitors & Workers	
Risk Assessment	Low Risk

MRDG STEP 2: Alternative 2

Alternative 2: SEIS Alternative 1(Control area in Rodman Mountains Wilderness)

Description of the Alternative
What are the details of this alternative? When, where, and how will the action occur? What

Under SEIS Alternative 1, the Marine Corps would select Rodman Mountains Wilderness as a part of a control area that overlaps with conservation areas, Combat Center, and Rodman Mountains Wilderness area. The control area assists in providing a comparison between areas and tortoises affected by translocation and areas tortoises not affected by translocation. Conservation Law Enforcement Officer will patrol and monitor and conduct health assessment of control tortoise populations would be the primary means of detecting predation. Capture, mark, and releasing tortoises in the control area (portion of Rodman Mountains Wilderness) would be evaluated to monitor survival once a year using a transect approach. This approach consists of walking 10 meters apart in one direction, then walking a line transect 10 meters apart in an orthogonal direction. Due to this approach, only foot traffic occurs inside the wilderness (DSEIS, Sept 2016, 2-24; 2.2.3 Post-Translocation Monitoring).

Component Activities
How will each of the components of the action be performed under this alternative?

	Component of the Action	Activity for this Alternative
X	*Example: Transportation of personnel to the project site*	*Example: Personnel will travel by horseback*
1	Translocation method	One control site
2	Post-translocation method	Capture, marking, releasing tortoises
3	Type of travel in wilderness	Foot travel using a transect approach
4		

Wilderness Character
What is the effect of each component activity on the qualities of wilderness character? What

UNTRAMMELED

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	One control site	☐	☐	☒
2	Capture, marking, releasing tortoise	☐	☐	☒
3	Foot travel using a transect approach	☐	☐	☒
4		☐	☐	☐
Total Number of Effects		0	0	NE
Untrammeled Total Rating		0		

Explain:

The untrammeled quality is impacted when there is manipulation or control of natural processes in wilderness. The component activities for this alternative do not impact the untrammeled quality.

UNDEVELOPED

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	One control site	☐	☐	☒
2	Capture, marking, releasing tortoise	☒	☐	☐
3	Foot travel using a transect approach	☒	☐	☐
4		☐	☐	☐
Total Number of Effects		2	0	NE
Undeveloped Total Rating		2		

Explain:

There is no use of motorized equipment or presence of structures and installations. Capture, mark, and releasing is an alternative method of using transmitters. The use of transmitters would be an installation and is prohibited in wilderness areas.

NATURAL

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	One control site	☐	☐	☒
2	Capture, marking, releasing tortoise	☐	☒	☐
3	Foot travel using a transect approach	☐	☐	☒
4		☐	☐	☐
Total Number of Effects		0	-1	NE
Natural Total Rating		-1		

Explain:

Tortoise in wilderness areas should remain free as possible from effects of the modern civilization and this is affected by intended human activities on the ecological systems inside the wilderness. When performing capture, mark, release on tortoise, this affects their ability to function naturally. Although, this will only happen once a year in Rodman Mountains Wilderness.

SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	One control site	☐	☐	☒
2	Capture, marking, releasing tortoise	☐	☐	☒
3	Foot travel using a transect approach	☐	☐	☒
4		☐	☐	☐
Total Number of Effects		0	0	NE
Solitude or Primitive & Unconfined Rec. Total Rating		0		

Explain:

There are no impacts to this quality as solitude, primitive and unconfined recreation should remain consistent with these component activities present.

OTHER FEATURES OF VALUE

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	One control site	☐	☐	☒
2	Capture, marking, releasing tortoise	☐	☒	☐
3	Foot travel using a transect approach	☐	☐	☒
4		☐	☐	☐
Total Number of Effects		0	-1	NE
Other Features of Value Total Rating		-1		

Explain:

The tortoises being monitored are a unique feature of value to the Rodman Mountains Wilderness as they are a threatened species in this area. This proposal has a negative impact to this quality as they will be captured, marked, and released when they are already in a sensitive state. Although, this will only happen once a year in Rodman Mountains Wilderness.

Other Criteria
What is the effect of each component activity on other comparison criteria? What mitigation

MAINTAINING TRADITIONAL SKILLS

Component Activity for this Alternative		Positive	Negative	No Effect
X	*Example: Personnel will travel by horseback*	☐	☐	☒
1	One control site	☐	☐	☒
2	Capture, marking, releasing tortoise	☒	☐	☐
3	Foot travel using a transect approach	☒	☐	☐
4		☐	☐	☐
Total Number of Effects		2	0	NE
Maintaining Traditional Skills Total Rating		2		

Explain:

Using foot travel to capture, mark, and release tortoises contributes in the use of primitive and traditional skills.

ECONOMICS & TIME CONSTRAINTS

Component Activity for this Alternative		Estimated Cost
X	*Example: Personnel will travel by horseback*	
1	One control site	$0
2	Capture, marking, releasing tortoise	Unknown
3	Foot travel using a transect approach	Unknown
Economics & Time Constraints Total Rating		**Unknown**

Explain:

The cost for this method integrated in the proposal is unknown at this time.

Safety of Visitors & Workers

What is the effect of each component activity on the safety of visitors and workers? What

SAFETY OF VISITORS & WORKERS

Risk Assessment		Probability of Accident				
Severity of Accident		Frequent	Likely	Common	Unlikely	Rare
1	Catastrophic: Death or permanent disability	☐	☐	☐	☐	☒
2	Critical: Permanent partial disability or temporary total disability	☐	☐	☐	☐	☒
3	Marginal: Compensable injury or illness, treatment, lost work	☐	☐	☐	☐	☒
4	Negligible: Superficial injury or illness, first aid only, no lost work	☐	☐	☐	☒	☐
Risk Assessment		**Low Risk**				

Explain:

There is low risk for accidents when required training and personal protective equipment is utilized. Foot traffic is the only method of travel inside the wilderness and qualified professionals will be implementing the capture, marking, and release

Summary Ratings for Alternative 2	
Wilderness Character	
Untrammeled	0
Undeveloped	2
Natural	-1
Solitude or Primitive & Unconfined Recreation	0
Other Features of Value	-1
Wilderness Character Summary Rating	0
Traditional Skills	
Maintaining Traditional Skills	2
Economics	
Cost	Unknown
Safety of Visitors & Workers	
Risk Assessment	Low Risk

MRDG STEP 2: Alternative 3

Alternative 3: SEIS Alternative 2 (Control area in Rodman Mountains Wilderness)

Description of the Alternative
What are the details of this alternative? When, where, and how will the action occur? What

SEIS Alternative 2 is the same as SEIS Alternative 1 for Rodman Mountains Wilderness area.

Under SEIS Alternative 2, the Marine Corps would select Rodman Mountains Wilderness as a part of a control area that overlaps with conservation areas, Combat Center, and Rodman Mountains Wilderness area. The control area assists in providing a comparison between areas and tortoises affected by translocation and areas tortoises not affected by translocation. Conservation Law Enforcement Officer patrols to monitor and conduct health assessment of control tortoise populations would be the primary means of detecting predation. (DSEIS, Sept 2016, 2-27; 2.3 Alternative 2). Capture, mark, and releasing tortoises in the control areas (Rodman Mountains Wilderness) would be evaluated to monitor survival once a year using a transect approach. This approach consist of walking 10 meters apart one direction, then walk line transect 10 meters apart in an orthogonal direction. Due to this approach, only foot traffic occurs inside the wilderness (DSEIS, Sept 2016, 2-8; 2.1.3 Post-Translocation Monitoring).

MRDG STEP 2: Alternative Comparison

Alternative 1:	SEIS No-Action Alternative (Two control areas in Rodman Mountains Wilderness)
Alternative 2:	SEIS Alternative 1(Control area in Rodman Mountains Wilderness)
Alternative 3:	SEIS Alternative 2(Control area in Rodman Mountains Wilderness)

Wilderness Character	Alt 1		Alt 2		Alt 3	
	+	-	+	-	+	-
Untrammeled	0	0	0	0	0	0
Undeveloped	2	0	2	0	2	0
Natural	0	1	0	1	0	1
Solitude or Primitive & Unconfined Rec.	0	0	0	0	0	0
Other Features of Value	0	1	0	1	0	1
Total Number of Effects	2	2	2	2	2	2
Wilderness Character Rating	0		0		0	
Traditional Skills	Alt 1		Alt 2		Alt 3	
	+	-	+	-	+	-
Maintaining Traditional Skills	2	0	2	0	2	0
Traditional Skills Rating	2		2		2	
Economics	Alt 1		Alt 2		Alt 3	
	+	-	+	-	+	-
Cost	**Unknown**		**Unknown**		**Unknown**	
Safety of Visitors & Workers	Alt 1		Alt 2		Alt 3	
	+	-	+	-	+	-
Risk Assessment	Low Risk		Low Risk		Low Risk	

MRDG STEP 2: Alternatives Not Analyzed

Alternatives Not Analyzed
What alternatives were considered but not analyzed? Why were they not analyzed?

None.

SEIS alternatives 1 and 2 are extensions of the SEIS No-Action Alternative proposed in an earlier draft.

There are no other feasible methods to address the need for action.

MRDG STEP 2: Decision

Refer to the **MRDG Instructions** before identifying the selected alternative and explaining the rationale for the selection.

Selected Alternative		
☐	Alternative 1:	SEIS No-Action Alternative (Two control areas in Rodman Mountains Wilderness)
☐	Alternative 2:	SEIS Alternative 1(Control area in Rodman Mountains Wilderness)
☒	Alternative 3:	SEIS Alternative 2 (Same as Alternative 1)

Explain Rationale for Selection:

MRDG Alternative # 3 is the selected alternative. This alternative would have the best likelihood of successfully using Rodman Mountains Wilderness area as part of a control site. There are no prohibited uses found in Section 4(c) of the Wilderness Act in these alternatives. Alternative 2 and 3 require the same action. However, minimal action was found in alternative three in other proposed wilderness and wilderness study area and supports the selected alternative for this analysis.

Describe Monitoring & Reporting Requirements:

Post-Translocation monitoring consists of capture, mark, and release of tortoise within Rodman Mountains Wilderness once a year. Vehicles would be staged outside of the wilderness. Only foot travel within wilderness boundaries would occur. A transect approach would be used to monitor and capture tortoises. This approach consists of walking 10 meters apart in one direction, then walking a line transect 10 meters apart in an orthogonal direction.

Approval of Prohibited Uses

Which of the prohibited uses found in Section 4(c) of the Wilderness Act are approved in the selected alternative and for what quantity?

☐	Mechanical Transport:	N/A
☐	Motorized Equipment:	N/A
☐	Motor Vehicles:	N/A
☐	Motorboats:	N/A
☐	Landing of Aircraft:	N/A
☐	Temporary Roads:	N/A
☐	Structures:	N/A
☐	Installations:	N/A

Record and report any authorizations of Wilderness Act Section 4(c) prohibited uses according to agency policies or guidance.

Refer to agency policies for the following review and decision authorities:

Prepared	Name	Position
	Shantel Price	Outdoor Recreation Planner-Wilderness
	Signature	Date
		11/1/16

Recommended	Name	Position
	Zack Pratt	Supervisory Outdoor Recreation Planner
	Signature	Date 11/1/16
	I concur with the findings.	

Approved	Name	Position
	Katrina Symons	Field Manager
	Signature	Date 11/10/16
	Concur w/ assessment	

APPENDIX D
RECORD OF NON-APPLICABILITY AND AIR CALCULATIONS

This page intentionally left blank.

RECORD OF NON-APPLICABILITY (RONA) FOR CLEAN AIR ACT CONFORMITY

Supplemental Environmental Impact Statement for
Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training, Marine Corps Air Ground Combat Center, Twentynine Palms, California

INTRODUCTION

The U.S. Environmental Protection Agency published Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule, in the 30 November 1993 Federal Register (40 CFR Parts 6, 51, and 93). The Department of the Navy published Interim Guidance on Compliance with the Clean Air Act (CAA) General Conformity Rule in the Marine Corps Order P5090.2A, Change 3, dated 26 August 2013. These publications provide implementing guidance to document CAA conformity determination requirements.

Federal regulations state that no department, agency, or instrumentality of the federal government shall engage in, support in any way or provide financial assistance for, license to permit, or approve any activity that does not conform to an applicable implementation plan. It is the responsibility of the federal agency to determine whether a federal action conforms to the applicable implementation plan, before the action is taken (40 CFR Part 1 51.850[a]).

The General Conformity Rule applies to Federal actions proposed within areas which are designated as either nonattainment or maintenance areas for a National Ambient Air Quality Standard (NAAQS) for any of the criteria pollutants (i.e., carbon monoxide [CO], ozone [O_3], sulfur dioxide [SO_2] nitrogen oxides [NO_X], suspended particulate matter between 2.5 and 10 microns in diameter [PM_{10}] and less than 2.5 microns in diameter [$PM_{2.5}$], and lead [Pb]). Former nonattainment areas that have attained a NAAQS are designated as maintenance areas. Emissions of pollutants for which an area is in attainment are exempt from conformity analyses.

The Proposed Action would occur within the Mojave Desert Air Basin (MDAB) portion of San Bernardino County. The MDAB is a severe-15 O_3 nonattainment area, and is a moderate nonattainment area for PM_{10}. The MDAB attains the NAAQS for all other criteria pollutants. Therefore, only project emissions of O_3 (or its precursors, volatile organic compounds [VOCs] and NO_X), and PM_{10} are analyzed for conformity rule applicability.

The annual *de minimis* levels for this region are listed in Table D-1. Federal actions may be exempt from conformity determinations if they do not exceed designated *de minimis* levels (40 CFR Part 1, § 51.853[b]).

Table D-1. De minimis Levels for Criteria Pollutants in the Mojave Desert Air Basin

Criteria Pollutant	de minimis Level (tons/year)
VOCs	25
NO_X	25
PM_{10}	100

PROPOSED ACTION

Action Proponent: Department of the Navy

Location: Marine Corps Air Ground Combat Center (MCAGCC), Twentynine Palms, California

Proposed Action Name: Supplemental Environmental Impact Statement (SEIS) for Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training, Marine Corps Air Ground Combat Center, Twentynine Palms, California

Proposed Action Summary: The SEIS has been prepared to analyze the potential environmental impacts of a No-Action Alternative and two additional action alternatives addressing different methodologies and locations for implementing a Desert Tortoise Translocation Program in support of Marine Expeditionary Brigade (MEB)-sized training exercises. The No-Action Alternative would implement the 2011 General Translocation Plan considered in the 2012 Final EIS and the Land Acquisition Biological Opinion. Alternatives 1 would implement a March 2016 desert tortoise translocation plan and Alternative 2 would implement the revised draft of the translocation plan developed in June 2016. Alternatives 1 and 2 primarily differ from the No-Action Alternative in the size, number, and location of recipient and control areas.

Air Emissions Summary: It has been estimated that all construction activities would be completed over the course of 2 months and would begin in fiscal year (FY) 2017. Air emissions would primarily result from the use of vehicles traveling to the recipient and control sites to erect tortoise exclusion fencing and signage. Tortoises would be transported by hand or via truck to the recipient sites. During operations, vehicles would travel to the recipient sites infrequently to monitor tortoises and repair fencing. Dust suppression methods would continue to be employed as necessary. A portion of the fencing at certain recipient sites would be removed after two years, in FY 2019, and the removal is expected to take approximately 1 month.

Estimated emissions due to implementation of the Proposed Action are shown in Tables D-2, D-3, and D-4. The data presented in these tables represents the estimated emissions with implementation of the No-Action Alternative, Alternative 1, and Alternative 2. Based on the air quality analysis, the maximum estimated emissions would be below conformity *de minimis* threshold levels for the MDAB. Therefore, no significant impact to air quality would occur.

Table D-2. Total Emissions Resulting from Implementation of the No-Action Alternative

Emission Source	Emissions (tons/year) VOCs	Emissions (tons/year) NO_x	Emissions (tons/year) CO	Emissions (tons/year) SO_2	Emissions (tons/year) PM_{10}	Emissions (tons/year) $PM_{2.5}$
Construction Emissions	0.0704	0.7625	0.4043	0.0011	0.1116	0.0381
Total Emissions (tons/year)	**0.0704**	**0.7625**	**0.4043**	**0.0011**	**0.1116**	**0.0381**
Conformity *de minimis* Limits	25	25	NA	NA	100	NA
Exceeds Conformity *de minimis* Limits?	**No**	**No**	**No**	**No**	**No**	**No**

Legend: CO = carbon monoxide; NA = not applicable; NO_x = nitrogen oxides; PM_{10} = particulate matter less than 10 microns in diameter but greater than 2.5 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; SO_2 = sulfur dioxide; VOCs = volatile organic compounds.

Table D-3. Total Emissions Resulting from Implementation of Alternative 1

Emission Source	Emissions (tons/year) VOCs	Emissions (tons/year) NO_x	Emissions (tons/year) CO	Emissions (tons/year) SO_2	Emissions (tons/year) PM_{10}	Emissions (tons/year) $PM_{2.5}$
Construction Emissions	0.0704	0.7625	0.4043	0.0011	0.0729	0.0339
Helicopter Emissions	0.0002	0.0060	0.0031	NA	0.0050	NA
Total Emissions (tons/year)	**0.0706**	**0.7685**	**0.4074**	**0.0011**	**0.0779**	**0.0339**
Conformity *de minimis* Limits	25	25	NA	NA	100	NA
Exceeds Conformity *de minimis* Limits?	**No**	**No**	**No**	**No**	**No**	**No**

Legend: CO = carbon monoxide; NA = not applicable; NO_x = nitrogen oxides; PM_{10} = particulate matter less than 10 microns in diameter but greater than 2.5 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; SO_2 = sulfur dioxide; VOCs = volatile organic compounds.

Table D-4. Total Emissions Resulting from Implementation of Alternative 2

Emission Source	Emissions (tons/year) VOCs	Emissions (tons/year) NO_x	Emissions (tons/year) CO	Emissions (tons/year) SO_2	Emissions (tons/year) PM_{10}	Emissions (tons/year) $PM_{2.5}$
Construction Emissions	0.0704	0.7625	0.4043	0.0011	0.0687	0.0335
Helicopter Emissions	0.0002	0.0060	0.0031	NA	0.0050	NA
Total Emissions (tons/year)	**0.0706**	**0.7685**	**0.4074**	**0.0011**	**0.0737**	**0.0335**
Conformity *de minimis* Limits	25	25	NA	NA	100	NA
Exceeds Conformity *de minimis* Limits?	**No**	**No**	**No**	**No**	**No**	**No**

Legend: CO = carbon monoxide; NA = not applicable; NO_x = nitrogen oxides; PM_{10} = particulate matter less than 10 microns in diameter but greater than 2.5 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; SO_2 = sulfur dioxide; VOCs = volatile organic compounds.

Affected Air Basin: Mojave Desert Air Basin

Date RONA Prepared: August 31, 2016

RONA Prepared By: MCAGCC Twentynine Palms with direct support from Cardno

ATTAINMENT AREA STATUS AND EMISSIONS EVALUATION CONCLUSION

The MDAB is a severe-15 nonattainment area for the 8-hour O_3 NAAQS; VOCs and NO_X are precursors to the formation of O_3. The MDAB is also a moderate nonattainment area for PM_{10}. Emissions associated with construction and operational activities for the Proposed Action were calculated using the California Emissions Estimation Model, which is the current air quality model for land use projects in California. Emissions were then compared with *de minimis* thresholds for the MDAB.

The USMC concludes that *de minimis* thresholds for applicable criteria pollutants would not be exceeded as a result of implementation of the Proposed Action. The emissions data supporting that conclusion are shown in Tables D-2, D-3, and D-4, which is a summary of the calculations, methodology, and data attached to this RONA. Therefore, the USMC concludes that further formal conformity determination procedures are not required.

RONA APPROVAL

To the best of my knowledge, the information presented in this RONA is correct and accurate, and I concur in the finding that the Proposed Action does not require a formal CAA conformity determination.

_____ _____

W.F. MULLEN III
Brigadier General, United States Marine Corps

Date

29 Palms Land Acquisition and Airspace Establishment SEIS: No-Action Alternative

Mojave Desert Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.00	0	147.04	0	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project specific input, desert setting

Construction Phase - Project-specific phases

Off-road Equipment - Off-Highway Trucks = pickup truck, water truck; Bore/Drill Rigs = vibrating post driver

Off-road Equipment - Off-Highway Trucks = pickup truck, water truck; Bore/Drill Rigs = gas powered auger

Grading - All acres project acreage will be disturbed during fence installation

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	120.00	30.00
tblConstructionPhase	NumDays	120.00	30.00
tblConstructionPhase	PhaseEndDate	3/24/2017	3/25/2017
tblConstructionPhase	PhaseEndDate	2/10/2017	2/11/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName	NA	Fence Installation
tblOffRoadEquipment	PhaseName	NA	Tortoise Translocation
tblOffRoadEquipment	PhaseName	NA	Fence Installation
tblOffRoadEquipment	PhaseName	NA	Fence Installation
tblOffRoadEquipment	PhaseName	NA	Tortoise Translocation
tblOffRoadEquipment	PhaseName	NA	Fence Installation
tblProjectCharacteristics	OperationalYear	2014	2017
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

Note: NA = Not Applicable

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0704	0.7625	0.4043	1.0700e-003	0.0804	0.0312	0.1116	9.0700e-003	0.0290	0.0381	0.0000	98.2810	98.2810	0.0277	0.0000	98.8626
Total	**0.0704**	**0.7625**	**0.4043**	**1.0700e-003**	**0.0804**	**0.0312**	**0.1116**	**9.0700e-003**	**0.0290**	**0.0381**	**0.0000**	**98.2810**	**98.2810**	**0.0277**	**0.0000**	**98.8626**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0704	0.7625	0.4043	1.0700e-003	0.0804	0.0312	0.1116	9.0700e-003	0.0290	0.0381	0.0000	98.2808	98.2808	0.0277	0.0000	98.8624
Total	**0.0704**	**0.7625**	**0.4043**	**1.0700e-003**	**0.0804**	**0.0312**	**0.1116**	**9.0700e-003**	**0.0290**	**0.0381**	**0.0000**	**98.2808**	**98.2808**	**0.0277**	**0.0000**	**98.8624**

Percent Reduction in Emissions with Mitigation Measures Applied

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Percent Reduction in Emissions with Mitigation Measures Applied

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Fence Installation	Site Preparation	1/1/2017	2/11/2017	5	30	NA
2	Tortoise Translocation	Site Preparation	2/12/2017	3/25/2017	5	30	NA

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Fence Installation	Bore/Drill Rigs	1	4.00	205	0.50
Fence Installation	Generator Sets	1	8.00	84	0.74
Fence Installation	Off-Highway Trucks	2	8.00	400	0.38
Fence Installation	Trenchers	1	4.00	80	0.50
Tortoise Translocation	Bore/Drill Rigs	1	4.00	205	0.50
Tortoise Translocation	Off-Highway Trucks	2	8.00	400	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Fence Installation	5	13.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Tortoise Translocation	3	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Not Applicable

3.2 Fence Installation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0780	0.0000	0.0780	8.4200e-003	0.0000	8.4200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0411	0.4315	0.2331	5.8000e-004	0.0000	0.0192	0.0192	0.0000	0.0180	0.0180	0.0000	53.5504	53.5504	0.0145	0.0000	53.8548
Total	**0.0411**	**0.4315**	**0.2331**	**5.8000e-004**	**0.0780**	**0.0192**	**0.0972**	**8.4200e-003**	**0.0180**	**0.0265**	**0.0000**	**53.5504**	**53.5504**	**0.0145**	**0.0000**	**53.8548**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.1000e-004	1.7100e-003	0.0157	3.0000e-005	2.4400e-003	2.0000e-005	2.4600e-003	6.5000e-004	2.0000e-005	6.6000e-004	0.0000	2.0678	2.0678	1.3000e-004	0.0000	2.0705
Total	**8.1000e-004**	**1.7100e-003**	**0.0157**	**3.0000e-005**	**2.4400e-003**	**2.0000e-005**	**2.4600e-003**	**6.5000e-004**	**2.0000e-005**	**6.6000e-004**	**0.0000**	**2.0678**	**2.0678**	**1.3000e-004**	**0.0000**	**2.0705**

3.2 Fence Installation - 2017 (continued)

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0780	0.0000	0.0780	8.4200e-003	0.0000	8.4200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0411	0.4315	0.2331	5.8000e-004	0.0000	0.0192	0.0192	0.0000	0.0180	0.0180	0.0000	53.5503	53.5503	0.0145	0.0000	53.8548
Total	**0.0411**	**0.4315**	**0.2331**	**5.8000e-004**	**0.0780**	**0.0192**	**0.0972**	**8.4200e-003**	**0.0180**	**0.0265**	**0.0000**	**53.5503**	**53.5503**	**0.0145**	**0.0000**	**53.8548**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.1000e-004	1.7100e-003	0.0157	3.0000e-005	2.4400e-003	2.0000e-005	2.4600e-003	6.5000e-004	2.0000e-005	6.6000e-004	0.0000	2.0678	2.0678	1.3000e-004	0.0000	2.0705
Total	**8.1000e-004**	**1.7100e-003**	**0.0157**	**3.0000e-005**	**2.4400e-003**	**2.0000e-005**	**2.4600e-003**	**6.5000e-004**	**2.0000e-005**	**6.6000e-004**	**0.0000**	**2.0678**	**2.0678**	**1.3000e-004**	**0.0000**	**2.0705**

3.3 Tortoise Translocation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0285	0.3292	0.1555	4.6000e-004	0.0000	0.0119	0.0119	0.0000	0.0110	0.0110	0.0000	42.6627	42.6627	0.0131	0.0000	42.9372
Total	**0.0285**	**0.3292**	**0.1555**	**4.6000e-004**	**0.0000**	**0.0119**	**0.0119**	**0.0000**	**0.0110**	**0.0110**	**0.0000**	**42.6627**	**42.6627**	**0.0131**	**0.0000**	**42.9372**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0285	0.3292	0.1555	4.6000e-004	0.0000	0.0119	0.0119	0.0000	0.0110	0.0110	0.0000	42.6627	42.6627	0.0131	0.0000	42.9372
Total	**0.0285**	**0.3292**	**0.1555**	**4.6000e-004**	**0.0000**	**0.0119**	**0.0119**	**0.0000**	**0.0110**	**0.0110**	**0.0000**	**42.6627**	**42.6627**	**0.0131**	**0.0000**	**42.9372**

3.3 Tortoise Translocation - 2017 (continued)

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Not Applicable

4.2 Trip Summary Information

Not Applicable

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
NA	0	0	0	0	0	0	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.434564	0.068056	0.178415	0.157220	0.054651	0.008723	0.006985	0.074355	0.001157	0.001000	0.009707	0.000674	0.004492

4.4 Fleet Mix

Not Applicable

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Not Applicable

Mitigated and Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total	**0**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total	**0**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Consumer Products	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Architectural Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

Not Applicable

8.0 Waste Detail

8.1 Mitigation Measures Waste

Not Applicable

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Not Applicable	0	0	0	0	0	NA

10.0 Vegetation

Not Applicable

29 Palms Land Acquisition and Airspace Establishment SEIS: Alternative 1

Mojave Desert Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.00	0	74.15	0	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project specific input, desert setting

Construction Phase - Project-specific phases

Off-road Equipment - Off-Highway Trucks = pickup truck, water truck; Bore/Drill Rigs = vibrating post driver

Off-road Equipment - Off-Highway Trucks = pickup truck, water truck; Bore/Drill Rigs = gas powered auger

Grading - All project acreage will be disturbed during fence installation

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	40.00	30.00
tblConstructionPhase	NumDays	40.00	30.00
tblConstructionPhase	PhaseEndDate	3/24/2017	3/25/2017
tblConstructionPhase	PhaseEndDate	2/10/2017	2/11/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName	NA	Fence Installation
tblOffRoadEquipment	PhaseName	NA	Fence Installation
tblOffRoadEquipment	PhaseName	NA	Fence Installation
tblOffRoadEquipment	PhaseName	NA	Fence Installation
tblProjectCharacteristics	OperationalYear	2014	2017
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

Note: NA = Not Applicable

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0704	0.7625	0.4043	1.0700e-003	0.0418	0.0312	0.0729	4.8900e-003	0.0290	0.0339	0.0000	98.2810	98.2810	0.0277	0.0000	98.8626
Total	**0.0704**	**0.7625**	**0.4043**	**1.0700e-003**	**0.0418**	**0.0312**	**0.0729**	**4.8900e-003**	**0.0290**	**0.0339**	**0.0000**	**98.2810**	**98.2810**	**0.0277**	**0.0000**	**98.8626**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0704	0.7625	0.4043	1.0700e-003	0.0418	0.0312	0.0729	4.8900e-003	0.0290	0.0339	0.0000	98.2808	98.2808	0.0277	0.0000	98.8624
Total	**0.0704**	**0.7625**	**0.4043**	**1.0700e-003**	**0.0418**	**0.0312**	**0.0729**	**4.8900e-003**	**0.0290**	**0.0339**	**0.0000**	**98.2808**	**98.2808**	**0.0277**	**0.0000**	**98.8624**

Percent Reduction in Emissions with Mitigation Measures Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Percent Reduction in Emissions with Mitigation Measures Applied

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Fence Installation	Site Preparation	1/1/2017	2/11/2017	5	30	NA
2	Tortoise Translocation	Site Preparation	2/12/2017	3/25/2017	5	30	NA

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Fence Installation	Bore/Drill Rigs	1	4.00	205	0.50
Fence Installation	Generator Sets	1	8.00	84	0.74
Fence Installation	Off-Highway Trucks	2	8.00	400	0.38
Fence Installation	Trenchers	1	4.00	80	0.50
Tortoise Translocation	Bore/Drill Rigs	1	4.00	205	0.50
Tortoise Translocation	Off-Highway Trucks	2	8.00	400	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Fence Installation	5	13.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Tortoise Translocation	3	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Not Applicable

3.2 Fence Installation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0393	0.0000	0.0393	4.2500e-003	0.0000	4.2500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0411	0.4315	0.2331	5.8000e-004	0.0000	0.0192	0.0192	0.0000	0.0180	0.0180	0.0000	53.5504	53.5504	0.0145	0.0000	53.8548
Total	**0.0411**	**0.4315**	**0.2331**	**5.8000e-004**	**0.0393**	**0.0192**	**0.0585**	**4.2500e-003**	**0.0180**	**0.0223**	**0.0000**	**53.5504**	**53.5504**	**0.0145**	**0.0000**	**53.8548**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.1000e-004	1.7100e-003	0.0157	3.0000e-005	2.4400e-003	2.0000e-005	2.4600e-003	6.5000e-004	2.0000e-005	6.6000e-004	0.0000	2.0678	2.0678	1.3000e-004	0.0000	2.0705
Total	**8.1000e-004**	**1.7100e-003**	**0.0157**	**3.0000e-005**	**2.4400e-003**	**2.0000e-005**	**2.4600e-003**	**6.5000e-004**	**2.0000e-005**	**6.6000e-004**	**0.0000**	**2.0678**	**2.0678**	**1.3000e-004**	**0.0000**	**2.0705**

3.2 Fence Installation - 2017 (continued)

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0393	0.0000	0.0393	4.2500e-003	0.0000	4.2500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0411	0.4315	0.2331	5.8000e-004	0.0000	0.0192	0.0192	0.0000	0.0180	0.0180	0.0000	53.5503	53.5503	0.0145	0.0000	53.8548
Total	**0.0411**	**0.4315**	**0.2331**	**5.8000e-004**	**0.0393**	**0.0192**	**0.0585**	**4.2500e-003**	**0.0180**	**0.0223**	**0.0000**	**53.5503**	**53.5503**	**0.0145**	**0.0000**	**53.8548**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.1000e-004	1.7100e-003	0.0157	3.0000e-005	2.4400e-003	2.0000e-005	2.4600e-003	6.5000e-004	2.0000e-005	6.6000e-004	0.0000	2.0678	2.0678	1.3000e-004	0.0000	2.0705
Total	**8.1000e-004**	**1.7100e-003**	**0.0157**	**3.0000e-005**	**2.4400e-003**	**2.0000e-005**	**2.4600e-003**	**6.5000e-004**	**2.0000e-005**	**6.6000e-004**	**0.0000**	**2.0678**	**2.0678**	**1.3000e-004**	**0.0000**	**2.0705**

3.3 Tortoise Translocation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0285	0.3292	0.1555	4.6000e-004	0.0000	0.0119	0.0119	0.0000	0.0110	0.0110	0.0000	42.6627	42.6627	0.0131	0.0000	42.9372
Total	**0.0285**	**0.3292**	**0.1555**	**4.6000e-004**	**0.0000**	**0.0119**	**0.0119**	**0.0000**	**0.0110**	**0.0110**	**0.0000**	**42.6627**	**42.6627**	**0.0131**	**0.0000**	**42.9372**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0285	0.3292	0.1555	4.6000e-004	0.0000	0.0119	0.0119	0.0000	0.0110	0.0110	0.0000	42.6627	42.6627	0.0131	0.0000	42.9372
Total	**0.0285**	**0.3292**	**0.1555**	**4.6000e-004**	**0.0000**	**0.0119**	**0.0119**	**0.0000**	**0.0110**	**0.0110**	**0.0000**	**42.6627**	**42.6627**	**0.0131**	**0.0000**	**42.9372**

3.3 Tortoise Translocation - 2017 (continued)

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Not Applicable

4.2 Trip Summary Information

Not Applicable

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.434564	0.068056	0.178415	0.157220	0.054651	0.008723	0.006985	0.074355	0.001157	0.001000	0.009707	0.000674	0.004492

4.4 Fleet Mix

Not Applicable

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Not Applicable

Mitigated and Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total	**0**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total	**0**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Consumer Products	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Architectural Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

Not Applicable

8.0 Waste Detail

8.1 Mitigation Measures Waste

Not Applicable

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Not Applicable	0	0	0	0	0	NA

10.0 Vegetation

Not Applicable

29 Palms Land Acquisition and Airspace Establishment SEIS: Alternative 2

Mojave Desert Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.00	0	66.14	0	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project-specific acreage, desert setting

Construction Phase - Project-specific construction phases

Off-road Equipment - Off-highway trucks = pickup truck, water truck; bore/drill rigs = vibrating post driver

Off-road Equipment -

Off-road Equipment - Off-highway trucks = pickup truck, water truck; bore/drill rigs = gas-powered auger

Grading - All project acreage will be disturbed during fence installation

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	40.00	30.00
tblConstructionPhase	NumDays	40.00	30.00
tblConstructionPhase	PhaseEndDate	3/24/2017	3/25/2017
tblConstructionPhase	PhaseEndDate	2/10/2017	2/11/2017
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName	NA	Fence Installation
tblOffRoadEquipment	PhaseName	NA	Fence Installation
tblOffRoadEquipment	PhaseName	NA	Fence Installation
tblOffRoadEquipment	PhaseName	NA	Fence Installation
tblProjectCharacteristics	OperationalYear	2014	2017
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

Note: NA = Not Applicable

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0704	0.7625	0.4043	1.0700e-003	0.0375	0.0312	0.0687	4.4400e-003	0.0290	0.0335	0.0000	98.2810	98.2810	0.0277	0.0000	98.8626
Total	**0.0704**	**0.7625**	**0.4043**	**1.0700e-003**	**0.0375**	**0.0312**	**0.0687**	**4.4400e-003**	**0.0290**	**0.0335**	**0.0000**	**98.2810**	**98.2810**	**0.0277**	**0.0000**	**98.8626**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0704	0.7625	0.4043	1.0700e-003	0.0375	0.0312	0.0687	4.4400e-003	0.0290	0.0335	0.0000	98.2808	98.2808	0.0277	0.0000	98.8624
Total	**0.0704**	**0.7625**	**0.4043**	**1.0700e-003**	**0.0375**	**0.0312**	**0.0687**	**4.4400e-003**	**0.0290**	**0.0335**	**0.0000**	**98.2808**	**98.2808**	**0.0277**	**0.0000**	**98.8624**

Percent Reduction in Emissions with Mitigation Measures Applied

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Percent Reduction in Emissions with Mitigation Measures Applied

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Fence Installation	Site Preparation	1/1/2017	2/11/2017	5	30	NA
2	Tortoise Translocation	Site Preparation	2/12/2017	3/25/2017	5	30	NA

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Fence Installation	Bore/Drill Rigs	1	4.00	205	0.50
Fence Installation	Generator Sets	1	8.00	84	0.74
Fence Installation	Off-Highway Trucks	2	8.00	400	0.38
Fence Installation	Trenchers	1	4.00	80	0.50
Tortoise Translocation	Bore/Drill Rigs	1	4.00	205	0.50
Tortoise Translocation	Off-Highway Trucks	2	8.00	400	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Fence Installation	5	13.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Tortoise Translocation	3	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Not Applicable

3.2 Fence Installation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0351	0.0000	0.0351	3.7900e-003	0.0000	3.7900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0411	0.4315	0.2331	5.8000e-004	0.0000	0.0192	0.0192	0.0000	0.0180	0.0180	0.0000	53.5504	53.5504	0.0145	0.0000	53.8548
Total	**0.0411**	**0.4315**	**0.2331**	**5.8000e-004**	**0.0351**	**0.0192**	**0.0543**	**3.7900e-003**	**0.0180**	**0.0218**	**0.0000**	**53.5504**	**53.5504**	**0.0145**	**0.0000**	**53.8548**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.1000e-004	1.7100e-003	0.0157	3.0000e-005	2.4400e-003	2.0000e-005	2.4600e-003	6.5000e-004	2.0000e-005	6.6000e-004	0.0000	2.0678	2.0678	1.3000e-004	0.0000	2.0705
Total	**8.1000e-004**	**1.7100e-003**	**0.0157**	**3.0000e-005**	**2.4400e-003**	**2.0000e-005**	**2.4600e-003**	**6.5000e-004**	**2.0000e-005**	**6.6000e-004**	**0.0000**	**2.0678**	**2.0678**	**1.3000e-004**	**0.0000**	**2.0705**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0351	0.0000	0.0351	3.7900e-003	0.0000	3.7900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0411	0.4315	0.2331	5.8000e-004	0.0000	0.0192	0.0192	0.0000	0.0180	0.0180	0.0000	53.5503	53.5503	0.0145	0.0000	53.8548
Total	**0.0411**	**0.4315**	**0.2331**	**5.8000e-004**	**0.0351**	**0.0192**	**0.0543**	**3.7900e-003**	**0.0180**	**0.0218**	**0.0000**	**53.5503**	**53.5503**	**0.0145**	**0.0000**	**53.8548**

3.2 Fence Installation - 2017 (continued)

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.1000e-004	1.7100e-003	0.0157	3.0000e-005	2.4400e-003	2.0000e-005	2.4600e-003	6.5000e-004	2.0000e-005	6.6000e-004	0.0000	2.0678	2.0678	1.3000e-004	0.0000	2.0705
Total	**8.1000e-004**	**1.7100e-003**	**0.0157**	**3.0000e-005**	**2.4400e-003**	**2.0000e-005**	**2.4600e-003**	**6.5000e-004**	**2.0000e-005**	**6.6000e-004**	**0.0000**	**2.0678**	**2.0678**	**1.3000e-004**	**0.0000**	**2.0705**

3.3 Tortoise Translocation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0285	0.3292	0.1555	4.6000e-004	0.0000	0.0119	0.0119	0.0000	0.0110	0.0110	0.0000	42.6627	42.6627	0.0131	0.0000	42.9372
Total	**0.0285**	**0.3292**	**0.1555**	**4.6000e-004**	**0.0000**	**0.0119**	**0.0119**	**0.0000**	**0.0110**	**0.0110**	**0.0000**	**42.6627**	**42.6627**	**0.0131**	**0.0000**	**42.9372**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Tortoise Translocation - 2017 (continued)

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0285	0.3292	0.1555	4.6000e-004	0.0000	0.0119	0.0119	0.0000	0.0110	0.0110	0.0000	42.6627	42.6627	0.0131	0.0000	42.9372
Total	**0.0285**	**0.3292**	**0.1555**	**4.6000e-004**	**0.0000**	**0.0119**	**0.0119**	**0.0000**	**0.0110**	**0.0110**	**0.0000**	**42.6627**	**42.6627**	**0.0131**	**0.0000**	**42.9372**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Not Applicable

4.2 Trip Summary Information

Not Applicable

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
NA	0	0	0	0	0	0	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.434564	0.068056	0.178415	0.157220	0.054651	0.008723	0.006985	0.074355	0.001157	0.001000	0.009707	0.000674	0.004492

4.4 Fleet Mix

Not Applicable

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Not Applicable

Mitigated and Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas (cont.)

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total	**0**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total	**0**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Consumer Products	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Architectural Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

Not Applicable

8.0 Waste Detail

8.1 Mitigation Measures Waste

Not Applicable

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Not Applicable	0	0	0	0	0	NA

10.0 Vegetation

Not Applicable

Annual Estimated Emissions from the Proposed Project within the MDAB: Alternatives 1 & 2

Emission Source	Emissions (tons/year) VOCs	Emissions (tons/year) NO_x	Emissions (tons/year) CO	Emissions (tons/year) SO_2	Emissions (tons/year) PM_{10}	Emissions (tons/year) $PM_{2.5}$	Metric tons per year CO_2	Metric tons per year CH_4	Metric tons per yearN_2O	Metric tons per year CO2e
Helicopter Emissions	0.0002	0.0060	0.0031	N/A	0.0050	N/A	63.9413	N/A	N/A	63.9413
Total Emissions (tons/year)	**0.0002**	**0.0060**	**0.0031**	**N/A**	**0.0050**	**N/A**	**63.9413**	**N/A**	**N/A**	**63.9413**

Notes:

The CO_2e for helicopter emissions was calcuated via the USEPA's Greenhouse Gas Equivalencies Calculator, located at: http://www2.epa.gov/energy/greenhouse-gas-equivalencies-calculator

N/A = not available or not applicable

APPENDIX E
RESPONSE TO PUBLIC COMMENTS

This page intentionally left blank.

APPENDIX E RESPONSE TO PUBLIC COMMENTS

1.1 OVERVIEW OF COMMENTS AND RESPONSES

1.1.1 Timing and Methods of Comment Submittal

The 45-day public comment period provided an opportunity for government agencies, interest groups, and the general public to comment on the Draft Supplemental Environmental Impact Statement (SEIS). The Marine Corps advertised three primary methods to submit comments: (1) written or oral statements provided in person at the three public meetings, (2) written comments mailed to the SEIS project office, and (3) written comments entered directly or uploaded to the comment page on the SEIS public website. Several comments were submitted by email and these comments were accepted and processed along with those received by regular mail. The public comment period began on September 30, 2016 and closed on November 14, 2016. Late comments that were received within a few days after the November 14, 2016 end date of the comment period were accepted and included in the review and response process. One comment was received by mail before the public comment period began (and before public release of the Draft SEIS); a duplicate of this comment (with marginal additional text) was later submitted by the same commenter during the comment period, so the premature duplicate copy was not included in the comment review process.

This Appendix contains all comments received during the public comment period. All received comments were assessed and considered both individually and collectively during development of this Final SEIS. Written responses were prepared for all comments and are also included in this Appendix. Certain substantive comments inspired additional data collection, impact analysis, and text changes or additions that were incorporated into this Final SEIS.

1.1.2 Comment Response Process

The DON implemented the following process for reviewing and responding to all comments received during (and immediately following) the public comment period for the Draft SEIS:

- The Marine Corps carefully reviewed all comment letters, website comments, and oral statements and assigned a unique number to each. This number was also assigned to the commenter. Many comment letters for which distinct or separable points could be identified and addressed were delineated using a red vertical line in the margin to subdivide the letter into numbered "sub-comments." In a few cases the commenter subdivided their own letter into numbered paragraphs.
- Appropriate resource specialists and Marine Corps and Navy authorities considered all comments (and sub-comments) and prepared and approved appropriate written responses.
- As appropriate based on substantive comments about the SEIS analysis and findings, the Marine Corps modified the Final SEIS to make corrections and improve or clarify the analysis from the Draft SEIS.

1.1.3 Summary of Draft SEIS Public Comments

1.1.3.1 Official Comments Received During the Public Comment Period

A total of 4,734 comments were submitted and accepted in response to the Draft SEIS. Table E-1 shows a breakdown of the number of comments received through each comment submittal method. Nearly all of

the letters received by the Marine Corps (99.6%) were submitted via the project website. A majority of those submittals were form letters with identical content. Although a single person submitted 4,696 of these letters in a single file uploaded to the website, they were counted as individual comments from each person whose name appeared on each letter. Of the 4,696 letters submitted in this manner, most of them were exact duplicates except for the name and address. The remaining contained some of the same elements as the form letter but with some variable and original content.

Two comment letters were submitted twice (via the website first, followed by a signed original copy via mail). In each case, both the original and the duplicate letter were included in the totals shown in Table E-1, reflecting the two methods by which they were submitted.

Table E-1. Summary of Comments Received During Public Review of the Draft SEIS

Comment Submission Methods	Number of Comments Received
Public Meetings - Written Total	4
Joshua Tree	*0*
Palm Springs	*0*
Barstow	*4*
Public Meetings – Verbal Total	2
Joshua Tree	*0*
Palm Springs	*0*
Barstow	*2*
Public Website	4,716
Via mail/email	12
Total	**4,734**

1.1.4 Comment Directory

The directory below (see Table E-2) provides a listing of commenters by last name or agency. After locating your name, note the letter and number in the third column. This unique coding was assigned to your comment document and is found in the upper left-hand corner of the comment. The page number your comment and response appears on is provided in the fourth column. In some instances, individuals asked that their name be withheld from the publication or no name was provided. In both cases, “Name Withheld By Request” or “No Name Provided” has been entered in the directory as appropriate.

The comments are printed in numerical order and are organized into eight sections: written comments received at the public meetings (PM-1), oral comments received at the public meetings (V-5), comments received via mail or email (M-7), and comments received through the project website (W-19).

Table E-2. Index of Commenters

Commenter	Agency/Organization	Comment Number	Page Number
Public Meetings			
Henry, David		PM-1/PM-2	E-93/E-95
Henry, Valerie		PM-3/PM-4	E-94/E-96
Verbal			
Stich, Pam		V-6	E-97
Zantiny, David		V-5	E-98
Mail			
Alrayes, Nidham Aram	San Bernardino County Department of Public Works	M-7	E-99
Bell, Chuck	Lucerne Valley Economic Development Association (LVEDA)	M-8	E-100
De Salvio, Alan	Mojave Desert Air Quality Management District	M-9	E-101
Deckwar, Darlene		M-10	E-102
Dunning, Connell	U.S. Environmental Protection Agency, Region IX	M-11	E-103
LaRue, Edward L., Jr.	Desert Tortoise Council	M-12	E-106
McNair, Leslie	State of California – Natural Resources Agency, Department of Fish and Wildlife	M-13	E-111
Port, Patricia Sanderson	Office of Environmental Policy and Compliance	M-14	E-115
Shoemacher, Barbara		M-15	E-116
Stewart, Bill D.		M-16	E-121
Sullivan, Bob		M-17	E-123
Tuck, William L., Jr.		M-18	E-130
Website			
Abalone Alliance Clearinghouse		W-38	E-239
?muda, Ma?gorzata		W-38	E-239
A, Michelle		W-38	E-239
a'Becket, Suzanne		W-38	E-239
Abate, Andrew		W-38	E-239
Abate, Johanna		W-38	E-239
Abbott, Elizabeth		W-38	E-239
Abbott, Galen		W-38	E-239
Abela, Alice		W-38	E-239
Abrahamian, Kevin		W-38	E-239
Abrams, Carol		W-38	E-239
Abrams, Sally		W-38	E-239
Acebo, Ryan		W-38	E-239
Acosta, Alberto		W-38	E-239
Acosta, Anna		W-38	E-239
Adachi, Margaret		W-38	E-239
Adams, Marisela		W-38	E-239
Adams, Mary		W-38	E-239
Adams, Paula		W-38	E-239
Adams, Robert		W-38	E-239
Adams, Spencer		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Adams, Ted		W-38	E-239
Adams, Winn		W-38	E-239
Adan, Elizabeth		W-38	E-239
Adelson, Julie		W-38	E-239
Aenlle, Willy		W-38	E-239
Aeschbacher, Jr., Chuck		W-38	E-239
Agius, Johanna		W-38	E-239
Ague, Kate		W-38	E-239
Aguilar, Dr. Mario		W-38	E-239
Aguilar, Norman		W-38	E-239
Aguilar, Tessie		W-38	E-239
Aguilerra, David		W-38	E-239
Aharonian, Natalie		W-38	E-239
Aiello, Michelle		W-38	E-239
Akasha, Lilith		W-38	E-239
Al-Aqeel, Tamadhur		W-38	E-239
Alarcon, Rita		W-38	E-239
Alasti, Isabella		W-38	E-239
Albert, Cheryl		W-38	E-239
Albert, Cheryl		W-38	E-239
Albertine, Gisèle		W-38	E-239
Albright, Evan		W-38	E-239
Alden, Garrett		W-38	E-239
Alden, Rory		W-38	E-239
Aldrich, Jim		W-38	E-239
Alet, Frances		W-38	E-239
Alexander, Anne-Marie		W-38	E-239
Alexander, Charles		W-38	E-239
Alexander, Gerald		W-38	E-239
Alexander, J		W-38	E-239
Alexander, June		W-38	E-239
Alford, Alice		W-38	E-239
Alford, Gail		W-38	E-239
Alford, Jeff S		W-38	E-239
Alicea, Julie		W-38	E-239
Allen, Cat		W-38	E-239
Allen, Connie		W-38	E-239
Allen, Dennis		W-38	E-239
Allen, Rudi		W-38	E-239
Alley, Julie		W-38	E-239
Alley, Lynn		W-38	E-239
Alpern, Susan		W-38	E-239
Alston, Patricia		W-38	E-239
Altman, Adrienne		W-38	E-239
Altman, Laura		W-38	E-239
Altman, Peter		W-38	E-239
Altman, Ruth		W-38	E-239
Alvarado, Jazmin		W-38	E-239
Alvarez, Rene		W-38	E-239
Amalfitano, Gloriamarie		W-38	E-239
Amato, Donna		W-38	E-239
Ambrosius, Judi L		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Ames, Michael		W-38	E-239
Amick, Tom		W-38	E-239
Amos, Clairessa		W-38	E-239
Anderholm, Project Director Jon F.		W-38	E-239
Andersen, Evette		W-38	E-239
Andersen, Janis		W-38	E-239
Andersen, Patricia		W-38	E-239
Anderson, Carolyn		W-38	E-239
Anderson, Christeen		W-38	E-239
Anderson, Dave		W-38	E-239
Anderson, Frank B.		W-38	E-239
Anderson, Ileene	Center for Biological Diversity	W-33	E-168
Anderson, Judith		W-38	E-239
Anderson, Lori		W-38	E-239
Anderson, Lynne		W-38	E-239
Anderson, Nancy		W-38	E-239
Anderson, Richard		W-38	E-239
Anderson, Samantha		W-38	E-239
Anderson, Sandra E		W-38	E-239
Anderson, Stephen		W-38	E-239
Anderson, Wayne		W-38	E-239
Andersson, Joan		W-38	E-239
Andes, Glenda		W-38	E-239
Andre, Javier		W-38	E-239
Andre, Jim		W-38	E-239
Andreas, Leticia		W-38	E-239
Andrews, Jean		W-38	E-239
Angel, John		W-38	E-239
Angel, Sally		W-38	E-239
Angeles, Christine		W-38	E-239
Angelides, Fawnette		W-38	E-239
Angell, J		W-38	E-239
Angell, Mary		W-38	E-239
Angle, Eve		W-38	E-239
Anisman, Mark		W-38	E-239
Ann, Tina		W-38	E-239
Anson, Gina		W-38	E-239
Anthony, Elizabeth		W-38	E-239
Anthony, Kim		W-38	E-239
Anton, Leah		W-38	E-239
Antone, Linda		W-38	E-239
Antrim, Craig		W-38	E-239
App, Brittany		W-38	E-239
Appel, Mary		W-38	E-239
Appling, Leslie		W-38	E-239
Aquino, Rey		W-38	E-239
Aram, Susaan		W-38	E-239
Arapoudis, Sandra		W-38	E-239
Araujo, Linda		W-38	E-239
Arbuckle, Conservation Chair Nancy		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Arcila, Billy		W-38	E-239
Arevalos, Peggy		W-38	E-239
Arias, Elvira		W-38	E-239
Arikat, Amin		W-38	E-239
Armer, Joan		W-38	E-239
Armigo, Victoria		W-38	E-239
Armstrong, Lynn		W-38	E-239
Arnett, Jeff		W-38	E-239
Arnold, Stephanie		W-38	E-239
Arnos, Kathy		W-38	E-239
Aronson, Robert		W-38	E-239
Arquilla, Vance		W-38	E-239
Arroyo, Robert		W-38	E-239
Arroyo, Sally		W-38	E-239
Arroyo-Glausch, Sheryl		W-38	E-239
Arthur, Paula		W-38	E-239
Artigas, Alejandro		W-38	E-239
Asbelle, Karen		W-63	E-265
Ashley, Sam		W-38	E-239
Ashman, Brenda		W-38	E-239
Ashton, Don		W-38	E-239
Ashton, Leo		W-38	E-239
Ashurst, D		W-38	E-239
Athey, Randall		W-38	E-239
Atkins, Nathan		W-38	E-239
Atkinson, Rhys		W-38	E-239
Atwell, J.		W-38	E-239
Aubouard, Daniel		W-38	E-239
Aubrey, Lynda		W-38	E-239
Auelua, Tupefaavae		W-38	E-239
Auge, Jr., George E		W-38	E-239
Auger, Sylvie		W-38	E-239
August, Jane		W-38	E-239
Austin, Diane		W-38	E-239
Austin, Sam		W-38	E-239
Auzins, Liga		W-38	E-239
Avellan, Mark		W-38	E-239
Averett, A.J.		W-38	E-239
Averill, Wendy		W-38	E-239
Aviles, Natalia		W-38	E-239
Avritt, Carrie		W-38	E-239
Ayala, Joana		W-38	E-239
Ayres, Victoria		W-38	E-239
B, Dennis		W-38	E-239
B, J		W-38	E-239
B, S		W-38	E-239
B., Jill		W-38	E-239
B., N.		W-38	E-239
Baar, Stacy		W-38	E-239
Babst, Christina		W-38	E-239
Bacci, André Henrique		W-38	E-239
Bach, Kimberly		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Bacon, Loia		W-38	E-239
Badeau, Evelyn		W-38	E-239
Bader, Susanne		W-38	E-239
Badger, Rob		W-38	E-239
Baele, Frank		W-38	E-239
Baeza, Rosa		W-38	E-239
Bagby, Janet		W-38	E-239
Baier, Brad		W-38	E-239
Baier, Carol		W-38	E-239
Bailey, Brenda		W-38	E-239
Bailey, Gary		W-38	E-239
Bailey, Norene		W-38	E-239
Bain, Claire		W-38	E-239
Bainum, Debra		W-38	E-239
Baker, Mandy		W-19	E-154
Baker, Sheila		W-38	E-239
Baker, Vickey		W-38	E-239
Baker, Wave		W-38	E-239
Balasingam, Deesa		W-38	E-239
Balboa, Juan and Maria		W-38	E-239
Balch, Earl		W-38	E-239
Baldock, Barbara		W-38	E-239
Baldwin, Chris		W-38	E-239
Baldwin, Elaine		W-38	E-239
Baldwin, Leland		W-38	E-239
Baldwin, Natylie		W-38	E-239
Baldwin, Tanya		W-38	E-239
Baldwin, Valerie		W-38	E-239
Ball, George		W-38	E-239
Ballenger, Barbara		W-38	E-239
Balthasar, Lawrence		W-38	E-239
Baltrip, J. Ayana		W-38	E-239
Balzan, Darlene		W-38	E-239
Banes, Debra		W-38	E-239
Banever, Carol		W-38	E-239
Banzhaf, Desiree		W-38	E-239
Barba, Jorge		W-38	E-239
Barbarow, Jane		W-38	E-239
Barbour, Michelle		W-38	E-239
Barca, Erin		W-38	E-239
Barclay, Dale J		W-38	E-239
Barich, Mary		W-38	E-239
Barkow, Carolyn		W-38	E-239
Barnes, Joanne		W-38	E-239
Barnes, Sharon		W-38	E-239
Barnett, Laurie		W-38	E-239
Barnett, Susan		W-38	E-239
Barnhart, S.		W-38	E-239
Barone, John		W-38	E-239
Barr, Anne		W-38	E-239
Barr, Juli		W-38	E-239
Barragon, Rafael		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Barre, Laurie		W-38	E-239
Barrett, Elaine		W-38	E-239
Barringer, Debra		W-38	E-239
Barron, Tiobe		W-38	E-239
Barry, Laura		W-38	E-239
Barrymore, Carroll and Susanne		W-38	E-239
Barthes, Sharyn		W-38	E-239
Bartleman, Mark		W-38	E-239
Bartlett, Charles		W-38	E-239
Bartlett, Janice		W-38	E-239
Bassett, Christine		W-38	E-239
Bast, N.J.		W-38	E-239
Basu, Rosanne		W-38	E-239
Batalla, Shelby		W-38	E-239
Bateman, Abby		W-38	E-239
Bates, Angela		W-38	E-239
Bates, Janis		W-38	E-239
Battistessa, Gerri		W-38	E-239
Baum, Miriam		W-38	E-239
Baxel, Gary		W-38	E-239
Baxter, Jo		W-38	E-239
Baxter, Joslyn		W-38	E-239
Bayer, Judith		W-38	E-239
Beach, Kim		W-38	E-239
Bean, Heidi		W-38	E-239
Bear, Jackie		W-38	E-239
Bear, Rev. Charlotte		W-38	E-239
Beard, Clara		W-38	E-239
Beaser, Deborah		W-38	E-239
Beauchamp, Catherine		W-38	E-239
Bechko, Corinna		W-38	E-239
Bechky, Allen		W-38	E-239
Bechmann, Elisabeth		W-38	E-239
Beck, Autumn		W-38	E-239
Beck, Connie		W-38	E-239
Becker, Barbara		W-38	E-239
Becker, Carol		W-38	E-239
Becker, Christine		W-38	E-239
Becker, Sue		W-38	E-239
Beckman, Michael		W-38	E-239
Bedford, Pauline		W-38	E-239
Beebe, Gordon		W-38	E-239
Beebe, Margaret		W-38	E-239
Beeler, Gary		W-38	E-239
Beeler, Meg		W-38	E-239
Beeson, Malissa		W-38	E-239
Beeson, Steev		W-38	E-239
Beezley, Stephanie		W-38	E-239
Behar, Victoria		W-38	E-239
Beidler, Marilyn		W-38	E-239
Beigel, Lynda		W-38	E-239
Bein, Ann		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Belenky, Lisa T.	Center for Biological Diversity	W-33	E-168
Bell, Jodi		W-38	E-239
Bell, Robert		W-38	E-239
Bell, Susan		W-38	E-239
Bell, William		W-38	E-239
Bellaccomo, Josephine		W-38	E-239
Bellamy, Bob		W-38	E-239
Bellettini, Kelly		W-38	E-239
Belli, Joseph		W-38	E-239
Belloso-Curiel, Jorge		W-38	E-239
Belt, Annie		W-38	E-239
Benet, Mercedes		W-38	E-239
Benham, Laurie		W-38	E-239
Benjamin, Elaine		W-38	E-239
Bennett, Bruce		W-38	E-239
Bennett, Elise		W-38	E-239
Bennett, Eliza		W-38	E-239
Bennett, Hanneke		W-38	E-239
Bennett, Maris		W-38	E-239
Bennettcauchon, Terry		W-38	E-239
Bennigson, Barbara		W-38	E-239
Bennion, Beth		W-38	E-239
Benson, Celia		W-38	E-239
Benton, Annette		W-38	E-239
Benvenuti, Rev		W-38	E-239
Benzel, Karen		W-38	E-239
Bercowetz, Jesse		W-38	E-239
Berg, Owner Elaine		W-38	E-239
Bergan, Eileen		W-38	E-239
Bergen, Andrea		W-38	E-239
Berger, Dr. Brad W		W-38	E-239
Berger, Elmer		W-38	E-239
Berger, Karen		W-38	E-239
Berggren, Peter		W-38	E-239
Bergman, Eric		W-38	E-239
Bergmann, Theodore		W-38	E-239
Bergsma, Debi		W-38	E-239
Bergstedt, Charlie		W-38	E-239
Bering, Caroline		W-38	E-239
Berk, Wendy		W-38	E-239
Berkhimer, June		W-38	E-239
Berman, Leah		W-38	E-239
Berman, Nancy		W-38	E-239
Bernson, Janet		W-38	E-239
Bernstein, Judith		W-38	E-239
Berntsson, Susanne		W-38	E-239
Berry, David		W-38	E-239
Berry, Nina		W-38	E-239
Bertrams, Michael		W-38	E-239
Bertsch, Hans		W-38	E-239
Bescript, Cherie		W-38	E-239
Besser, Eunice		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Bessie, Dan		W-38	E-239
Betker, Deanna		W-38	E-239
Bettenhausen, Elizabeth		W-38	E-239
Bezner, Terry		W-38	E-239
Bickmore, Paul		W-38	E-239
Biemuller, Eric		W-38	E-239
Bien, Karen		W-38	E-239
Bierman, Elaine		W-38	E-239
Biggins, Henry		W-38	E-239
Biglia, Monique		W-38	E-239
Bigstyck, Tygarjas		W-38	E-239
Bilecki, Alan		W-38	E-239
Bilicke, Kathy		W-38	E-239
Bills, Barbara		W-38	E-239
Bilodeau, Lynda		W-38	E-239
Binckley, Charles		W-38	E-239
Bindas, Janet		W-38	E-239
Bindloss, Lesley		W-38	E-239
Bingham, Dana		W-38	E-239
Bingo, Vicki		W-38	E-239
Binzley, Candyce		W-38	E-239
Bippert-Plymate, Teresa		W-38	E-239
Birdsall, Ryan		W-38	E-239
Biret, Cynthia		W-38	E-239
Birmingham, Hilary		W-38	E-239
Biron, Deborah		W-38	E-239
Bishop, Anne		W-38	E-239
Bishop, Captain Greg		W-38	E-239
Bishop, Debra		W-38	E-239
Bishop, F.W.		W-58	E-260
Bishop, James		W-38	E-239
Bjorkman, Inge		W-38	E-239
Black, C		W-38	E-239
Black, Celeste		W-38	E-239
Black, Chanelle		W-38	E-239
Black, Glenn		W-38	E-239
Black, Josephine		W-38	E-239
Blackman, Susan L		W-38	E-239
Blackwell, Ozzie		W-38	E-239
Blackwell-Marchant, Pat		W-38	E-239
Blain, Richard		W-38	E-239
Blair, Roger		W-38	E-239
Blaisdell, Jill		W-38	E-239
Blake, Sheila		W-38	E-239
Blancato, Nadine		W-38	E-239
Blanco, Lucy		W-38	E-239
Blaney, Carol		W-38	E-239
Blanton, Diana		W-38	E-239
Blaseck, Brad		W-38	E-239
Bleecher, D		W-38	E-239
Bleha, Patricia C		W-38	E-239
Blincoe, Richard		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Bloch, David		W-38	E-239
Blocher, Sandra		W-38	E-239
Bloxsom, Daniel		W-38	E-239
Blue, Kathy		W-38	E-239
Blum, Robin		W-38	E-239
Blythe, Frances		W-38	E-239
Bocchetti, Ralph		W-38	E-239
Bodiford, Larry & Loretta		W-38	E-239
Bodt, Albert		W-38	E-239
Bogdanovich, Susan		W-38	E-239
Bogin, Ronald		W-38	E-239
Bogios, Constantine		W-38	E-239
Bohin, Holly		W-38	E-239
Bohn, Diana		W-38	E-239
Boldetti, Tony		W-38	E-239
Boley, Kathie		W-38	E-239
Bolman, Diane		W-38	E-239
Bolsky, Debbie		W-38	E-239
Bonacina, Nadja		W-38	E-239
Bonafede, Philip		W-38	E-239
Bonar, Mike		W-38	E-239
Bond, Steve		W-38	E-239
Bonney, Margaret		W-38	E-239
Bonnheim, Joanna		W-38	E-239
Boone, Christopher		W-38	E-239
Boone, Foster		W-38	E-239
Boone, Joseph		W-38	E-239
Boop, Cody		W-38	E-239
Boor, Carolyn		W-38	E-239
Boosinger, Marilynn		W-38	E-239
Bordenave, Michael		W-38	E-239
Borello, C.		W-38	E-239
Borgardt, Karen		W-38	E-239
Borie, Elizabeth		W-38	E-239
Boring, Jacob		W-38	E-239
Borje, Christine		W-38	E-239
Borrege, Sharon		W-38	E-239
Bors, Margo		W-38	E-239
Bortolin, Rob		W-38	E-239
Bos, Lisa		W-38	E-239
Bostic, Sara		W-38	E-239
Boswell, Tiffany		W-38	E-239
Botuchis, Lori		W-38	E-239
Bouckaert, Chris		W-38	E-239
Boudreau, Julie		W-38	E-239
Bourgeois, Lorie		W-38	E-239
Bourque, James		W-38	E-239
Bouteille, Cyril		W-38	E-239
Bowen, Laraine		W-38	E-239
Bowers, Sheila		W-38	E-239
Bowman, Candy		W-38	E-239
Bowman, Stacey		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Boychuk, Deborah		W-38	E-239
Boyd, Carol		W-38	E-239
Boyd, Esther		W-38	E-239
Boyd, Mame		W-38	E-239
Boyer, David		W-38	E-239
Boyle, Roxanne		W-38	E-239
Boylston, Sandra		W-38	E-239
Braband, Taryn		W-38	E-239
Brackney, Michael		W-38	E-239
Bradford, Deborah		W-38	E-239
Bradford, Patricia		W-38	E-239
Bradley, DeeAnn		W-38	E-239
Bradshaw, Jacqui		W-38	E-239
Brady, Bonnie		W-38	E-239
Brady, Tim		W-38	E-239
Bragg, Susan		W-38	E-239
Branca, C E		W-38	E-239
Brande, Kaili		W-38	E-239
Brandt, Elaine		W-38	E-239
Brandt, Leealyn		W-38	E-239
Brannigan, Kelly		W-38	E-239
Bransford, Gladys		W-38	E-239
Branson, Jack		W-38	E-239
Branson, Larry		W-38	E-239
Brant, Karen		W-38	E-239
Bratcher, Eric		W-38	E-239
Braude, Michael		W-38	E-239
Bray, Angie		W-38	E-239
Brazil, Diane		W-38	E-239
Brazis, Chris		W-38	E-239
Breiding, Joan		W-38	E-239
Breitkreuz, Paul		W-38	E-239
Bresnahan, Rosalind		W-38	E-239
Brestrup, Craig		W-38	E-239
Brewer, Georgia		W-38	E-239
Brewer, Laurel		W-38	E-239
Brickell, Julie		W-38	E-239
Briggs, William		W-38	E-239
Bright, Douglas		W-38	E-239
Brinkman, Lisabette		W-38	E-239
Britton, Bill		W-38	E-239
Britton, Joanne		W-38	E-239
Britton, Lindsay		W-38	E-239
Britton, Ruth		W-38	E-239
Broadwater, David		W-38	E-239
Broccoli, Louis		W-38	E-239
Brodersen, Nancy		W-38	E-239
Brodman, Linda		W-38	E-239
Brooks, Deborah		W-38	E-239
Brooks, Jamie Sue		W-38	E-239
Brooks, John		W-38	E-239
Brosseau, Lisa		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Brothers, William		W-38	E-239
Brotherton, Kate		W-38	E-239
Brotherton, Valerie C		W-38	E-239
Brower, Cristina		W-38	E-239
Brown, Caroline		W-38	E-239
Brown, Cecilia		W-38	E-239
Brown, Dace		W-38	E-239
Brown, Damon		W-38	E-239
Brown, Elizabeth		W-38	E-239
Brown, Erica		W-38	E-239
Brown, James		W-38	E-239
Brown, Roderick		W-38	E-239
Brown, Steve		W-38	E-239
Brown, Vera		W-38	E-239
Brownton, Page		W-38	E-239
Bruce, Edie		W-38	E-239
Bruington, Catherine		W-38	E-239
Brummette, Carrie		W-38	E-239
Brunton, James		W-38	E-239
Brusco, Deborah		W-38	E-239
Bryan, Cathy		W-38	E-239
Bryant, Mary		W-38	E-239
Bryce, Jackie		W-38	E-239
Bryne, Stephen		W-38	E-239
Buchanan, Betty		W-38	E-239
Bucher, Theresa		W-38	E-239
Buck, Margaret		W-38	E-239
Buckheim, Debbie		W-38	E-239
Buckler, Deb and Randy		W-38	E-239
Buckley, Leo		W-38	E-239
Buckner, Lynne		W-38	E-239
Budd, George		W-38	E-239
Buehler, Robert		W-38	E-239
Buhowsky, Joe		W-38	E-239
Bui, Khoi		W-38	E-239
Bunch, Eugene		W-38	E-239
Burchardt, April		W-38	E-239
Burgess, Nicole		W-38	E-239
Burgin, Holly		W-38	E-239
Burke, Patrick		W-38	E-239
Burkett, Emerson		W-38	E-239
Burnaby, John		W-38	E-239
Burnett, Robert		W-38	E-239
Burns, Bruce		W-38	E-239
Burns, Elizabeth		W-38	E-239
Burtis, David		W-38	E-239
Bushey, Judith		W-38	E-239
Butler, B.		W-38	E-239
Butler, Elayne		W-38	E-239
Butler, Erik		W-38	E-239
Butler, Sam		W-38	E-239
Butler, Taz		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Butterworth, John		W-38	E-239
Buydos, Geary		W-38	E-239
Byers, Nancy		W-38	E-239
Bylin, Debi		W-38	E-239
C, Kristo		W-38	E-239
Cachopo, Patricia A		W-38	E-239
Cain, Ruth		W-38	E-239
Cain, Tamara		W-38	E-239
Calderon, Socrates		W-38	E-239
Caldwell, Brittany		W-38	E-239
Calhoun, Charles		W-38	E-239
Calloway, Brenda		W-38	E-239
Cameron, Carol		W-38	E-239
Camhi, Proprietor Gail		W-38	E-239
Campanelli, Mark		W-38	E-239
Campbell, Cici		W-38	E-239
Campbell, Dudley and Candace		W-38	E-239
Campbell, Merry		W-38	E-239
Campbell, Norma		W-38	E-239
Campbell, Ph.D., P.T., Dr. Joyce		W-38	E-239
Campbell, Steven		W-38	E-239
Campbell, Tomas		W-38	E-239
Cancell, June		W-38	E-239
Canham, Karalee		W-38	E-239
Canini, Heather		W-38	E-239
Cannavo, Angela T		W-38	E-239
Cannon, Frank		W-38	E-239
Cannon, Miki		W-38	E-239
Cano, Chris		W-38	E-239
Canp, Sandy		W-38	E-239
Cant, John		W-38	E-239
Cantu, Christine		W-38	E-239
Capadanno, Marea		W-38	E-239
Capasso, Celeste		W-38	E-239
Capobianco, Anthony		W-38	E-239
Capps, Christel		W-38	E-239
Capri, Gabriella		W-38	E-239
Caraway, Vicki C		W-38	E-239
Carbary, Lawrence		W-38	E-239
Carcamo, Jessica		W-38	E-239
Cardella, Sylvia		W-38	E-239
Cardenas, Maria		W-38	E-239
Carder, Tiffany		W-38	E-239
Cardew-Fanning, Neil		W-38	E-239
Carey, Cathy O'Leary		W-29	E-164
Cargill, Anne		W-38	E-239
Carlson, David		W-38	E-239
Carlson, Dr. Eric		W-38	E-239
Carlson, Julie		W-38	E-239
Carlson, Rita		W-38	E-239
Carlson, Sallie M.		W-38	E-239
Carlson, Susan		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Carlstroem, Matthew		W-38	E-239
Carman, Pat		W-38	E-239
Carmi, Ore		W-38	E-239
Carmichael, Victor		W-38	E-239
Carney, Frances		W-38	E-239
Carney, Gertrude		W-38	E-239
Carollo, Gina		W-38	E-239
Carothers, Chris		W-38	E-239
Carpenter, Rkachea		W-38	E-239
Carr, Gaile		W-38	E-239
Carr, Nancy		W-38	E-239
Carr, Rhonda		W-38	E-239
Carreon, Martin		W-38	E-239
Carrier, Paula		W-38	E-239
Carrieri, Chris		W-38	E-239
Carrillo, Daniel		W-38	E-239
Carro, Lina		W-38	E-239
Carroll, Jane		W-38	E-239
Carroll, Kathryn		W-38	E-239
Carson, Carol		W-38	E-239
Carter, Michelle		W-38	E-239
Cartwright, Carl		W-38	E-239
Cartwright, Jennifer		W-38	E-239
Carvajal, Mauricio		W-38	E-239
Carvell, Thomas		W-38	E-239
Cary, Cindy		W-38	E-239
Casagran, Federico		W-38	E-239
Casale, Veronica		W-38	E-239
Casares, Mary		W-38	E-239
Casarez, Donna		W-38	E-239
Casey, Jena		W-38	E-239
Casey, Tim		W-22	E-157
Casey, Veronica		W-38	E-239
Cash, Lisa		W-38	E-239
Casillas, Stella		W-38	E-239
Casler, Kris		W-38	E-239
Cassady, Marsh		W-38	E-239
Cassil, Armagh		W-38	E-239
Cassini, Marina		W-38	E-239
Castillo, Anthony		W-38	E-239
Castori, Danny		W-38	E-239
Castro, Carla		W-38	E-239
Castronovo, Catherine		W-38	E-239
Casulli, Arthur		W-38	E-239
Caswell, Gail		W-38	E-239
Catania, Joseph		W-38	E-239
Catherine, Cazzani		W-38	E-239
Cavalier, Andrea		W-38	E-239
Cavanaugh, Michael		W-38	E-239
Caviglia, G		W-38	E-239
Cayot, Linda		W-38	E-239
Cech, Geoff		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Cedeno, Ruth		W-38	E-239
Ceely, Richard		W-38	E-239
Cenci, Carol		W-38	E-239
Cerkanowicz, Deirdre		W-38	E-239
Cesena, Chuck		W-38	E-239
Chadderton, George		W-38	E-239
Chamberlain, Patricia		W-38	E-239
Chambers, Claire		W-38	E-239
Chan, Arthur		W-38	E-239
Chan, B.		W-38	E-239
Chan, Royce		W-38	E-239
Chandel, Corinne		W-38	E-239
Chandler, Vickie		W-38	E-239
Chang, Gabriel		W-38	E-239
Chapek, S.		W-38	E-239
Chapman, Rose		W-38	E-239
Chapman, Scott		W-38	E-239
Chapman, Susan		W-38	E-239
Chapman, Terri		W-38	E-239
Chapmon, Michelle		W-38	E-239
Charest, Catherine		W-38	E-239
Charland, Robert		W-38	E-239
Charlebois, Stacie		W-38	E-239
Charles, Connie		W-38	E-239
Charnes, Michael		W-38	E-239
Charney, Danielle		W-38	E-239
Charpied, Chair Donna		W-38	E-239
Chase, Felicia		W-38	E-239
Chase, Janelle		W-38	E-239
Chavarro, Melissa		W-38	E-239
Chavez, Esther		W-38	E-239
Cheek, Aimee Lee and William		W-38	E-239
Cheeseman, Gail		W-38	E-239
Cheeseman, Ted		W-38	E-239
Cheesman, Jean		W-38	E-239
Cheitlin, Melvin D.		W-38	E-239
Chen, Jamie		W-38	E-239
Chen, Jay		W-38	E-239
Chen, Mich		W-38	E-239
Cherner, Beverly		W-38	E-239
Chernukha, Alexandra		W-38	E-239
Chester, Tom		W-38	E-239
Chew, Debbie		W-38	E-239
Chi, AniMae		W-38	E-239
Chiang, Colleen		W-38	E-239
Chianis, Antonia		W-38	E-239
Childers, Deborah		W-38	E-239
Childs, Christie		W-38	E-239
Chinn, Karen		W-38	E-239
Choate, Robin		W-38	E-239
Chong, Gary		W-38	E-239
Chotiswatdi, Lydia		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Chotiswatdi, Pam		W-38	E-239
Choudhury, Kathryn		W-38	E-239
Christenson, Amy		W-38	E-239
Christianson, Steve C		W-38	E-239
Christie, Sarah		W-38	E-239
Christoff, Stephanie		W-38	E-239
Christy, Lisa		W-38	E-239
Church, Terry		W-38	E-239
Chynoweth, Iris		W-38	E-239
Ciazinski, JoAnne		W-38	E-239
Cicchi, Carla		W-38	E-239
Cisneros-Remington, Therese		W-38	E-239
Ciucci, C		W-38	E-239
Claman, Elizabeth		W-38	E-239
Clark, Audrey		W-38	E-239
Clark, Gary I		W-38	E-239
Clark, Gretchen		W-38	E-239
Clark, Ralph		W-38	E-239
Clark, Stephanie		W-38	E-239
Clark, Warren		W-38	E-239
Clarke, Darrell		W-38	E-239
Clarke, Dr Michael and Jeanine		W-38	E-239
Clayton, Judy		W-38	E-239
Clearwater, Mark		W-38	E-239
Cleveland, Clare		W-38	E-239
Cleveland, George		W-38	E-239
Clifford, Ruth		W-38	E-239
Cline, Tandi		W-38	E-239
Cloonan, John		W-38	E-239
Clough, Cynthia		W-38	E-239
Clough, Gloria		W-38	E-239
Clouser, Devlon		W-38	E-239
Clowes, Matt		W-38	E-239
Coakley, Michele		W-38	E-239
Cobut, Pierre-Jean		W-38	E-239
Cockrell, Tonya		W-38	E-239
Coetzee, H.		W-38	E-239
Coffin, Stephen		W-38	E-239
Cohen, Bea		W-38	E-239
Cohen, Dr. Howard		W-38	E-239
Cohen, Eleanor		W-38	E-239
Cohen, JoAnne		W-38	E-239
Cohen, Mitch		W-38	E-239
Cohen, Myrna		W-38	E-239
Cohn, Nancy		W-38	E-239
Colafranceschi, Tina		W-38	E-239
Colden, Bradley		W-38	E-239
Cole, Brian		W-38	E-239
Cole, Carole Ann		W-38	E-239
Cole, Dori		W-38	E-239
Cole, Michele		W-38	E-239
Cole, Paul		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Cole, Scott		W-38	E-239
Coleman, David		W-38	E-239
Coleman, Kelly		W-38	E-239
Coleman, Matthew		W-38	E-239
Colldar, Brenda		W-38	E-239
Collett, Shana		W-38	E-239
Collins, Kou		W-38	E-239
Colosimo, Susan		W-38	E-239
Colton, Laurie		W-38	E-239
Columbia, James		W-38	E-239
Comanich, Camilla		W-38	E-239
Combs, Barbara		W-38	E-239
Comey, Chad		W-38	E-239
Commons, Judith		W-38	E-239
Conant, Deb		W-38	E-239
Condon, Sandra		W-38	E-239
Conklin, Julia		W-38	E-239
Conley, Pamela		W-38	E-239
Conlon, Suzanne J		W-38	E-239
Conly, Leonard		W-38	E-239
Conner, Kristen		W-38	E-239
Connole, Annie		W-38	E-239
Connolly, Anna		W-38	E-239
Conrad, Lori		W-38	E-239
Conroy, Thomas		W-38	E-239
Consbruck, Barbara		W-38	E-239
Consuegra, Leslie		W-38	E-239
Contact, Marianna Mejia		W-38	E-239
Contreras, Cristian		W-38	E-239
Cook, Dr. Steven		W-38	E-239
Cook, Gordon		W-38	E-239
Cook, Liz		W-38	E-239
Cook, Orrin		W-38	E-239
Cooke, Paul		W-38	E-239
Cooluris, Helen		W-38	E-239
Cooper, Lieu		W-38	E-239
Coppola, Renee		W-38	E-239
Corah, Janet		W-38	E-239
Cordes, Paula		W-38	E-239
Corio, Joe		W-38	E-239
Corkey, Peter		W-38	E-239
Corleone, Mike		W-38	E-239
Cornett, Laura		W-38	E-239
Correa, Manuel		W-38	E-239
Corrigan, Anne		W-38	E-239
Corrigan, Sean		W-38	E-239
Corrow, Autumn		W-38	E-239
Corry, Ronit		W-38	E-239
Corvalan, M.C.		W-38	E-239
Cossettini, Lisa		W-38	E-239
Cossins, Susan		W-38	E-239
Cossutta, Renee		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Costanzo, Erica		W-38	E-239
Costello, Mar		W-38	E-239
Costello, Paige		W-38	E-239
Costello, Sharyn J		W-38	E-239
Coston, Bruce		W-38	E-239
Cote, Theresa		W-38	E-239
Coulehan, Jack		W-38	E-239
Coulson, Lynne		W-38	E-239
Coulter, Huxley		W-38	E-239
Coulter, M		W-38	E-239
Coury, Marlene		W-38	E-239
Cousins, Cathy		W-38	E-239
Coutant, Dixie		W-38	E-239
Covell, Sandi		W-38	E-239
Covey, Susan		W-38	E-239
Covington, Laurel		W-38	E-239
Cowan, Kristine		W-38	E-239
Cowin, Caryn		W-38	E-239
Cox, Amanda		W-38	E-239
Cox, Chris		W-38	E-239
Cox, Jenn		W-38	E-239
Coyle, Gregory		W-38	E-239
Coyle, Susan		W-38	E-239
Cozad, Leslie		W-38	E-239
Crabill, Shawna		W-38	E-239
Craft, Nancy		W-38	E-239
Craig, Ruth		W-38	E-239
Cramer, Mary Ann		W-38	E-239
Crane, Alyse		W-38	E-239
Crane, Mark		W-38	E-239
Craun, Laura		W-38	E-239
Crawford, David		W-38	E-239
Crawford, Kathyrn		W-38	E-239
Creager, Clary		W-38	E-239
Cripps, Phillip		W-38	E-239
Crittenton, Cynthia		W-38	E-239
Croft, Denise		W-38	E-239
Cronin, Christopher		W-38	E-239
Crooks, Deborah		W-38	E-239
Cross, Charley		W-38	E-239
Cross, Heather		W-38	E-239
Cross, Steve		W-38	E-239
Crossley, Jean		W-38	E-239
Crowley, Lawrence		W-38	E-239
Crum, Cathy		W-38	E-239
Crum, Denise		W-38	E-239
Crump, Renee		W-38	E-239
Crump, Ruth		W-38	E-239
Cruzado, Reyna		W-38	E-239
Cuellar, Bernadette		W-38	E-239
Cuff, Kermit		W-38	E-239
Cummins, Peter		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Cunningham, Alan		W-38	E-239
Cunningham, Debra		W-38	E-239
Cunningham, Grace		W-38	E-239
Cupito, Caia		W-38	E-239
Currant, Nanda		W-38	E-239
Curtis, Jennifer		W-38	E-239
Curtis, Laurence		W-38	E-239
Curtis, Michael		W-38	E-239
Custer, Arianne		W-38	E-239
Cutler, Seth		W-38	E-239
Cutt, Al		W-38	E-239
Cutts, Judy		W-38	E-239
Czelenk, Erika		W-38	E-239
D, S		W-38	E-239
Dadant, Thomas		W-38	E-239
Dadgar, Lisa		W-38	E-239
Dadgari, Joseph		W-38	E-239
Dadpagouh, Eudora		W-38	E-239
Dahlstrom, Pat		W-38	E-239
Dail, Simone		W-38	E-239
Daily, Laura		W-38	E-239
Dake, Casey		W-38	E-239
Dalal, Namita		W-38	E-239
Dallari, M. Cecilia		W-38	E-239
Dallas, Polly		W-38	E-239
Dalton, Carol		W-38	E-239
Damon, Rhea		W-38	E-239
Damon, Marine		W-38	E-239
Dana, Krista		W-38	E-239
Danard, Nancy J.		W-38	E-239
Dane, William		W-38	E-239
Danese, Barbara		W-38	E-239
Daniel, Marie		W-38	E-239
Daniels, Diana		W-38	E-239
Daniels, Pat		W-38	E-239
Daniels-Currey, ELizabeth		W-38	E-239
Dardarian, Jessica		W-38	E-239
Darke, Jon		W-38	E-239
Darling, Chris		W-38	E-239
Darrow, Aimee		W-38	E-239
Dashe, Julia		W-38	E-239
Daveiga, Michael		W-38	E-239
Davenport, Rita		W-38	E-239
Davenport, Susan		W-38	E-239
Davey, Bob		W-38	E-239
Davidson, Michelle		W-38	E-239
Davies, Charlene		W-38	E-239
Davies, Sha		W-38	E-239
Davila, Matthew		W-38	E-239
Davis, Carla		W-38	E-239
Davis, David		W-38	E-239
Davis, Jessica		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Davis, Joanne		W-38	E-239
Davis, Kimberly		W-38	E-239
Davis, Kristine		W-38	E-239
Davis, Melissa		W-38	E-239
Davis, Timothy		W-38	E-239
Dawson, James		W-38	E-239
Dawson, Julie		W-38	E-239
Day, Connie		W-38	E-239
De Blasio, Julie Clark		W-38	E-239
De Bruijn, Cornelia		W-38	E-239
De Foor, Suzanne		W-38	E-239
De Leon, Marc		W-38	E-239
de los Rios, Stephanie		W-38	E-239
De Mirjian, Carolyn		W-38	E-239
De Rooy, Sylvia		W-38	E-239
De Ruiter, Jessica		W-38	E-239
de Vlaming, Victor		W-38	E-239
Dean, Barbara		W-38	E-239
Dean, Rayline		W-38	E-239
Debasitis, Brian		W-38	E-239
DeBing, Therese		W-38	E-239
Decargouet, Yves		W-38	E-239
Decker, Mary		W-38	E-239
Dederer, Mary A.		W-38	E-239
Deen, Daysha		W-38	E-239
Deerlyjohnson, Suzanne		W-38	E-239
DeGooyer, Stacey		W-38	E-239
Deiure, Francesco		W-38	E-239
Dejuan, Mario		W-38	E-239
deKwaadsteniet, Tina		W-38	E-239
Del Mano, B		W-38	E-239
Del Valle, Javier		W-38	E-239
Delacruz, Patricia		W-38	E-239
DeLander, Kathleen		W-38	E-239
Delgado, John		W-38	E-239
Dellas, Tim		W-38	E-239
Dembowski, Susan		W-38	E-239
DeMeo, Rachele		W-38	E-239
DeMoss, Virginia		W-38	E-239
Dempsey, Melissa		W-38	E-239
Denham, Jessica		W-38	E-239
Denham, Terence		W-38	E-239
Denman, Jack and Margarita		W-38	E-239
Dennison, Brett		W-38	E-239
Dennison, Carolyn		W-38	E-239
Denton, Jill		W-38	E-239
Depew, Jeff		W-38	E-239
Deppong, Genevieve		W-38	E-239
DeRose, Sonja		W-38	E-239
DeSanchez, Tammy		W-38	E-239
DeSantis, Barbara		W-38	E-239
DeSantis, Richard		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
DeSimone, Sandra		W-38	E-239
Desin, Geneva		W-38	E-239
Desport, Olivier		W-38	E-239
Dessornes, Marguerite		W-38	E-239
Dettori, Antonio		W-38	E-239
Devine, Connie		W-38	E-239
Dewar, Susan		W-38	E-239
DeWitt, David		W-38	E-239
DeWitt, Susanne		W-38	E-239
Dhillon, Ravi		W-38	E-239
Diaz, Jim		W-38	E-239
Diaz, Michael		W-38	E-239
Diaz, Sarah		W-50	E-252
DiCarlo, Leigh Ann		W-38	E-239
Dick, Larry and MaryEllen		W-38	E-239
Dickey, Richard		W-38	E-239
Dickson, Greg		W-30	E-165
Dickson, Patricia		W-38	E-239
Diehl, Sarah J		W-38	E-239
Diermayer, Sonia		W-38	E-239
Diet, C		W-38	E-239
Differding, Amy		W-38	E-239
Diggs, Kevin		W-38	E-239
DiGiovanni, Jr., Robert		W-38	E-239
DiGiuseppi, Carol		W-38	E-239
Dillon, Sheila		W-38	E-239
diLuck, Melinie		W-38	E-239
Dimarucut, Maria		W-38	E-239
DiMatteo, Richard		W-38	E-239
Dincau, Barbara		W-38	E-239
Dingell, David		W-38	E-239
Dinsmore, James		W-38	E-239
Dirschl, Beate		W-38	E-239
Dobbins, Phyllis		W-38	E-239
Dobrzanski, MsIrene		W-38	E-239
Docherty, Rachel		W-38	E-239
Dodge, Donald		W-38	E-239
Dodson, Sherri		W-38	E-239
Doering, David		W-38	E-239
Doherty, Joanne		W-38	E-239
Doherty, Pat		W-38	E-239
Dollar, Ellen		W-38	E-239
Dollarhide, George		W-38	E-239
Dolnick, Cody		W-38	E-239
Domb, Doreen		W-38	E-239
Dominguez, Mari		W-38	E-239
Domon, Sharon		W-38	E-239
Donahue, Linda		W-38	E-239
Doneen, Ann		W-38	E-239
Donnenfield, David		W-38	E-239
Dorenstreich, Robert		W-38	E-239
Dorer, Michael		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Dorn, David		W-38	E-239
Dostaler, Margaret		W-38	E-239
Douglas, Dianne		W-38	E-239
Douglas, Graham		W-38	E-239
Doulatshahi, Paulette		W-38	E-239
Dow, Georgia		W-38	E-239
Dowdell, Kerry		W-38	E-239
Dowell, Terry		W-38	E-239
Dowler, Connie		W-38	E-239
Dowling, Christopher		W-38	E-239
Dowling, Gary		W-38	E-239
Dowling, Glenna		W-38	E-239
Dowling, Holly		W-38	E-239
Dowling, Lauri Riley		W-38	E-239
Downey, Carol		W-38	E-239
Downing, David		W-38	E-239
Downing, Larry		W-38	E-239
Downing, Steve		W-38	E-239
Dows, Wena		W-38	E-239
Doyl, Bill		W-38	E-239
Doyle, Linda		W-38	E-239
Doyle, Nikki		W-38	E-239
Draney, Jeffrey		W-38	E-239
Dravis, Mia		W-38	E-239
Dremann, Craig		W-38	E-239
Drescher, Anushka		W-38	E-239
Drew, Janet		W-38	E-239
Drizin, Craig		W-38	E-239
Drummond, Regina		W-38	E-239
Drury, Bob		W-38	E-239
du Plessis, Astrid		W-38	E-239
Dubrin, Dale		W-38	E-239
Ducey, Chris		W-38	E-239
Duckworth, Leiza		W-38	E-239
Duerr, J		W-38	E-239
Dugaw, Anne		W-38	E-239
Duggan, Steve		W-38	E-239
Dullabaun, Cheryl		W-38	E-239
Dunavant, Janis		W-38	E-239
Dunkell, Dashiell		W-38	E-239
Dunkley, Julianne		W-38	E-239
Dunn, Kelly		W-38	E-239
Dunn, Sherry		W-38	E-239
Duon, Nic		W-38	E-239
Duran, Donna		W-38	E-239
Duren, Sheri		W-38	E-239
Durkin, Carla		W-38	E-239
Durkin, Samuel		W-38	E-239
Dutton, John		W-38	E-239
Dutton, Laura		W-38	E-239
Dwyer, Roxanne		W-38	E-239
Dyakon, Douglas		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Dyer, Jym		W-38	E-239
Dykema, Cornelius A		W-38	E-239
Dysart, Tonya		W-38	E-239
Dyson, Margaux		W-38	E-239
Eade, George		W-38	E-239
Earls-Solari, Bonnie		W-38	E-239
East, Gae		W-38	E-239
Eastman, Carla		W-38	E-239
Eber, Franziska		W-38	E-239
Ebers, Tammy		W-38	E-239
Echave, Nicole		W-38	E-239
Echevarria, Carlos		W-38	E-239
Eckel, Jerry		W-38	E-239
Eckstein, Jennifer		W-38	E-239
Economou, Constantina		W-38	E-239
Eddy, Melissa		W-38	E-239
Eddy-Lee, Gladys		W-38	E-239
Edell, Elaine		W-38	E-239
Edelman, Paul		W-38	E-239
Eden, Jonathan		W-38	E-239
Edgerton, Carol		W-38	E-239
Eding, Megan		W-38	E-239
Edman, John		W-38	E-239
Edminster, Thomas		W-38	E-239
Edmondson, Rick		W-38	E-239
Edson, Kitty		W-38	E-239
Edwards, Blaire		W-38	E-239
Edwards, Estella		W-38	E-239
Edwards, Jane		W-38	E-239
Egan, Margie		W-38	E-239
Eger, Wendy		W-38	E-239
Egger, Rebecca		W-38	E-239
Ehemann, June		W-38	E-239
Eichenholtz, Michael		W-38	E-239
Eikeland, Karen		W-38	E-239
Eisemann, Cathy		W-38	E-239
Eisenbeis, Elizabeth		W-38	E-239
Eiser, J		W-38	E-239
Eisler, Laurie		W-38	E-239
Eitelman, Andrea		W-38	E-239
Elconin, Bonnie		W-38	E-239
Eldred, Craig		W-38	E-239
Eley, Patricia		W-38	E-239
Elia, Penny		W-38	E-239
Elia, Rob		W-38	E-239
Elijah, Anaundda		W-38	E-239
Elisalda, Victor		W-38	E-239
Ellebracht, Kellie		W-38	E-239
Ellington, Barbara		W-38	E-239
Elliott, Denis		W-38	E-239
Elliott, Tracy		W-38	E-239
Ellis, Julie		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Ellis, Koll		W-38	E-239
Ellis, Norm		W-38	E-239
Ellis, Sharon		W-38	E-239
Elowyn, Rebekah		W-38	E-239
Embree, Michelle		W-38	E-239
Embry, Judith		W-38	E-239
Emerson, Arne		W-38	E-239
Emerson, Linda		W-38	E-239
Emery, Maryann		W-38	E-239
Emme, Linda		W-38	E-239
Emmetti, Maria		W-38	E-239
Emsley, Scott		W-38	E-239
Enderson, Danielle		W-38	E-239
Enevoldsen, David		W-38	E-239
England, Bruce		W-38	E-239
Engledow, Helen		W-38	E-239
Engstrom, Mary		W-38	E-239
Ennouri, Elena		W-38	E-239
Ennouri, Elena		W-38	E-239
Enns, Gail		W-38	E-239
Erario, Myra		W-38	E-239
Erdakos, Garnet		W-38	E-239
Erhorn, Walter		W-38	E-239
Erickson, Elaine		W-38	E-239
Escajeda, Mark		W-38	E-239
Esposito, Dan		W-38	E-239
Esser, Nicholas		W-38	E-239
Essex, Michael		W-38	E-239
Estonactoc, George		W-38	E-239
Estrada, Jillian	Desert Tortoise Preserve Committee, Inc.	W-34	E-226
Etter, Stephen		W-38	E-239
Eurs, Albert		W-38	E-239
Evans, Ellen		W-38	E-239
Evans, Jo		W-38	E-239
Evans, Joann		W-38	E-239
Evans, Kersti		W-38	E-239
Evans, Staci		W-38	E-239
Evanston, Luci		W-38	E-239
Everett, John		W-38	E-239
Everett, Karla		W-38	E-239
Everett, Miranda		W-38	E-239
Evilsizer, Dale		W-38	E-239
Evoniuk, Nanc		W-38	E-239
Ewert, Kai		W-38	E-239
Exner, Natasha		W-38	E-239
F., Andrea		W-38	E-239
Fab, Donna		W-38	E-239
Faber, John		W-38	E-239
Fabra, Rita		W-38	E-239
Fachko, D.		W-38	E-239
Fairbrother, Pat		W-38	E-239
Faith-Smith, Bonnie		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Falba, Claudio		W-38	E-239
Falgren, Marion		W-38	E-239
Fallandy, Yvette		W-38	E-239
Fallender, Deborah		W-38	E-239
Falvey, Tom		W-38	E-239
Falzone, Dominick		W-38	E-239
Fargnoli, Sam		W-38	E-239
Farhar, John		W-38	E-239
Farr, Gina		W-38	E-239
Farrell, Alexander		W-38	E-239
Farry-Menke, Janice E.		W-38	E-239
Fattahipour, Darius		W-38	E-239
Favarote, Regina		W-38	E-239
Favorito, Maria		W-38	E-239
Fawke, Jane		W-38	E-239
Fecteau, Lisa		W-38	E-239
Fedon, Christine		W-38	E-239
Feeney, John		W-38	E-239
Feierabend, Marla		W-38	E-239
Feissel, John		W-38	E-239
Feldmann, Heike		W-38	E-239
Felix, Ashley		W-38	E-239
Fellay, Helga		W-38	E-239
Fellner, Robin		W-38	E-239
Fellows, Martha		W-38	E-239
Felsovanyi, Andrea		W-38	E-239
Felt, Amanda		W-38	E-239
Fergus, Jeri		W-38	E-239
Ferguson, Cindy		W-38	E-239
Ferguson, Virginia		W-38	E-239
Fernandez, Jessica		W-38	E-239
Fernelius, Joi		W-38	E-239
Ferrante, John		W-38	E-239
Ferreira, Linda		W-38	E-239
Ferrell, Molly		W-38	E-239
Ferrito, Thomas		W-38	E-239
Ferro, Andre		W-38	E-239
Ferry, Stephen		W-38	E-239
Fertig, Asano		W-38	E-239
Fetterman, Kevin		W-38	E-239
Fiandaca, Anastasia		W-38	E-239
Fielden, Jessica		W-38	E-239
Fielder, Aixa		W-38	E-239
Fielding Heidi		W-38	E-239
Filakosky, Denise		W-38	E-239
Filipelli, Ph.D., Deborah		W-38	E-239
Fimbres, Christine		W-38	E-239
Findeis, Jeffrey		W-38	E-239
Findley, Genevieve		W-38	E-239
Fink, Patti		W-38	E-239
Finn, Jim		W-38	E-239
Fischer, Deborah		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Fischer, Donald		W-38	E-239
Fischer, Stephen R		W-38	E-239
Fisher, Dave		W-38	E-239
Fisher, Irene		W-35	E-228
Fisher, Juels M		W-38	E-239
Fisher, Melanie		W-38	E-239
Fishman, Ted		W-38	E-239
Fisk, Todd		W-38	E-239
Fitch, Shelley		W-38	E-239
Fite, Austin		W-38	E-239
Fite, Gregory		W-38	E-239
Fitzgerald, Glennis		W-38	E-239
Fitzgerald, Munjuri		W-38	E-239
Flanagan, Pat		W-38	E-239
Flannery, Marcia		W-38	E-239
Flather, Dylan		W-38	E-239
Flatto, Janice		W-38	E-239
Flebotte, Katharine		W-38	E-239
Flechsig, Lu Ann		W-38	E-239
Fleming, Lis L		W-38	E-239
Fletcher, Rick		W-38	E-239
Fletcher, Tania		W-38	E-239
Flores, Alberto		W-38	E-239
Flores, Evelyn		W-38	E-239
Flores, Ileana		W-38	E-239
Flores, Reanna		W-38	E-239
Flores, Steven		W-38	E-239
Florian, Brian		W-38	E-239
Floyd, Kim		W-38	E-239
Flynn, Charles		W-38	E-239
Flynn, Shannon		W-38	E-239
Fogan, Sara		W-38	E-239
Fogarty, Dan and Paula		W-38	E-239
Foley, Gilda		W-38	E-239
Foley, Mary		W-38	E-239
Foley, Susan		W-38	E-239
Fomenko, Nancy		W-38	E-239
Foo, Ida		W-38	E-239
Foot, Mr. & Mrs. Jimmy & Susie		W-38	E-239
Forbes, Mary		W-38	E-239
Ford, David		W-38	E-239
Ford, Michael C. and Richard B. Marks		W-38	E-239
Ford, Nary		W-38	E-239
Ford, Sharon		W-43	E-245
Forde, Eve		W-38	E-239
Forester, Teri		W-38	E-239
Foret, Erin		W-38	E-239
Fornaciari, Dr. William		W-38	E-239
Fortunato, Nicole		W-38	E-239
Foss, Matthew		W-38	E-239
Foster, Alyce		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Foster, Genette		W-38	E-239
Foster, Laura		W-38	E-239
Foster, Nicola		W-38	E-239
Foti, Bernadette		W-38	E-239
Foulger, David		W-38	E-239
Fountain, Dawn		W-38	E-239
Fountain, Nicole		W-38	E-239
Fowler, Elizabeth		W-38	E-239
Fox, Angela		W-38	E-239
Framiglio, Lisa		W-38	E-239
France, Jeremy		W-38	E-239
Frances, Barbara		W-38	E-239
Franco, Julia		W-31	E-166
Francovich, Lynne		W-38	E-239
Frank, Randall		W-38	E-239
Frank, RJ		W-38	E-239
Frank, Steven		W-38	E-239
Frankenfield, Pat		W-38	E-239
Franklin, Constance		W-38	E-239
Frantal, Robbie		W-38	E-239
Frantz-Crafton, Candy		W-38	E-239
Franz, Amy		W-38	E-239
Franzen, Ellen		W-38	E-239
Frauman, Judy		W-38	E-239
Frausto, Myriam		W-38	E-239
Frazee, Cary		W-38	E-239
Frazer, Barbara		W-38	E-239
Frech, Luise		W-38	E-239
Frederick, Roberta		W-38	E-239
Freedland, Nancy		W-38	E-239
Freedom, Rea		W-38	E-239
Freeland, Clint M		W-38	E-239
Freeman, Laura		W-38	E-239
Freeman, Myrna		W-38	E-239
Freeman-Steele, Marta Lynn		W-38	E-239
French, Calvin		W-38	E-239
Frewin, Terry		W-38	E-239
Frey, Andrew		W-38	E-239
Frey, Michael		W-38	E-239
Frick, Dean		W-38	E-239
Friedberg, Lionel		W-38	E-239
Friedenberg, Sarah		W-38	E-239
Friedman, Leslie		W-38	E-239
Friedman, Martin B		W-38	E-239
Fritzinger, Dennis		W-38	E-239
Frolova, Inga		W-38	E-239
Fromberg, Jeff		W-38	E-239
Frost, Amanda		W-38	E-239
Frugoli, Tina		W-38	E-239
Frye, Joyce		W-38	E-239
Fuhrer, John		W-38	E-239
Fuhrman, Jed		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Fukuda, Kristina		W-38	E-239
Fukuhara, Shirley		W-38	E-239
Fukunaga, Judy		W-38	E-239
Fuller, Marilyn		W-38	E-239
Fulton, Terri		W-38	E-239
Furniss, Cheryl		W-38	E-239
Furst, Robert		W-38	E-239
Fusilier, Gilda		W-38	E-239
Futrell, Sherrill		W-38	E-239
Futterer, Joe		W-38	E-239
G, B		W-38	E-239
G, D		W-38	E-239
G, Heather		W-38	E-239
G, M		W-38	E-239
Gabriel, Michael		W-38	E-239
Gale, Barbara		W-38	E-239
Gale, Mike		W-38	E-239
Gale, Nikita		W-38	E-239
Gallagher, Maureen		W-38	E-239
Gallant, Kathleen		W-38	E-239
Gallegos, Geoffrey		W-38	E-239
Gallegos, Julie		W-38	E-239
Gallegos, Mark		W-38	E-239
Gallo, Emilia		W-38	E-239
Gallou, Priscilla		W-38	E-239
Galloway, Dena		W-38	E-239
Galt, Jan		W-38	E-239
Galvez, Ruben		W-38	E-239
Gama, Juanita		W-38	E-239
Gambardella, Stella		W-38	E-239
Gambrill, Eileen		W-38	E-239
Gannon, James		W-38	E-239
Gaponoff, Sharma		W-38	E-239
Garber, Sandra		W-38	E-239
Garceau, Marcia		W-38	E-239
Garcia, Armando A.		W-38	E-239
Garcia, Diana		W-38	E-239
Garcia, Dominic		W-38	E-239
Garcia, Erin		W-38	E-239
Garcia, Evette		W-38	E-239
Garcia, Isabel		W-38	E-239
Garcia, Jeffery		W-38	E-239
Garcia, Kelly		W-38	E-239
Garcia, Maryellen		W-38	E-239
Garcia, Patty		W-38	E-239
Garcia, Reyna		W-38	E-239
Garcia, Sara		W-38	E-239
Garcia, Yazel		W-38	E-239
Garcia-Barrio, Constance		W-38	E-239
Gardener, Gardenia		W-38	E-239
Gardiner, Lauren		W-38	E-239
Gardner, Angela		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Gardner, Janet		W-38	E-239
Garitty, Michael		W-38	E-239
Garland, Gretchen		W-38	E-239
Garland, Kathleen		W-38	E-239
Garrecht, Jamila		W-38	E-239
Garrison, Barbara		W-38	E-239
Gates, Linda		W-38	E-239
Gathman, Carole		W-38	E-239
Gatto, Dana		W-38	E-239
Gebauer, Eric		W-38	E-239
Gee, Lisa		W-38	E-239
Geffy, Eri		W-38	E-239
Gegner, Robin		W-38	E-239
Geiger, Andes		W-38	E-239
Geluz, Gemma		W-38	E-239
Genasci, Elaine		W-38	E-239
George, Gina		W-38	E-239
George, Laurence		W-38	E-239
Georgini, Nancy		W-38	E-239
Geraci-Benson, Arlene		W-38	E-239
Gerding, Jennifer		W-38	E-239
Gerratana, Carol		W-38	E-239
Getchell, Lynette		W-38	E-239
Getter, Camile		W-38	E-239
Geyer, Rob		W-38	E-239
Gherardi, Lisa		W-38	E-239
Gibb, Wayne		W-38	E-239
Gibson, Christina		W-38	E-239
Gibson, Kyle		W-38	E-239
Gibson, Lisa		W-38	E-239
Gibson, Teri		W-38	E-239
Giegerich, Jill		W-38	E-239
Giese-Zimmer, Astrid		W-38	E-239
Giger, Lesley		W-38	E-239
Giguere, Ed		W-38	E-239
Gil, Savannah		W-38	E-239
Gilbert, Camille		W-38	E-239
Gilbert, Diana		W-38	E-239
Gilbert, Joseph		W-38	E-239
Gilbert, Liz		W-38	E-239
Gilbert, Pat		W-38	E-239
Gilbert, Tracy		W-38	E-239
Gildea, Jessica		W-38	E-239
Gililland, Rich		W-38	E-239
Gill, A		W-38	E-239
Gill, Amber		W-38	E-239
Gill, Lauren		W-38	E-239
Gillespie, Thomas		W-38	E-239
Gillette, Cheryl		W-38	E-239
Gilliland, Ken		W-38	E-239
Gilmore, Linda		W-38	E-239
Gilmore, Timothy		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Girard, Janet		W-38	E-239
Girard, Susan		W-38	E-239
Giron, Ingrid		W-38	E-239
Gjerset, Peter		W-38	E-239
Gladfelter, Barbara		W-38	E-239
Glanz, Zach		W-38	E-239
Glaser, Philip		W-38	E-239
Glassman, Sea		W-38	E-239
Glaston, Joe		W-38	E-239
Glatt, Stephanie		W-38	E-239
Glave, Sharon		W-38	E-239
Glazar, MaryAnne		W-38	E-239
Glenn, Julie		W-38	E-239
Gloe, Janice		W-38	E-239
Gobby, Krista		W-38	E-239
Goddard, M		W-38	E-239
Godwin, Su		W-38	E-239
Goetz, Linda		W-38	E-239
Goetzl, Randall		W-38	E-239
Goff, Frances		W-38	E-239
Goguen, Darlene		W-38	E-239
Gold, Ruth		W-38	E-239
Goldberg, Cathy		W-38	E-239
Goldberg, Dan		W-38	E-239
Goldberg, Paula		W-38	E-239
Goldberg, Susan		W-38	E-239
Goldberg, Valerie		W-38	E-239
Golden, Gene		W-38	E-239
Goldfarb, G		W-38	E-239
Golding, John		W-38	E-239
Goldman, Ellen		W-38	E-239
Goldman, Lauren		W-38	E-239
Goldman, Ron		W-38	E-239
Goldstein, Susan		W-38	E-239
Gollop, Wendy		W-38	E-239
Golub, Shirley		W-38	E-239
Gomez, Armando		W-38	E-239
Gomez, Christina		W-38	E-239
Gonzales, Antoinette		W-38	E-239
Gonzales, Tara		W-38	E-239
Gonzalez, Autumn		W-38	E-239
Gonzalez, Cecilia		W-38	E-239
Gonzalez, Dalia		W-38	E-239
Gonzalez, Gerardo Lobo		W-38	E-239
Gonzalez, Sonia		W-38	E-239
Gonzalez, Yazmin		W-38	E-239
Gooch, Mark		W-38	E-239
Goodale, Margaret L		W-38	E-239
Gooding, Luna		W-38	E-239
Goodney, Elaine		W-38	E-239
Goodreau, Christine		W-38	E-239
Goodrich, Cathy		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Goodrich, Sue		W-38	E-239
Goolsby, Sp		W-38	E-239
Goor, Jared		W-38	E-239
Gordon, Michael		W-38	E-239
Gorman, Elaine		W-38	E-239
Gorman, Mary		W-38	E-239
Gorse, Elizabeth		W-38	E-239
Gotch, Dan		W-38	E-239
Gottesman, Elaine		W-38	E-239
Gottesman, Judith		W-38	E-239
Gould, Shawn		W-38	E-239
Gourley, Thomas		W-38	E-239
Govreau, Kathy		W-38	E-239
Grabowsky, Katarina		W-38	E-239
Grace, George		W-38	E-239
Graf, Bettina A		W-38	E-239
Graff, Steve		W-38	E-239
Graham, Dolores		W-38	E-239
Graham, Guy		W-38	E-239
Graham-Gardner, Rosemary		W-38	E-239
Grainger, Elizabeth		W-38	E-239
Gramckow, Kimberly		W-38	E-239
Grampp, Donna		W-38	E-239
Grandon, Blythe		W-38	E-239
Graniello, Domenico		W-38	E-239
Graniello, Luciano		W-38	E-239
Granlund, Fred		W-38	E-239
Grant, Carmen		W-38	E-239
Grantz, Dan		W-38	E-239
Graves, Caryn		W-38	E-239
Graves, Douglas E		W-38	E-239
Gray, Brian		W-38	E-239
Gray, Lisa		W-38	E-239
Gray, Sylvia Ruth		W-38	E-239
Grech, Darlene		W-38	E-239
Green, Jamie		W-38	E-239
Green, Michael		W-38	E-239
Green, Pat		W-38	E-239
Green, Sally		W-38	E-239
Greenberg, Corinne		W-38	E-239
Greenberg, Jason		W-38	E-239
Greene, Linda		W-38	E-239
Greenwald, Evelyn		W-38	E-239
Grefe, Belisa		W-38	E-239
Gregerson, Gary		W-38	E-239
Gregg, K R		W-38	E-239
Gregorian, Arthur		W-38	E-239
Gregory, Anne		W-38	E-239
Gregory, Kris		W-38	E-239
Grey, Eva		W-38	E-239
Grezaffi, Judith		W-38	E-239
Griffen, Jay		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Griffen, Sharon		W-38	E-239
Griffin, Erica		W-38	E-239
Griffin, Mary		W-38	E-239
Griffith, Nancy R		W-38	E-239
Grigg, Melody		W-38	E-239
Grimson, Martha		W-38	E-239
Grobler, Mariette		W-38	E-239
Grobman, Bruce		W-38	E-239
Grønbæk, Mona		W-38	E-239
Gronvold, Ann		W-38	E-239
Groode, David		W-38	E-239
Groody, Lance K		W-38	E-239
Groome, Malcolm		W-38	E-239
Groot, Henriette		W-38	E-239
Grosh, William		W-38	E-239
Gross, Eileen		W-38	E-239
Gross, Kurt		W-38	E-239
Groux, Kathleen		W-38	E-239
Grovenburg, Cathy		W-38	E-239
Groves, John		W-38	E-239
Grunberger, Dorit		W-38	E-239
Grush, Melissa		W-38	E-239
Gryska, Anita		W-38	E-239
Gualandi, Donatella		W-38	E-239
Guardian, Tracey		W-38	E-239
Guchi, Tanya		W-38	E-239
Guess, Malynda		W-38	E-239
Guevara, Pat		W-38	E-239
Guidotti, Rick		W-38	E-239
Guilaroff, Jon		W-38	E-239
Guimarin, Elizabeth		W-38	E-239
Gullam, Paul G		W-38	E-239
Gulseth, Geralyn		W-38	E-239
Gurdin, J. Barry		W-38	E-239
Gustin, Amy		W-38	E-239
Guthrie, Bill		W-38	E-239
Gutierrez, Emmylou		W-38	E-239
Gutierrez, Oscar		W-38	E-239
Gutmann, Todd		W-38	E-239
Guy, Earl		W-38	E-239
Guzzo, GIna		W-38	E-239
Gx, Perry		W-38	E-239
H, G		W-38	E-239
H, M		W-38	E-239
Haage, l		W-38	E-239
Haas, Eric		W-38	E-239
Hackett, Marcia C		W-38	E-239
Haddad, Nadia		W-38	E-239
Haddad, Reem		W-38	E-239
Haden, Ellen		W-38	E-239
Haeberle, Fran		W-38	E-239
Haerr, Trish		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Hagan, Evelyn		W-38	E-239
Hagelin, Christine		W-38	E-239
Hagerty, David		W-38	E-239
Hagerty, MC		W-38	E-239
Hagewood, Beth		W-38	E-239
Haggard, Alan		W-38	E-239
Hahn, Robert		W-38	E-239
Haig, Brenda		W-38	E-239
Halbert, Jim		W-38	E-239
Halizak, Kim		W-38	E-239
Hall, Caroline		W-38	E-239
Hall, Diana F		W-38	E-239
Hall, Gayle		W-38	E-239
Hall, Holly		W-38	E-239
Hall, Karen		W-38	E-239
Hall, Laurie		W-38	E-239
Hall, Steve		W-38	E-239
Hall, Stuart		W-38	E-239
Hall, Sue		W-38	E-239
Haller, Maryann		W-38	E-239
Halley, Cathy		W-38	E-239
Halley, David		W-38	E-239
Halligan, David		W-38	E-239
Halligan, Michele		W-38	E-239
Hallmark, Jena		W-38	E-239
Halloran, Felicia		W-38	E-239
Hamilton, Andrew		W-38	E-239
Hamilton, Ellen		W-38	E-239
Hamilton, Frederick		W-38	E-239
Hamilton, James		W-38	E-239
Hamilton, Pamela		W-38	E-239
Hammer, F		W-38	E-239
Hammermeister, Lisa		W-38	E-239
Hammond, David		W-38	E-239
Hampton, Greg		W-38	E-239
Handloff, Diane		W-38	E-239
Handy, Sherry		W-38	E-239
Hanisee, Mark		W-38	E-239
Hankey, Steph		W-38	E-239
Hanlon, Steve		W-38	E-239
Hanniman, Kimberly		W-38	E-239
Hansell, Judith D.		W-38	E-239
Hansen, Jill		W-38	E-239
Hanson, Caren		W-38	E-239
Hanson, Cynthia		W-38	E-239
Hanson, Jody		W-38	E-239
Hanson, Kathy		W-38	E-239
Hanson, Nancy J		W-38	E-239
Hanzlik, Carla		W-38	E-239
Harada, Jane		W-38	E-239
Harami, Molly		W-38	E-239
Harbeson, Charlotte		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Harby, Susan		W-38	E-239
Hardin, Joseph		W-38	E-239
Harding, Rob		W-38	E-239
Hardy, Kay		W-38	E-239
Hardy, Shianna		W-38	E-239
Hargett, Lynne		W-38	E-239
Hargraves, Mark		W-38	E-239
Harker, Jana		W-38	E-239
Harkins, Joanne		W-38	E-239
Harkins, Lynne		W-38	E-239
Harnish, Kim		W-38	E-239
Harp, Patricia		W-38	E-239
Harpe, Barbara		W-38	E-239
Harper, Barbara		W-38	E-239
Harper, Charesa		W-38	E-239
Harr, Silva		W-38	E-239
Harrel, Mary Ann		W-38	E-239
Harrell, Bryan		W-38	E-239
Harrell, Roger H.		W-38	E-239
Harrington, Beverly		W-38	E-239
Harris, Beverly		W-38	E-239
Harris, David		W-38	E-239
Harris, Jennifer		W-38	E-239
Harris, John		W-38	E-239
Harris, John		W-38	E-239
Harris, Judi		W-38	E-239
Harris, Shirley		W-38	E-239
Harris, William		W-38	E-239
Harris, Zoe		W-38	E-239
Harrison, Jennifer		W-38	E-239
Harrison, Lynda		W-38	E-239
Hart, Johanna		W-38	E-239
Hartje, David		W-38	E-239
Hartley, Michael		W-38	E-239
Hartwell, Alice L.		W-38	E-239
Harvey, Anne		W-38	E-239
Harvey, Sarah		W-38	E-239
Harvey, Shea		W-38	E-239
Harwood, Mark		W-38	E-239
Harwood, Peter		W-38	E-239
Haseltine, Rebecca		W-38	E-239
Hashemi-Briskin, Jordan		W-38	E-239
Haskett, Nancy		W-38	E-239
Haskins, Patrick		W-38	E-239
Hass, Eva		W-62	E-264
Hatch, Laurie L		W-38	E-239
Hatch, Lindalee		W-38	E-239
Hauswald, Christina		W-38	E-239
Havassy, Nancy		W-38	E-239
Hawken, Jacob		W-38	E-239
Hawkins, Paula		W-38	E-239
Hawkins, Shereen		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Hawley, Stephenie		W-38	E-239
Hawthorne, Christina		W-38	E-239
Hawthorne, Jayne		W-38	E-239
Hayano, Suzanne		W-38	E-239
Hayes, Jennifer		W-38	E-239
Hayes, Rhonda		W-38	E-239
Hayes, Tim		W-38	E-239
Hayse, Shelley		W-38	E-239
Head, Kathleen		W-38	E-239
Head, Kris		W-38	E-239
Head, Margret		W-38	E-239
Head, Robert		W-38	E-239
Heady, Paula		W-38	E-239
Heald, Melody		W-38	E-239
Heath, Frances		W-38	E-239
Heath, Paulette		W-38	E-239
Heck, Nancy		W-38	E-239
Heckmann, Ross		W-38	E-239
Hedges, Ken		W-38	E-239
Hedley, Shawna		W-38	E-239
Heermance, Richard		W-38	E-239
Heidt, Lin		W-38	E-239
Heigher, Demetra		W-38	E-239
Heiman, Naomi		W-38	E-239
Hein, Christine		W-38	E-239
Heinly, Bridgett L		W-38	E-239
Heintz, Michael		W-38	E-239
Heintz, Penny		W-38	E-239
Heist, Roberta		W-38	E-239
Hekhuis, Stephen		W-38	E-239
Helgesen, Barbara		W-38	E-239
Hellmuth, Cynthia		W-38	E-239
Hemenez, Jeffrey		W-38	E-239
Hemingway, Dr. Carol I.		W-38	E-239
Hempel, Blake		W-38	E-239
Henderson, J. Michael Mike		W-38	E-239
Henderson, Jo Ann		W-38	E-239
Henderson, Kelly		W-38	E-239
Henderson, Lynette		W-38	E-239
Henderson, Michael		W-38	E-239
Henderson, Scott		W-38	E-239
Hendrix, Alice		W-38	E-239
Hendry, Dawn		W-38	E-239
Henke, Margaret		W-38	E-239
Henkes, Anne-Marie		W-38	E-239
Henriksen, Melissa		W-38	E-239
Henry, Lisa		W-38	E-239
Hentz, Catalina-Maria		W-38	E-239
Hepburn, Robert		W-38	E-239
Hepner, Jean		W-38	E-239
Heptinstall, Ian		W-38	E-239
Herbst, Teri		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Hernandez, Crystal		W-38	E-239
Hernandez, Elena		W-38	E-239
Hernandez, Erin		W-38	E-239
Hernandez, Horalia		W-38	E-239
Herndon, Laura		W-38	E-239
Heron, Joan		W-38	E-239
Herrmann, Virginia		W-38	E-239
Hettel, Linda		W-38	E-239
Hewett, John		W-38	E-239
Hewitt, Carol		W-38	E-239
Hewitt, Judy		W-38	E-239
Hewitt, Maev		W-38	E-239
Hewitt, Roger		W-38	E-239
Heyman, Janet		W-38	E-239
Heynen, Robert		W-38	E-239
Hiatt, Catherine		W-38	E-239
Hicklin, Mary		W-38	E-239
Hicks, Janet		W-38	E-239
Hicks-Severn, Percy		W-38	E-239
Hieber, Richard		W-38	E-239
Hiersch, Richard		W-38	E-239
Hiestand, Carol		W-38	E-239
Hiestand, Nancy		W-38	E-239
Higgins, Bruce		W-38	E-239
Higgins, DH		W-38	E-239
Higgins, Susi		W-38	E-239
High, Carin		W-38	E-239
Higson, Howard		W-38	E-239
Hileman, Jacki		W-38	E-239
Hill, Eloise		W-38	E-239
HIll, Gregory		W-38	E-239
Hill, Kai		W-38	E-239
Hillhouse, Jane		W-38	E-239
Hillo, Scottie		W-38	E-239
Hilpertshauser, Michele		W-38	E-239
Hinckley, Brenda		W-38	E-239
Hines, Lanier		W-38	E-239
Hines, Stephanie		W-38	E-239
Hinsberger, Wendy		W-38	E-239
Hinton, Eugene		W-38	E-239
Hipol, Jay-R		W-38	E-239
Hipps, Ralph		W-38	E-239
Hirshik, Eric		W-38	E-239
Hirt, Kathryn		W-38	E-239
Hirtle, Elaine		W-38	E-239
Hiss, Eric		W-38	E-239
Hitt, Teri		W-38	E-239
Hoban, Kathleen		W-38	E-239
Hochendoner, Bernard		W-38	E-239
Hockley, Jim		W-38	E-239
Hockridge, Jim		W-38	E-239
Hoffert, Florence		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Hoffman, Diane		W-38	E-239
Hoffman, Jeff		W-38	E-239
Hoffman, Philip		W-38	E-239
Hogan, Candace		W-38	E-239
Hogan, Martha		W-38	E-239
Hohnbaum, Diane		W-38	E-239
Hohnroth, Allen		W-38	E-239
Holabird, Rhoda		W-38	E-239
Holbrook, Penelope		W-38	E-239
Holcomb, Deborah		W-38	E-239
Holder, Sarah		W-38	E-239
Holdren, Joann		W-38	E-239
Hollahan, Gloria		W-38	E-239
Holland, Deborah		W-38	E-239
Hollander, Roger		W-38	E-239
Hollie, Paula		W-38	E-239
Hollis, Sharon		W-38	E-239
Hollis-Franklyn, C.C.		W-38	E-239
Holloway, Genevieve		W-38	E-239
Holmes, Juliet		W-38	E-239
Holmes, Tara		W-38	E-239
Holstein, Glen		W-38	E-239
Holt, Jane		W-38	E-239
Holt, Nancy		W-38	E-239
Holtzclaw, John		W-38	E-239
Holtzman, Lawrence		W-38	E-239
Holz, Dennis		W-38	E-239
Holzer, Rebecca		W-38	E-239
Hood, Christine		W-38	E-239
Hoop, Anne		W-38	E-239
Hooson, Clare		W-38	E-239
Hoover, Michael		W-38	E-239
Hoover, Todd		W-38	E-239
Hopwood, Timothy		W-38	E-239
Horais, Kjersti		W-38	E-239
Hornbeck, Lawrence		W-38	E-239
Horwath, Patricia		W-38	E-239
Horwitz, Martin		W-38	E-239
Hottle, Barry		W-38	E-239
Houmes, Cleda		W-38	E-239
House, Michael		W-38	E-239
Hovorka, Ah		W-38	E-239
Howard, Erin		W-38	E-239
Howard, Sarah		W-38	E-239
Howe, James		W-38	E-239
Huang, Karissa		W-38	E-239
Hubbard, David P.	Gatzke Dillon & Balance LLP	W-36	E-229
Hubbs, Gail		W-38	E-239
Hubbs-Chang, Nancy		W-38	E-239
Huber, Anne		W-38	E-239
Hudgins, Jerry		W-38	E-239
Huerta, Ernest		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Hug, Janis		W-38	E-239
Hughes, Cheryl		W-38	E-239
Hughes, Rich		W-38	E-239
Hughes, Vicki		W-38	E-239
Hulsey, Tamara		W-38	E-239
Hummel, Erica		W-38	E-239
Humphries, Jane		W-38	E-239
Humrich, Aidan		W-38	E-239
Hunrichs, Paul		W-38	E-239
Hunt, William		W-61	E-263
Hunter, Anastasia		W-38	E-239
Hunter, D.M.		W-38	E-239
Hunter, Jacki		W-38	E-239
Hurlbert, Stuart		W-38	E-239
Hurst, Mark		W-38	E-239
Hurwitz, Jeffrey		W-38	E-239
Husbands, Robert		W-38	E-239
Husbands, Tess		W-38	E-239
Hutchinson, Stephen		W-38	E-239
Hutchinson, Susan		W-38	E-239
Huth, Graciela		W-38	E-239
Huyett, Rick		W-38	E-239
Hyde, Alice		W-38	E-239
Hyndman, Caeol		W-38	E-239
Ibanez, Jazzmyn		W-38	E-239
Ignatius, Elisa Jane		W-38	E-239
Inatsugu, Barbara		W-38	E-239
Insprucker, Lou		W-38	E-239
Irby, Drew		W-38	E-239
Ireland, Lynn		W-38	E-239
Irons, Bridget		W-38	E-239
Irons, Tamey		W-38	E-239
Irvine, Lynne		W-38	E-239
Irving, Suzanne		W-38	E-239
Irwn, Yvette		W-38	E-239
Isbell, Donald		W-38	E-239
Iseri, Martin		W-38	E-239
Ishii-Price, Rika		W-38	E-239
Isolani, Tasha		W-38	E-239
Israel, Deborah		W-38	E-239
Ivaldi, Miriam		W-38	E-239
Iverson, Dehra		W-38	E-239
J,Cc		W-38	E-239
J, Jennifer		W-38	E-239
Ja, Tia		W-38	E-239
Jacinto, Paloma		W-38	E-239
Jackson, Christina		W-38	E-239
Jackson, Corey		W-38	E-239
Jackson, Denise		W-38	E-239
Jackson, George		W-38	E-239
Jackson, Harold		W-38	E-239
Jackson, Judy		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Jackson, Nicole		W-38	E-239
Jacob, Ron		W-38	E-239
Jacobs, JoAnne		W-38	E-239
Jacobs, Linda		W-38	E-239
Jacobson, Lisa		W-38	E-239
Jacobson, Stina		W-38	E-239
Jaimez, Andrew		W-38	E-239
Jain, Katherine DaSilva		W-38	E-239
Jain, Paula		W-38	E-239
Jajko, Barbara		W-38	E-239
Jallo, David		W-38	E-239
James, Brigitte		W-38	E-239
James, Damian		W-38	E-239
Jamtaas, Philip		W-38	E-239
Jannarone, Kimberly		W-38	E-239
Janosky, Caroline		W-38	E-239
Jaquez, Brenda		W-38	E-239
Jardine, John		W-38	E-239
Jarrell, Karen		W-38	E-239
Jasiorkowski, C.K.		W-38	E-239
Jasiukiewicz, Anna		W-38	E-239
Jasper, Marilyn		W-38	E-239
Jasper, Robert		W-38	E-239
Jegou, Julien		W-38	E-239
Jenkins, K.		W-38	E-239
Jensen, Donna		W-38	E-239
Jensen, Jacqueline		W-38	E-239
Jensen, Lawrence		W-38	E-239
Jensen, Melanie		W-38	E-239
Jepson, Jane		W-38	E-239
Jerlstrom, Jennifer		W-38	E-239
Jessler, Darynne		W-38	E-239
Jewell, Leigh		W-38	E-239
Jimenez, Lawrence		W-38	E-239
Jimenez, Paula		W-38	E-239
Jin, Audrey		W-38	E-239
Jitreun, S		W-38	E-239
Jivan, M.		W-38	E-239
Johnson, Ashlee		W-38	E-239
Johnson, Beverly		W-38	E-239
Johnson, Caren		W-38	E-239
Johnson, Chad		W-38	E-239
Johnson, Christine		W-38	E-239
Johnson, Diana		W-38	E-239
Johnson, Gregg		W-38	E-239
Johnson, Katherien		W-38	E-239
Johnson, Kathleen		W-38	E-239
Johnson, Kristin		W-38	E-239
Johnson, Linda		W-38	E-239
Johnson, Pamela		W-38	E-239
Johnson, Reid		W-38	E-239
Johnson, Rolf		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Johnson, Sage		W-38	E-239
Johnson, Sharon		W-38	E-239
Johnson, Shawn		W-38	E-239
Johnstone, Bonnie		W-38	E-239
Johnstone, Ryan		W-38	E-239
Jolley, Julianne		W-38	E-239
Joly, Frederique		W-38	E-239
Jones, Angie		W-38	E-239
Jones, Avianna		W-38	E-239
Jones, Debbie		W-38	E-239
Jones, Devon		W-38	E-239
Jones, Edmund		W-38	E-239
Jones, Jan		W-38	E-239
Jones, Jeffrey		W-38	E-239
Jones, Juli		W-38	E-239
Jones, Kathy		W-38	E-239
Jones, Keith		W-38	E-239
Jones, Linda		W-38	E-239
Jones, Linda		W-38	E-239
Jones, May		W-38	E-239
Jones, Michiele		W-38	E-239
Jones, Rev. Allan B.		W-38	E-239
Jones, S		W-38	E-239
Jones, Sam		W-38	E-239
Jones, Susan		W-38	E-239
Jones, Ted		W-38	E-239
Jones, V and B		W-38	E-239
Jones-Bunn, Shawn		W-38	E-239
Jonsdottir, Sirry		W-38	E-239
Jordan, John		W-38	E-239
Jordan, Martha		W-38	E-239
Jordan, Yashoda		W-38	E-239
Joseph, Carole		W-38	E-239
Joseph, Cathleen		W-38	E-239
Joslin, Marina		W-38	E-239
Joye, Martin		W-38	E-239
Juarez, Sharon		W-38	E-239
Judd, Barbara		W-38	E-239
Jue, Erik		W-38	E-239
Kadambi, Vinay		W-38	E-239
Kaden, Mary Margaret		W-38	E-239
Kadium, Valerie		W-38	E-239
Kahn, Mariza		W-38	E-239
Kahn, Patricia		W-38	E-239
Kaiser, Kathleen		W-38	E-239
Kaiwi, Jean		W-38	E-239
Kallenberg, Connie		W-38	E-239
Kamins, Lisa		W-38	E-239
Kamler, Cindy		W-38	E-239
Kampe, Susie		W-38	E-239
Kanaan, Alistair		W-38	E-239
Kane, Aileen		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Kanemoto, Jordan		W-38	E-239
Kang, Irene		W-38	E-239
Kanter, Fredrica		W-38	E-239
Kantola, Barbara		W-38	E-239
Kaplan, Joan		W-38	E-239
Kaplan, Lynette		W-38	E-239
Karan, Dr. Ashni J. Akland		W-38	E-239
Kareofelas, Greg		W-38	E-239
Karnos, Kristine		W-38	E-239
Karp, Chuck		W-38	E-239
Karsten, Eileen		W-38	E-239
Kasbo, Richard		W-38	E-239
Kasdan, Batsheva		W-38	E-239
Kasperovich, Josef		W-38	E-239
Kass, Bronte		W-38	E-239
Katz, Barry		W-38	E-239
Katz, Jeffrey		W-38	E-239
Katz, M		W-38	E-239
Katz, William		W-38	E-239
Kauffman, Anna		W-38	E-239
Kaufman, Andrea		W-38	E-239
Kausch, Heidi		W-38	E-239
Kavanaugh, Michael		W-38	E-239
Kay, Julie		W-38	E-239
Kaye-Carr, Josh		W-38	E-239
Kearney, Lisa		W-38	E-239
Kearns, Deette		W-38	E-239
Kearns, Patric		W-38	E-239
Keats, Bob		W-38	E-239
Keefe, Martin		W-23	E-158
Keena, Steve		W-38	E-239
Keever, Marcie E		W-38	E-239
Keever, Megan		W-38	E-239
Kegler, Lori		W-38	E-239
Keir, Alex		W-38	E-239
Keithley, Phyllis		W-26	E-161
Kelly, Bev		W-38	E-239
Kelly, Carol		W-38	E-239
Kelly, Lisa Ann		W-38	E-239
Kelly, Maura		W-38	E-239
Kelly, Mike		W-38	E-239
Kelsey, Myrna		W-38	E-239
Kelso, Carolyn		W-38	E-239
Kemp, Kris		W-38	E-239
Kempe, Juanita		W-38	E-239
Kemper, Michael		W-38	E-239
Kempf, Victoria		W-38	E-239
Kendall, Lavonne		W-38	E-239
Kenna, Aaron A.		W-38	E-239
Kennedy, Arthur		W-38	E-239
Kennedy, Kevin		W-38	E-239
Kenner, Kate.		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Kent, Susan		W-38	E-239
Kenyon, Nancy		W-38	E-239
Keough, Paul		W-38	E-239
Kerbow, Devon		W-38	E-239
Kerchevall, Charlene		W-38	E-239
Kerkhoff, Nick		W-38	E-239
Kern, Alicia		W-38	E-239
Kerr, James		W-38	E-239
Kerr, Peter		W-38	E-239
Kessler, Robert		W-38	E-239
Ketcherside, Sharon		W-38	E-239
Khalsa, Dr, Mha Atma S		W-38	E-239
Khalsa, Sant		W-38	E-239
Khalsa, Simran		W-38	E-239
Khan, Maryann		W-38	E-239
Kiger, Mary Ann		W-38	E-239
Kilby, Jim		W-38	E-239
Kim, Caroline		W-38	E-239
Kimball, Patricia C		W-38	E-239
Kimbauer, Elli		W-38	E-239
Kimmel, Suzanne		W-38	E-239
Kind, Kathryn		W-38	E-239
King, Barbara		W-38	E-239
King, Jean		W-38	E-239
King, Karrie		W-38	E-239
King, Melani		W-38	E-239
King, Melanie		W-38	E-239
King, Susan		W-38	E-239
King, Travis		W-38	E-239
Kingston, Nancy		W-38	E-239
Kinnett, Virginia		W-38	E-239
Kippes, Althea		W-38	E-239
Kirk, Brian		W-38	E-239
Kirkconnell, Robert		W-38	E-239
Kirkpatrick, Sue		W-38	E-239
Kirma, Gayle		W-38	E-239
Kirsch, Taylor		W-38	E-239
Kirschbaum, Saran		W-38	E-239
Kirton, Laura		W-38	E-239
Kishi, Stuart		W-38	E-239
Kissak, Connie		W-38	E-239
Kittinger, Susan		W-38	E-239
Kittredge, Robert		W-38	E-239
Klare, Mattie		W-38	E-239
Kleber, Craig		W-38	E-239
Klein, Joseph		W-38	E-239
Klein, Leslie		W-38	E-239
Klein, Nancy		W-38	E-239
Kliche, Diana		W-38	E-239
Kline, Lauren		W-38	E-239
Klinke, Sally		W-38	E-239
Kloby, Michael		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Klug, Frank		W-38	E-239
Knapp, Harry		W-38	E-239
Knieriemen, Susan		W-38	E-239
Knight, Kendra		W-38	E-239
Knight, Melody		W-38	E-239
Knoll, Carolyn		W-38	E-239
Knopp, Kristeene		W-38	E-239
Knowles, Cybele		W-38	E-239
Knowlton, Charlene		W-38	E-239
Knowlton, Madeleine		W-38	E-239
Knox, Elena		W-38	E-239
Knox, Mayumi		W-38	E-239
Kobayashi, Anne		W-38	E-239
Koch, Walter		W-38	E-239
Kocher, Sharon		W-38	E-239
Koehler, Kristie		W-38	E-239
Koehly, Dina		W-38	E-239
Koenig, John		W-38	E-239
Koeninger, Laura		W-38	E-239
Koessel, Karl		W-38	E-239
Koger, Patti		W-38	E-239
Kohn, Halle		W-38	E-239
Koivisto, Ellen		W-38	E-239
Kolb, Katelyn		W-38	E-239
Kolb, Marcia		W-38	E-239
Koll, Alison		W-38	E-239
Kolodzie, Mariah		W-38	E-239
Kommerstad-Reiche, Carol		W-38	E-239
Korelich, Greg		W-38	E-239
Koritz, Raleigh		W-38	E-239
Korte, Brenda		W-38	E-239
Kostruba, Gene		W-38	E-239
Kothari, Sheila		W-38	E-239
Kovac, Tatjana		W-38	E-239
Kovachevich, Peter		W-38	E-239
Kovacs, Julia		W-38	E-239
Kovler, Abraham		W-38	E-239
Kowall, Betty		W-38	E-239
Kozanitas, Cheryl		W-38	E-239
Kramer, Bruce		W-38	E-239
Krasnoff, Joshua		W-38	E-239
Kratins, Ojars		W-38	E-239
Kraus, Gary		W-38	E-239
Krause, Doug		W-38	E-239
Kredell, Grace		W-38	E-239
Krenzer, Ethan		W-38	E-239
Kreuter, Annica		W-38	E-239
Krevitz, A		W-38	E-239
Kriss, Evan Jane J.		W-38	E-239
Kritzer, Sherry		W-38	E-239
Krizan, Kim		W-38	E-239
Krout, Patricia		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Krupinski, K		W-38	E-239
Krupkin, Michelle		W-38	E-239
Krupnick, Wendy		W-38	E-239
Kuczynski, Kathleen		W-38	E-239
Kuehn, Gary		W-38	E-239
Kuelbs, Elizabeth		W-38	E-239
Kuelper, Carol		W-38	E-239
Kuge, Donna		W-38	E-239
Kuhn, Peter		W-38	E-239
Kuhnle, Kalua		W-38	E-239
Kuhns, Doris		W-38	E-239
Kung, Giar-Ann		W-38	E-239
Kunkel, Vicki		W-38	E-239
Kupferberg, Sarah		W-52	E-254
Kurnik, Jamie		W-38	E-239
Kurose, Edson		W-38	E-239
Kutcher, Vice President Celia		W-38	E-239
Kuticka, Sheri		W-38	E-239
Kutilek, Michael		W-38	E-239
L, Andy		W-38	E-239
L, Ed		W-38	E-239
L, Jamie		W-38	E-239
La Rocca, Isabella		W-38	E-239
Labadie, Howard		W-38	E-239
Labey, Georgia		W-38	E-239
Lacque, Andy		W-38	E-239
Lacy, Tiffani		W-38	E-239
Laestadius, Wm.		W-38	E-239
Lafaver, Barbara L		W-38	E-239
LaFong, Karl		W-38	E-239
LaGrange, Barbara		W-27	E-162
Lai, A.		W-38	E-239
Laine, Stacey		W-38	E-239
Lake, Daphne		W-38	E-239
LaMance, Ken		W-38	E-239
LaMar, Kathryn		W-38	E-239
Lamb, Alexandra		W-38	E-239
Lambert, Alan		W-38	E-239
Lambert, Carol		W-38	E-239
Lambert, Jason		W-21	E-156
Lambert, Jerome		W-38	E-239
Lanctot, Paul and Kathleen		W-38	E-239
Land, Martha		W-38	E-239
Lande, Robin		W-38	E-239
Landes, Michelle		W-38	E-239
Landi, Dennis		W-38	E-239
Landon, Jessica		W-38	E-239
Landureth, Win		W-38	E-239
Lane, Lama		W-38	E-239
Lang, John		W-38	E-239
Langan, Eileen		W-38	E-239
Langfield, Jennifer		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Langford, Kerry		W-38	E-239
Langham, Ph.D., Jeri		W-38	E-239
Langley, Pamela		W-38	E-239
Lango, John		W-38	E-239
Lanning, Kathryn		W-38	E-239
Lansing, Jim		W-38	E-239
Lao, I-Ching		W-38	E-239
Lappe, Roshanee		W-38	E-239
Lapuyade, Larry		W-38	E-239
Laquatra, Mike		W-38	E-239
Lareau, Erin		W-38	E-239
Lark, Dr. Neil L		W-38	E-239
Larkey, Molly		W-38	E-239
Larkin, Timothy		W-38	E-239
Larsen, Andrea		W-38	E-239
Larson, Dee		W-38	E-239
Larson, Elaine		W-38	E-239
Larson, Jr., R. Dene		W-38	E-239
Lasahn, J		W-38	E-239
Lascano, Natacha		W-38	E-239
Lascoue, Lillith		W-38	E-239
Lashaway, Lisa		W-38	E-239
Lathigara, Raj		W-38	E-239
Latta, George		W-38	E-239
Latta, Lynda		W-38	E-239
Laufer, Diana		W-38	E-239
Laurent, Val		W-38	E-239
Lautt, Doriel		W-38	E-239
Laverty, Laurence		W-38	E-239
Lavin, Ann		W-38	E-239
Law, Kimberley		W-38	E-239
Lawford, Rhonda		W-38	E-239
Lawnicki, Tim		W-38	E-239
Lawrence, Kathleen		W-38	E-239
Lawrence, Lorraine		W-38	E-239
Lawson, William		W-38	E-239
Le Blanc, Rena		W-38	E-239
Lea, Victoria		W-38	E-239
Leahy, Katherine		W-38	E-239
Learch, Lynn		W-38	E-239
Leath, Jan		W-38	E-239
Leavell, Charles		W-38	E-239
Lebas, Anne Marie		W-38	E-239
Lebo, Harlan		W-38	E-239
Lebon, Suzanne Ursula		W-38	E-239
Lecht, Paula		W-38	E-239
Leclerc, Marc		W-38	E-239
LeCompte, Rick		W-38	E-239
Ledden, Dennis		W-38	E-239
Lee, Barbara		W-38	E-239
Lee, Janet		W-38	E-239
Lee, Richard		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Lee, Sara		W-38	E-239
Lee, Sherrie		W-38	E-239
Lee, Sonya		W-38	E-239
Leeder, Cynthia		W-38	E-239
Leeds, Vicki		W-38	E-239
Leff, Marika		W-38	E-239
Leifer, Laura		W-38	E-239
Leigh, Lynda		W-38	E-239
Leighton-Toth, Mindy		W-38	E-239
Leiva, Miranda		W-38	E-239
Lemelin, Carl		W-38	E-239
Lenardson, Denise		W-38	E-239
Lenchner, Nicholas		W-38	E-239
Lennox, Kent		W-38	E-239
Lentz, Merryl		W-38	E-239
Lentz, Susan		W-38	E-239
Leonard, Diane		W-38	E-239
Leopard, Sunday		W-38	E-239
LePow, Cody		W-38	E-239
Leppo, Bob		W-38	E-239
Lerner, B.		W-38	E-239
Lesch, Shana		W-38	E-239
Leske, Jim		W-38	E-239
Leskiw, Sue		W-38	E-239
Lesmond, Michelle		W-38	E-239
Lesniak, Cydney		W-38	E-239
Lethridge, Leslie		W-38	E-239
LEtoile, Sarah		W-38	E-239
Leuenberger, Carol		W-38	E-239
Leung, Wendy		W-38	E-239
Levannier, Christi		W-38	E-239
Levenson, Carole		W-38	E-239
Levicke, Jeff		W-38	E-239
Levin, Allison		W-38	E-239
Levine, Katie		W-38	E-239
Levine, Ross		W-38	E-239
Levine, Sandy		W-38	E-239
levitt, Cody		W-38	E-239
Levitt, Em		W-38	E-239
Levitt, Jason		W-38	E-239
Levitt, Lacey		W-38	E-239
Levitt, Michael		W-38	E-239
Levitt, Robert		W-38	E-239
Levy, David		W-38	E-239
Lew, Dennis		W-38	E-239
Lewis, Catherine		W-38	E-239
Lewis, Cynthia		W-38	E-239
Lewis, George		W-38	E-239
Lewis, John		W-38	E-239
Lewis, o		W-38	E-239
Lewis, Patricia		W-38	E-239
Lewis, Rena		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Lewis, Sherman		W-38	E-239
Lewis, Tryphena		W-38	E-239
Li, Jenny		W-38	E-239
Lichstein, Debra		W-38	E-239
Licitra, Marlene		W-38	E-239
Liddle, George		W-38	E-239
Liddy, Patricia		W-38	E-239
Lidecis, Marisa		W-38	E-239
Lieb, Louise		W-38	E-239
Lieberman, Sharon		W-38	E-239
Liem, Betty		W-38	E-239
Lieurance, Cynthia		W-38	E-239
Likens, Jessica		W-38	E-239
Lilith, Ms.		W-38	E-239
Lilla, Brian		W-38	E-239
Lilly, Susan		W-38	E-239
Lim, Olivia		W-38	E-239
Lima, Carmen		W-38	E-239
Lima, Megan		W-38	E-239
Limtavemongkol, Alison		W-38	E-239
Linarez, KJ		W-38	E-239
Lind, Amy		W-38	E-239
Lind, Michelle		W-38	E-239
Linda, Lauren		W-38	E-239
Lindelof, George		W-38	E-239
Lindenberger, teri		W-38	E-239
Linder, Patty		W-38	E-239
Lindey, Robert		W-38	E-239
Lindgren, Jean		W-38	E-239
Lindh, Carrie		W-38	E-239
Lindsay, Johanna		W-38	E-239
Lindsey, Jesse		W-38	E-239
Lindsley, Mary		W-38	E-239
Lindsly, Colin		W-38	E-239
Lininger, Georgia		W-38	E-239
Lipmanson, Don		W-64	E-266
Lipner, Pearl		W-38	E-239
Lipschutz, Yael		W-38	E-239
Lirones, Margaret		W-38	E-239
Lisa, Carrie		W-38	E-239
Liscomb, Melissa		W-38	E-239
Lish, Christopher		W-32	E-167
Little, Dorothy		W-38	E-239
Little, Ellen		W-38	E-239
Little, Heather		W-38	E-239
Little, Patricia		W-38	E-239
Little, Sandra		W-38	E-239
Littrell, Shannon		W-38	E-239
Livesey-Fassel, Elaine		W-38	E-239
Lizarraga, Valerie		W-38	E-239
Llewellyn, Pamela		W-38	E-239
Llewelyn, Debbie		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Lloyd, Gilly		W-38	E-239
Lloyd, Jack		W-38	E-239
Lobel, Colleen		W-38	E-239
LoBianco, Ro		W-38	E-239
Loda, Jennifer		W-38	E-239
Loe, Peggy		W-38	E-239
Loe, Steve		W-38	E-239
Loewer, Vera		W-38	E-239
Logan, Kelly		W-38	E-239
Loizos, Nina		W-38	E-239
Londe, MD, Dr. Helen		W-38	E-239
London, Arlyne		W-38	E-239
Long, Bonnie		W-38	E-239
Long, Kit		W-38	E-239
Long, Kristina		W-38	E-239
Long, Larisa		W-38	E-239
Long, Loretta		W-38	E-239
Long, Lynne		W-38	E-239
Long, Tisha Carper		W-38	E-239
Longsworth, Jon		W-38	E-239
Loomis, Cindy		W-38	E-239
Looney, Ernie		W-38	E-239
Lopez, Damian		W-59	E-261
Lopez, I.M.		W-38	E-239
Lopez, Iliana		W-38	E-239
Lopez, John		W-38	E-239
Lopez, Mary		W-38	E-239
Lopez, Maryrose		W-38	E-239
Lopez, Ralph		W-38	E-239
Lopez, Suzanne		W-38	E-239
Lopez, Vanessa		W-38	E-239
Lopez, Victor		W-38	E-239
Lora, Juan		W-38	E-239
Lord, Robert		W-38	E-239
Loree, Joe		W-38	E-239
Lorentzen, Robert		W-38	E-239
Lorioux, Thomas		W-38	E-239
Lotz, Jude		W-38	E-239
Louie, V.		W-38	E-239
Love, Tessa		W-38	E-239
Lovig, Jayne		W-38	E-239
Lowe, Jacklyn J		W-38	E-239
Lowe, Margot		W-38	E-239
Lowe, Martha		W-38	E-239
Lowman, James		W-38	E-239
Lowman, Maryanne		W-38	E-239
Lowrance, Avila		W-38	E-239
Lowry, Lorraine		W-38	E-239
Lowry, Marsha		W-38	E-239
Lowry, Pamela A.		W-38	E-239
Lu, Mimi		W-38	E-239
Lubin, Diana		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Lubitz, Iris		W-38	E-239
Lucas, Ken		W-38	E-239
Lucas, Rosa		W-38	E-239
Lucchesi, Larry		W-38	E-239
Lucero, Marsha		W-38	E-239
Lucia, Angela		W-38	E-239
Ludwig, Abbie		W-38	E-239
Luiso, Mark		W-38	E-239
Lukacova, Mariana		W-38	E-239
Lukezich, Charlotte		W-54	E-256
Lum, Dr. Lori		W-38	E-239
Lum, Jeanna		W-38	E-239
Lumière, André		W-38	E-239
Lumpkin, Kirk		W-38	E-239
Luna, Peggy		W-38	E-239
Lund, Cindi		W-38	E-239
Lundquist, John		W-38	E-239
Lundquist, Loraine		W-38	E-239
Lunsford, Jimmie		W-38	E-239
Lupenko, Andy		W-38	E-239
Lutes, Karyn		W-38	E-239
Luu, Thao		W-38	E-239
Luursema, Eva		W-38	E-239
Lyday, Dennis		W-38	E-239
Lynette, Renee		W-38	E-239
Lynn, Alice		W-38	E-239
Lynn, Frances		W-38	E-239
Lyon, Barbara		W-38	E-239
Lyon, Jane		W-38	E-239
Lyons, Mike		W-38	E-239
Lysaght, Stephen		W-38	E-239
Lytle, Gail		W-38	E-239
M, C		W-38	E-239
M, G		W-38	E-239
M, June		W-38	E-239
M, N		W-38	E-239
M., Lara		W-38	E-239
Macan, Catherine		W-38	E-239
Macan, Edward		W-38	E-239
MacCollom, Alex		W-38	E-239
Macdonald, BC		W-38	E-239
Machesney, Lisa		W-38	E-239
Macias, Sherry		W-38	E-239
MacIntosh, Lynne		W-38	E-239
Mack, Paula		W-38	E-239
Mackay, Ingeborg		W-38	E-239
Mackay, Leslie		W-38	E-239
Mackenzie, Michelle		W-38	E-239
Mackey, Claudia		W-38	E-239
Mackey, Robin		W-38	E-239
MacKinnon, BonnieLynn		W-38	E-239
MacMillan, Brigitta		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
MacMillan, Lawrie		W-38	E-239
MacNaughton, Melinda		W-38	E-239
MacRaith, Bonnie		W-38	E-239
Madden, Meg		W-38	E-239
Madeira, Linda		W-38	E-239
Madrid, Maria		W-38	E-239
Madrid, Robin		W-38	E-239
Magathan, Pamela		W-38	E-239
Magrath, Pat		W-38	E-239
Maher, David		W-38	E-239
Maille, Jessica		W-38	E-239
Maine, Dineo		W-38	E-239
Mainland, Edward		W-38	E-239
Maizel, Yefim		W-38	E-239
Majerowicz, Eugene		W-38	E-239
Maker, Janet		W-38	E-239
Makool, Rachel		W-38	E-239
Maldonado, Adrian		W-38	E-239
Maldonado, Gloria Linda		W-38	E-239
Malmuth, Sonja		W-38	E-239
Malone, Annie		W-38	E-239
Malone, Lisa		W-38	E-239
Malone, Marsha		W-38	E-239
Mandelbaum, Ilene		W-38	E-239
Mandich, Rebecca Vitale		W-38	E-239
Mangel, Donna		W-38	E-239
Mangels, Francis		W-38	E-239
Manis, Kathryn		W-38	E-239
Mann, Elaina		W-38	E-239
Manning, Dee		W-38	E-239
Manning-Brown, Helen		W-38	E-239
Mannolini, Audrey		W-38	E-239
Manska, Faith		W-38	E-239
Manzanilla, Diana		W-38	E-239
Marantz, Curtis		W-38	E-239
Marcus, Sybil		W-38	E-239
Marderosian, Executive Direct Ara		W-38	E-239
Marinelli, Annamaria		W-38	E-239
Marinelli, Antonella		W-38	E-239
Mariscal, Nicole		W-38	E-239
Markel, Heidi Jo		W-38	E-239
Markstrom, Dian		W-38	E-239
Marlatt, Patricia L		W-38	E-239
Marocchino, PhD, FT, Kathryn		W-38	E-239
Marquez, III, Mariano		W-38	E-239
Marsh, Michael		W-38	E-239
Marsh, Sherry		W-38	E-239
Marshall, Craig		W-46	E-248
Marshall, Janelle		W-38	E-239
Marshall, Kathy		W-38	E-239
Marshall, Raymond		W-38	E-239
Marshall, Renee		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Marshall, Tariq		W-38	E-239
Marshel, Linda		W-38	E-239
Martelli, Arnold J		W-38	E-239
Marth, Jamey		W-38	E-239
Martin, David		W-38	E-239
Martin, Lisa		W-38	E-239
Martin, Nancy		W-38	E-239
Martin, Staci		W-38	E-239
Martindale, Patricia		W-38	E-239
Martinez, Alfred		W-38	E-239
Martinez, Birgitta		W-38	E-239
Martinez, John		W-38	E-239
Martinez, Jr., Raul		W-38	E-239
Martinez, Maribel S		W-38	E-239
Martinez, Oscar		W-38	E-239
Martinez, Sheila		W-38	E-239
Martinez, Yvonne		W-38	E-239
Martini, Carol		W-38	E-239
Martini, Mary Theresa		W-38	E-239
Masarik, Charlotte		W-38	E-239
Mascote, N		W-38	E-239
Masek, M		W-38	E-239
Mashburn, Kris		W-38	E-239
Masi, James		W-38	E-239
Masiello, Francesco		W-38	E-239
Mason, Bonnie		W-38	E-239
Mason, Charlene		W-38	E-239
Mason, Mary M.		W-38	E-239
Mason, Toby		W-38	E-239
Massa, Joy		W-38	E-239
Masser, Joel		W-38	E-239
Massey, Eileen		W-38	E-239
Masson, Jacqueline		W-38	E-239
Massoubre, Ann Gould		W-38	E-239
Masters, Kanta		W-38	E-239
Masuda, Patricia		W-38	E-239
Matelski, Lauren		W-38	E-239
Materi, Sandra		W-38	E-239
Mathews, Kit		W-38	E-239
Matlock, Dale		W-38	E-239
Matranga, Christina		W-38	E-239
Matsuo, June		W-38	E-239
Mattes, Dale		W-38	E-239
Matthews, Nan		W-38	E-239
Matz, Tamara		W-38	E-239
Maupin, Dr. Edward		W-38	E-239
Maxfield, Casee		W-38	E-239
May, Dorian		W-38	E-239
May, Joe		W-38	E-239
Mayer, Judith		W-38	E-239
Mayer, Karen		W-38	E-239
Mayer, Susan		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Mayosky, Denise		W-38	E-239
Maz, Judy		W-38	E-239
Mazumder, Indro		W-38	E-239
Mazzola, Lisa		W-38	E-239
Mc Millan, Odette		W-38	E-239
Mcallister, Helen		W-38	E-239
McAuliffe, Mary		W-38	E-239
McBirney, Joanne		W-38	E-239
McBride, Ellen		W-38	E-239
McCalister, Janet		W-38	E-239
McCampbell, Christopher		W-38	E-239
Mccann, Leona		W-38	E-239
McCarthy, Aislinn		W-38	E-239
McCarthy, Carol		W-38	E-239
McCarthy, Mike		W-38	E-239
McCarthy, Tracy		W-38	E-239
McCauley, Patricia		W-38	E-239
McChrystal, Karen		W-38	E-239
McCleary, Bob		W-38	E-239
McClintock, Kevin		W-38	E-239
McCollom, Dorothy		W-38	E-239
McCollum, Sudi		W-38	E-239
Mccormick, Devin		W-38	E-239
Mccormick, Douglas		W-38	E-239
McCormick, Sandra		W-38	E-239
McCormick, Sharon		W-38	E-239
McCoy, Dan		W-38	E-239
McCoy, Michael		W-38	E-239
McCranie, T.K.		W-38	E-239
Mccready, Tamara		W-38	E-239
McCulloch, G		W-38	E-239
McCullough, Justin		W-38	E-239
McCurty, Tiio-Mai		W-38	E-239
McCutchan, Ashley		W-38	E-239
McDaniel, Skot		W-38	E-239
McDonald, Mary Ann		W-38	E-239
Mcdonald, Maureen		W-38	E-239
Mcdonnell, Robert		W-38	E-239
McDowell, Kelley		W-38	E-239
McElvany, Doreen		W-38	E-239
McElvany, Doreen		W-38	E-239
Mcelwee, Katie		W-38	E-239
McEnerney, Molly		W-38	E-239
McEntire, Modell		W-38	E-239
McGee, Carolita		W-38	E-239
Mcghan, Cheryl		W-38	E-239
McGowan, Elizabeth		W-38	E-239
McGowan, Gail		W-38	E-239
Mcgrain, Nancy		W-38	E-239
Mcgraths, Kathy		W-38	E-239
Mcgraw, Jane		W-38	E-239
McGraw, Stepheny		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
McIntosh, Wendy		W-38	E-239
McIntyre, Amanda		W-38	E-239
Mckay, Denise		W-38	E-239
Mckay, Jean		W-38	E-239
McKelvey, Gerald		W-38	E-239
McKitrick, Marshal		W-38	E-239
Mcknight, Melissa		W-38	E-239
McLamb, Lynette		W-38	E-239
McLaughlin, Janell		W-38	E-239
McLaughlin, Joe		W-38	E-239
McLaughlin, Michael		W-44	E-246
McLaughling, Janet H		W-38	E-239
McLay, Lisa		W-38	E-239
McLean, Donald		W-38	E-239
McLellan, Tawny		W-38	E-239
McLeod, Eileen		W-38	E-239
McMahan, Michael		W-38	E-239
McMath, Cynthia		W-38	E-239
McMullen, Gail		W-38	E-239
McMullen, Marilyn		W-38	E-239
McMurtrey, Anita		W-38	E-239
McNeal, Shirley		W-38	E-239
McNeil, Gina		W-38	E-239
Mcnemar, Tim		W-38	E-239
McRae, Frank		W-38	E-239
Meade, Janet		W-38	E-239
Meade, Pattie		W-38	E-239
Meads, Mary Sue		W-38	E-239
Mecke, Ernst		W-38	E-239
Meckler, Deborah		W-38	E-239
Medina, Deborah		W-38	E-239
Mee, Allison		W-38	E-239
Meehan, Mary		W-38	E-239
Meek, Laura		W-38	E-239
Meeker, Tobias		W-38	E-239
Meeks, Helene Carol		W-38	E-239
Meeks, Jack		W-38	E-239
Meert, Rosemary		W-38	E-239
Mehta, Adil		W-38	E-239
Meier, Robert J		W-38	E-239
Mejia, Karla		W-38	E-239
Mejia, Lily		W-38	E-239
Meldau, Tom		W-38	E-239
Melin, Jeff		W-38	E-239
Melin, Ron		W-38	E-239
Melius, Dan		W-38	E-239
Melko, Penelope		W-38	E-239
Mello, Debra		W-38	E-239
Mellon, Barbara		W-38	E-239
Melton, Kathy		W-38	E-239
Menard, Jana		W-38	E-239
Mendoza, Miranda		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Mendoza, Tanya		W-38	E-239
Meng, Gina		W-38	E-239
Menne, Suzanne		W-38	E-239
Menzel, Sandra		W-38	E-239
Mercado, Jaime		W-38	E-239
Mercer, Noelle		W-38	E-239
Meredith, Lauren		W-38	E-239
Merell, Mike		W-38	E-239
Merkel, Karynn		W-38	E-239
Merrick, Diane		W-38	E-239
Merrill, Beth		W-38	E-239
Metter, Adrienne		W-38	E-239
Mettie, Bonna		W-38	E-239
Mettier, Pam		W-38	E-239
Mexina, Clara		W-38	E-239
Meyer, Lesley		W-38	E-239
Meyer, Patricia		W-38	E-239
Meyer, Robert		W-38	E-239
Meyer, Twyla		W-38	E-239
Meyer, Valerie		W-38	E-239
Meyers, James		W-38	E-239
Mhanna, Salem		W-38	E-239
Michalak, Cheri		W-38	E-239
Mick, Rick		W-38	E-239
Middleton, Chris		W-38	E-239
Mielniczuk, Allison		W-38	E-239
Mierau, Ehren		W-38	E-239
Mikals, Nicole		W-38	E-239
Miksovsky, Rose		W-38	E-239
Milaney, Kirsten		W-38	E-239
Milano, Gary		W-56	E-258
Mildenberger, Julia		W-38	E-239
Milic, Ljiljana		W-38	E-239
Miller, Bob		W-38	E-239
Miller, Bonnie		W-38	E-239
Miller, Corinne		W-38	E-239
Miller, Dianne		W-38	E-239
Miller, Edmund		W-38	E-239
Miller, Joan		W-38	E-239
Miller, Kelly		W-38	E-239
Miller, Ken		W-38	E-239
Miller, Kenneth		W-38	E-239
Miller, Lee		W-38	E-239
Miller, Melissa		W-38	E-239
Miller, Nancy		W-38	E-239
Miller, Rachelle		W-38	E-239
Miller, Robert		W-38	E-239
Miller, Ryan		W-38	E-239
Miller, Scott		W-38	E-239
Miller, Sherie		W-38	E-239
Miller, Timothy		W-38	E-239
Miller, Victoria		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Miller, Vincent		W-38	E-239
Miller, Wayne W		W-38	E-239
Millet, Karen		W-38	E-239
Milliken, Elizabeth		W-38	E-239
Mills, Chris		W-38	E-239
Mills, Faye		W-38	E-239
Mills, Marlene		W-38	E-239
Mills, Shirley		W-38	E-239
Mills, Stephen		W-38	E-239
Miloszewska, Joanna		W-38	E-239
Milton, Jack		W-38	E-239
Minault, Kent		W-38	E-239
Minet, Queenelle		W-38	E-239
Mingo, Danielle		W-38	E-239
Minick, Clotine		W-38	E-239
Minnich, Lindsay		W-38	E-239
Miranda, Caregiver Michelle		W-38	E-239
Miranda, Luisa		W-38	E-239
Misdorp, Adrianne		W-38	E-239
Mitchel, William H		W-38	E-239
Mitchell, Zephyr		W-38	E-239
Mitnikt, Tatyana		W-38	E-239
Mitose, Kazuko		W-38	E-239
Mitsuda, Michael		W-38	E-239
Mitteldorrf, Harriet		W-38	E-239
Miura, Siobhan		W-38	E-239
Mock, Neal		W-38	E-239
Moffett, Allison		W-38	E-239
Mohn, Veronica		W-38	E-239
Mohr, Jon		W-38	E-239
Mohr, Lea.		W-38	E-239
Mokelke, Susan		W-38	E-239
Molgora, Bianca		W-38	E-239
Monahan, Louise		W-38	E-239
Monfredini, Janet		W-38	E-239
Monjaras, Victor		W-38	E-239
Monnahan, Autumn		W-38	E-239
Monnet, Myrian		W-38	E-239
Monocroussos, Ellen		W-38	E-239
Monroe, Dana		W-38	E-239
Monroe, James R		W-38	E-239
Monroe, Jeanette		W-38	E-239
Monrow, Maynard		W-38	E-239
Montano, Brandi		W-38	E-239
Montapert, Anthony		W-38	E-239
Montenegro, Alma		W-38	E-239
Mont-Eton, Jean		W-38	E-239
Montijo, Alexandra		W-38	E-239
Montoya, Shannon		W-38	E-239
Mooney, Fjaere		W-38	E-239
Moore, Daniel		W-38	E-239
Moore, Erica		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Moore, Malc		W-38	E-239
Moore, Michael		W-38	E-239
Moore, Pam		W-38	E-239
Moore, Paul		W-38	E-239
Moore, Rod		W-38	E-239
Moore, Tim		W-38	E-239
Moore, Timothy		W-38	E-239
Moorman, Claudia		W-38	E-239
Morales, Carlos L.		W-38	E-239
Morales, Henrietta		W-38	E-239
Morales, Karla		W-38	E-239
Morales, Rosy		W-38	E-239
Morales, Stephanie		W-38	E-239
Moreau, John		W-38	E-239
Moreno, Olivia		W-38	E-239
Moretti, Vicente		W-38	E-239
Morgan, Dan		W-38	E-239
Morgan, Evan		W-38	E-239
Morgan, Joshua		W-38	E-239
Morgan, Linda		W-38	E-239
Morgan, Michelle		W-38	E-239
Morgan, Steven		W-38	E-239
Morgan-Bieber, Ruth		W-57	E-259
Moricca, Joan		W-38	E-239
Morison, Mariel		W-38	E-239
Moritz, Derry Ann		W-38	E-239
Morley, Dennis		W-38	E-239
Morris, Alexis		W-38	E-239
Morris, Darlene		W-38	E-239
Morris, Gerald		W-38	E-239
Morris, Leslie		W-38	E-239
Morris, Peter		W-38	E-239
Morris, Sharon		W-38	E-239
Morris, Tracy		W-38	E-239
Morrison, Lynn		W-38	E-239
Morrissey, Ryushin		W-38	E-239
Morrone, Suzanne		W-38	E-239
Moseley, Arianne		W-38	E-239
Moseman, Jim		W-38	E-239
Moser, Joyce/Henry		W-38	E-239
Moser, Rich		W-38	E-239
Moss, Gregory		W-38	E-239
Moss, Joanne		W-38	E-239
Motter, Marcina		W-38	E-239
Mottola, Phyllis		W-38	E-239
Moulton, Estelle		W-38	E-239
Mrozek, Barbara		W-38	E-239
Mueller, Karsten		W-38	E-239
Mueller, Kerstin		W-38	E-239
Mueller, Martha		W-38	E-239
Mueller, Peter		W-38	E-239
Muhar, Jana Lynne Webb		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Mukminov, Timur		W-38	E-239
Mulcare, James S		W-38	E-239
Mulder, Mark		W-38	E-239
Mullins, Glenn		W-38	E-239
Mumford, Patricia		W-38	E-239
Mundal, Sarah		W-38	E-239
Mundy, Ken W		W-38	E-239
Munn, Erica		W-38	E-239
Munoz, Anna		W-38	E-239
Murdoch, Sarah		W-38	E-239
Murdock, Lauren		W-38	E-239
Murphey, James I.		W-38	E-239
Murphy, Annie		W-38	E-239
Murphy, Ann-Marie		W-38	E-239
Murphy, Brian		W-38	E-239
Murphy, James		W-38	E-239
Murphy, Joanie		W-38	E-239
Murphy, Joe		W-38	E-239
Murphy, Melissa		W-38	E-239
Murphy, Millard		W-38	E-239
Murphy, Tim		W-38	E-239
Murray, Barbara		W-38	E-239
Murray, Ian		W-38	E-239
Murray, Roy		W-38	E-239
Murray, Suzanne		W-38	E-239
Murty, Cian		W-38	E-239
Muser, Stephen		W-38	E-239
Musick, Doug		W-38	E-239
Myatt, Cyndi		W-42	E-244
Myers, Derald		W-38	E-239
Myers, Jan		W-38	E-239
Myers, Jean		W-38	E-239
Mynko, Teresa		W-38	E-239
N, Cynthia		W-38	E-239
Nadler, Mary		W-38	E-239
Nadolski, Jessica		W-38	E-239
Nadolski, John		W-38	E-239
Nagy, Barbara		W-38	E-239
Nahigian, Ken		W-38	E-239
Naismith, Laura		W-38	E-239
Nakada, Tomas		W-38	E-239
Nakayama, Midori		W-38	E-239
Napoletano, Kelly		W-38	E-239
Narbutovskih, Anna		W-38	E-239
Nash, T		W-38	E-239
Natale, Patricia		W-38	E-239
Navarro, Adrianne		W-38	E-239
Navarro, Allison		W-38	E-239
Navarro, Andres		W-38	E-239
Navarro, Juliana		W-38	E-239
Navarro, Matilde		W-38	E-239
Navejas, Luisa		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Naylor, Mary		W-38	E-239
Nccutchan, Maria		W-38	E-239
Neace, Shirl Lee		W-38	E-239
Neal, Charles		W-38	E-239
Neal, J		W-38	E-239
Neal, Kathy		W-38	E-239
Neely, Nancy		W-38	E-239
Nellyna, Rogereau		W-38	E-239
Nelson, Brett		W-38	E-239
Nelson, Christine		W-38	E-239
Nelson, Deborah		W-38	E-239
Nelson, L		W-38	E-239
Nelson, Lisa		W-38	E-239
Nelson, Pamela		W-38	E-239
Nelson, Sally		W-38	E-239
Nelson, Tracy		W-38	E-239
Nemeth, Cipra		W-38	E-239
Nerney, Larry		W-38	E-239
Nero, Kim		W-38	E-239
Nesel, Michael Damian		W-38	E-239
Netkin, Steven		W-38	E-239
Neuber, Christa		W-38	E-239
Neubert, Karen		W-38	E-239
Neufeld, Jane		W-38	E-239
Neuhauser, Alice		W-38	E-239
Neustadt, Landon		W-38	E-239
Nevarez, Salyna		W-38	E-239
Neveras, Sandra		W-38	E-239
Nevin, Debra		W-38	E-239
Newman, Dr. Arnold		W-38	E-239
Newman, Nancy		W-38	E-239
Newman, Suzanne		W-38	E-239
Newnham, Nicole		W-38	E-239
Newton, Laura		W-38	E-239
Ngo, Rosemary		W-38	E-239
Nguyen, Dylan		W-38	E-239
Niazmand, Haleh		W-38	E-239
NIcholas, Julie		W-38	E-239
Nicholes, Linda		W-38	E-239
Nicklaus, Patti		W-38	E-239
Nicodemus, Sharon		W-38	E-239
Niebuhr, Christine		W-38	E-239
Nielsen-Mackley, Lena		W-38	E-239
Nielson, Richard		W-53	E-255
Niknam, Amir		W-38	E-239
Nilssen, Nancy		W-38	E-239
Noble, Diane		W-38	E-239
Noble, Maureen		W-38	E-239
Noel, Philip		W-38	E-239
Noellert, Sunnie		W-38	E-239
Nogawski, Emily		W-38	E-239
Nolan, Katherine		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Nolan, Nancy		W-38	E-239
Noordyk, James		W-38	E-239
Noragon, Jack		W-38	E-239
Norlund, Rick and Sharon		W-38	E-239
Norman, Gregg		W-38	E-239
Norman, Larry		W-38	E-239
Norris, Lisa		W-38	E-239
Norte, Christopher		W-38	E-239
North, Edward		W-38	E-239
Norton, Mary		W-38	E-239
Norwood, Darlene		W-38	E-239
Notary, Kimberly		W-38	E-239
Nowack, Laura		W-38	E-239
Nowicki, Maria		W-38	E-239
Nualchawee, Rungruedee		W-38	E-239
Nudelman, Deborah		W-38	E-239
Nukida, Lissette		W-38	E-239
Nunez, Carlos		W-38	E-239
Nunez, Stephanie		W-38	E-239
Nutt, Rhiana		W-38	E-239
Nye, Annabelle		W-38	E-239
Nygren, Vicki		W-38	E-239
Nyne, Kate		W-38	E-239
Nyquist, Leslie		W-38	E-239
O, Jacqueline		W-38	E-239
O, Nancy		W-38	E-239
Obre, Kathleen		W-38	E-239
OBrien, Audrey		W-38	E-239
O'Brien, Floyd		W-38	E-239
OBrien, Kathy		W-38	E-239
O'Brien, Patrick		W-38	E-239
O'Brien, Tarin		W-38	E-239
O'Bryan, Kim		W-38	E-239
O'bryan, Rick		W-38	E-239
Obudzinski, Dirk		W-38	E-239
Obyrne, Cynthia		W-38	E-239
Ochsenweidenheimer, Wayne		W-38	E-239
Oconnell, Valdia		W-38	E-239
O'Connor, Bette		W-38	E-239
OConnor, Dan		W-38	E-239
Oda, John		W-38	E-239
Odell, Rollin		W-38	E-239
Odom Cassandra		W-38	E-239
Oelker, Gregg		W-38	E-239
Ogata, Robin		W-38	E-239
Ogella, Edith		W-38	E-239
Ogilvie, Dave		W-38	E-239
O'Hara, Sharon		W-38	E-239
Ohlinder, Karenn		W-38	E-239
Ohnstad, Brenda		W-38	E-239
Okamura, Jean		W-38	E-239
Okubo, Audrey		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Oleson, Tami		W-38	E-239
Oleynikov, Karina		W-38	E-239
Olin, Barbara		W-38	E-239
Olin, Christopher E.		W-38	E-239
Olivares, Nancy		W-38	E-239
Oliver, Rachel		W-38	E-239
Olivier, Lynne		W-38	E-239
Olsen, Andrew		W-38	E-239
Olson, Alan		W-38	E-239
Olson, Diane		W-38	E-239
Olson, L.		W-38	E-239
Olson, Leah		W-38	E-239
Olson, Sarah		W-38	E-239
Olvera, Jennifer		W-38	E-239
Olynyk, Joseph		W-38	E-239
Oman, Barbara		W-38	E-239
ONeal-O'Rourke, Terry		W-38	E-239
ONeill, Valjean		W-38	E-239
Onesti, Frances		W-38	E-239
Ong, Ning Su		W-38	E-239
Opp, Sheri		W-38	E-239
O'Rielly, Julie		W-38	E-239
Orr, Emily		W-38	E-239
Orr, Gregg		W-38	E-239
Orr, Julian		W-38	E-239
Orr, Save Panama Bios Trent		W-38	E-239
Ortega, Marlene		W-38	E-239
Ortiz, Gina		W-38	E-239
Ortiz, Ivonne		W-38	E-239
Ortiz, Robert		W-38	E-239
Osborn, Julie		W-38	E-239
Osborne, Sharon		W-38	E-239
Osborne, Valerie		W-38	E-239
Osgood, Karen and Edward		W-38	E-239
Oshea, Shawn		W-38	E-239
Oshiro, Mabel		W-38	E-239
Oshita, Roy		W-38	E-239
Osterhoudt, David		W-38	E-239
Ostrow, Hillary		W-38	E-239
O'Sullivan, Michael		W-38	E-239
Otterbach, Margit		W-38	E-239
Overmann, Laura		W-38	E-239
Owens, Theresa		W-38	E-239
Oxley, Rhonda		W-38	E-239
P, Annie		W-38	E-239
P, C		W-38	E-239
P, J		W-38	E-239
Packard, Rae		W-38	E-239
Padilla, Melania		W-38	E-239
Padilla, Monica		W-38	E-239
Padilla, Sergio		W-38	E-239
Padmanabhan, Urmila		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Paganucci, Sandy		W-38	E-239
Page, Nancy		W-38	E-239
Paisley, Lorna		W-38	E-239
Palacio, Diane		W-38	E-239
Palacky, Tami		W-38	E-239
Paladin, Marilyn Mineo		W-38	E-239
Palen, Dr. Wendy		W-38	E-239
Palladine, Michelle		W-38	E-239
Pallanes, Beatriz		W-38	E-239
Palmer, Allie		W-38	E-239
Palmer, Mary Pat		W-38	E-239
Palmer, Robert		W-38	E-239
Palmer, Shirley		W-38	E-239
Paltin, Sharon		W-38	E-239
Panayi, Christopher		W-38	E-239
Pangman, Cindy		W-38	E-239
Panico, Drew		W-38	E-239
Pann, Member Robert		W-38	E-239
Pannell, Bonnie		W-38	E-239
Papermaster, Cynthia		W-38	E-239
Pappas, Marie		W-38	E-239
Papsidera, Valoree		W-38	E-239
Par, Alex		W-38	E-239
Paradise, Brian		W-38	E-239
Paratelli, Patrizio		W-38	E-239
Paredes, Leslie		W-38	E-239
Parfenova, Marina		W-38	E-239
Parisi, Nancy		W-38	E-239
Park, Robert		W-38	E-239
Park, Ruth		W-38	E-239
Parker, Elaine L		W-38	E-239
Parker, Erika		W-38	E-239
Parker, Jennifer		W-38	E-239
Parkins, Cheryl L		W-38	E-239
Parramore, Jennifer		W-38	E-239
Parrish, Carolyn		W-38	E-239
Parrish, Caryl		W-38	E-239
Parrish, L.		W-38	E-239
Parrott, Betsy		W-38	E-239
Parrott, Ern		W-38	E-239
Parsons, Denise		W-38	E-239
Parsons, Ron		W-38	E-239
Parzick, Anne L		W-38	E-239
Pasqua, John		W-38	E-239
Pasqua, John		W-38	E-239
Pasquinelli, Dorothy		W-38	E-239
Passmore, David		W-38	E-239
Patch, Rashid		W-38	E-239
Patek, Pamela L		W-38	E-239
Patel, Sarosh		W-38	E-239
Patent, Jason		W-38	E-239
Patra, Lynn		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Patrick, Nita		W-38	E-239
Patterson, Dixie		W-38	E-239
Patterson, Katherine		W-38	E-239
Patterson, Kevin		W-38	E-239
Patterson, Thomas		W-38	E-239
Patton, Carol		W-38	E-239
Patton, James		W-38	E-239
Pay, Nat		W-38	E-239
Payne, Laura		W-38	E-239
Peak, Tina		W-38	E-239
Pearce, Terence		W-38	E-239
Peavy, Jerry		W-38	E-239
Peck, Karin		W-38	E-239
Peck, Pamela		W-38	E-239
Peckham, Gretchen		W-38	E-239
Pedersen, Ashley		W-38	E-239
Pekrul, Elissa		W-39	E-241
Pelakh, Susan		W-38	E-239
Pellizzari, Lori		W-38	E-239
Pelton, Dal		W-60	E-262
Pennington, John		W-38	E-239
Pennington, Kenneth		W-38	E-239
Penrose, Linda		W-38	E-239
Pepin, Paula		W-38	E-239
Percy, Michael		W-38	E-239
Perea, Licia		W-38	E-239
Pereira, Dr. Anita		W-38	E-239
Perenne, Luise		W-38	E-239
Perez, Cristina		W-38	E-239
Perez, Julie		W-38	E-239
Perez, Rich		W-38	E-239
Perez, Yecenia		W-38	E-239
Peri, Deborah		W-38	E-239
Peril, S		W-38	E-239
Perinchief, Jana		W-38	E-239
Perricelli, Claire		W-38	E-239
Perry, Jean		W-38	E-239
Perry, Jim		W-38	E-239
Perry, Karen		W-38	E-239
Perry, Marie		W-38	E-239
Perry, Theresa		W-38	E-239
Perryman, Pamela		W-38	E-239
Petermann, Janet		W-38	E-239
Peters, Barbara		W-38	E-239
Peters, Holly		W-47	E-249
Peters, Jean		W-38	E-239
Peters, Priscilla		W-38	E-239
Petersen, Garrine		W-38	E-239
Peterson, Dale		W-38	E-239
Peterson, David		W-38	E-239
Peterson, Davin		W-38	E-239
Peterson, Kim		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Peterson, Nancy		W-38	E-239
Peterson, Pamela		W-38	E-239
Peterson, Stanley		W-38	E-239
Petitt, Denis		W-38	E-239
Petkiewicz, Jim		W-38	E-239
Petkiewicz, Margaret T.M.		W-38	E-239
Petrulias, Linda		W-38	E-239
Petteway, Sue		W-38	E-239
Pettey, Marvin		W-38	E-239
Pettis, Carolyn		W-38	E-239
Petty, Robert		W-38	E-239
Petzak, Jamaka		W-38	E-239
Peugh, Jim		W-38	E-239
Peyton, Tracy		W-38	E-239
Pham, John		W-38	E-239
Phelan, Linda		W-38	E-239
Phenix, Lisa		W-38	E-239
Phillips, Alma		W-38	E-239
Phillips, Bob		W-38	E-239
Phillips, Jim		W-38	E-239
Phillips, Kimberly		W-38	E-239
Phillips, Martyn		W-38	E-239
Phillips, Tanya		W-38	E-239
Picciani, Laureen		W-38	E-239
Picker, Seth		W-38	E-239
Picot, J.B.		W-38	E-239
Piediscalzzi, Janelle		W-38	E-239
Pilant, Cheri		W-38	E-239
Pilsl, Dawn		W-38	E-239
Pinard, Zac		W-38	E-239
Pincetich, Christopher		W-38	E-239
Pine, Karin		W-38	E-239
Pineda, Rene		W-38	E-239
Pinque, Meryl		W-38	E-239
Piotrowski, Karen		W-38	E-239
Pipkin, Mary		W-38	E-239
Piquett, L.		W-38	E-239
Pirch, Charlotte		W-38	E-239
Pisani, Maureen		W-38	E-239
Pisano, David		W-38	E-239
Pisharody, Mohanan		W-38	E-239
Piszczek, Barbara		W-38	E-239
Pitesky, Sheldon & Shirl		W-38	E-239
Pitman, Tom		W-38	E-239
Pittman, Casey		W-38	E-239
Pizzo, J		W-38	E-239
Plante, Douglas		W-38	E-239
Platter-Rieger, Mary F		W-38	E-239
Plon, Edward		W-38	E-239
Pogorzelski, Stacey		W-38	E-239
Pointer, Nancy		W-38	E-239
Poland, Barbara		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Polansky, Debra		W-38	E-239
Polick, Melissa		W-38	E-239
Polifroni, Josephine		W-38	E-239
Polito, Nancy		W-38	E-239
Pollak, Jeannie		W-38	E-239
Polletta, Kathleen		W-38	E-239
Pollock, Jeri		W-38	E-239
Polumbo, Randy		W-38	E-239
Pomies, Jackie		W-38	E-239
Poncia, Beverly		W-38	E-239
Pond, Christopher		W-38	E-239
Ponsford, Sharon		W-38	E-239
Poole, Cindy		W-38	E-239
Poole, Patricia		W-38	E-239
Popchak, Richard		W-38	E-239
Popoff, Kathy		W-38	E-239
Poppe, Donnal		W-38	E-239
Porri, Barbara		W-38	E-239
Porter, Cody		W-38	E-239
Porter, Joelle		W-38	E-239
Porter, Maryanne		W-38	E-239
Posner, Jessica Jean		W-38	E-239
Potter, Penny		W-38	E-239
Potter, Rosemary		W-38	E-239
Powell, Elizabeth		W-38	E-239
Powell, Kathleen		W-38	E-239
Powell, MWileyr		W-38	E-239
Prada, Francesca		W-38	E-239
Prasad, Kamal		W-38	E-239
Prendiville, Jerami		W-38	E-239
Preston, Lynne		W-38	E-239
Price, David		W-38	E-239
Price, Ian		W-38	E-239
Price, Jay		W-38	E-239
Price, Jeanette		W-38	E-239
Price, Linda		W-38	E-239
Price, Mary		W-38	E-239
Price, Nena		W-38	E-239
Price, Ron		W-38	E-239
Priebe, Matthew		W-38	E-239
Prince, Katherine		W-38	E-239
Pringle, Michi		W-38	E-239
Priskich, Fiona		W-38	E-239
Pritchard, Roger		W-38	E-239
Prochazka, Penelope		W-38	E-239
Procsal, Nancy		W-38	E-239
Profant, Michelle		W-38	E-239
Prola, Hons. Jim and Diana C		W-38	E-239
Proteau, Mary		W-38	E-239
Provenzano, James		W-38	E-239
Prsha, Rebecca		W-38	E-239
Pruiett, Megan		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Psota, Sunny		W-38	E-239
Psyllos, Eleni		W-38	E-239
Ptucha, Gregory		W-38	E-239
Puaoi, Richard		W-38	E-239
Puelicher, Trent		W-38	E-239
Pueschel, Laurie		W-38	E-239
Pydeski, Linda		W-38	E-239
Pyne, Elsa		W-38	E-239
Pynn, Matthew		W-38	E-239
Pynn, Steven		W-38	E-239
Quarrick, Robert		W-38	E-239
Quast, Deborah		W-38	E-239
Quick, Jennifer		W-38	E-239
Quigley, April		W-38	E-239
Quijano, Wendy		W-38	E-239
Quinn, Dan		W-38	E-239
Quinn, Hazel		W-38	E-239
Quinn, Holly		W-38	E-239
Quinn, Jerri		W-38	E-239
Quinn, Mike		W-38	E-239
Quintana, Pilar		W-38	E-239
Quiroba, Marta		W-38	E-239
R, K		W-38	E-239
R, Kristen		W-38	E-239
R, V		W-38	E-239
R., Katy		W-38	E-239
Racano, Joey		W-38	E-239
Raible, Annette		W-38	E-239
Raite, Sarah		W-38	E-239
Rakestraw, Sandra		W-38	E-239
Ralph, Bill		W-38	E-239
Ramboldt, Karen		W-38	E-239
Ramirez, Andy		W-38	E-239
Ramirez, Concepcion		W-38	E-239
Ramirez, Jessica		W-38	E-239
Ramirez, Raymond		W-38	E-239
Ramon, Alberto		W-38	E-239
Ramseur, Rickey		W-38	E-239
Ramsey, Elizabeth		W-38	E-239
Ramsey, Walter		W-38	E-239
Ramstrom, Shirley		W-38	E-239
Rand, Sherry		W-38	E-239
Randall, Kenneth		W-38	E-239
Randall, Phillip		W-38	E-239
Randolph, Sheri		W-38	E-239
Rangel, Louise		W-38	E-239
Rankin, Emily		W-38	E-239
Ranne, Valerie		W-38	E-239
Ransome, Anna		W-38	E-239
Ranz, Lauren		W-38	E-239
Rao-Soni, Kanchana		W-38	E-239
Raphael, Joan		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Rasmussen, Laura		W-38	E-239
Ratcliff, Charline		W-38	E-239
Raum, Silvia		W-38	E-239
Rauschenberg, Dan		W-38	E-239
Rausis, Maria		W-38	E-239
Rawlings, Suzanne		W-38	E-239
Ray, Carol		W-38	E-239
Ray, Dorothy		W-38	E-239
Ray, Elena		W-38	E-239
Ray, Susan		W-38	E-239
Raygoza, Carolyn		W-38	E-239
Raynaud, Deborah		W-38	E-239
Razo, Joseph		W-38	E-239
Razzano, Larry		W-38	E-239
Read, Sherri		W-38	E-239
Readey, Leigh		W-38	E-239
Reagle, Cheryl		W-38	E-239
Rearden, Chance		W-38	E-239
Reback, Mark		W-38	E-239
Rebello, Stephen		W-38	E-239
Rebelo, Tanya		W-38	E-239
Rebson, Daniel		W-38	E-239
Redden, Denise		W-38	E-239
Redgrave, Laura		W-38	E-239
Rediger, Ron		W-38	E-239
Redish, Maryellen		W-38	E-239
Redwing, Liz		W-38	E-239
Reece, Maryann		W-38	E-239
Reed, Dirk		W-38	E-239
Reed, Gordon		W-38	E-239
Reed, Robert		W-38	E-239
Reed, Robert M/Carol		W-38	E-239
Reed, Rodger		W-38	E-239
Reel, Joseph		W-38	E-239
Rees, Beth		W-38	E-239
Rees, Brenda		W-38	E-239
Reese, Gary		W-38	E-239
Reeves, Lenore		W-38	E-239
Rego, James		W-38	E-239
Rego, Jeffrey		W-38	E-239
Reibstein, Karen		W-38	E-239
Reid, Elizabeth		W-38	E-239
Reid, Karen		W-38	E-239
Reiff, Cheryl		W-38	E-239
Reilly, Linda		W-38	E-239
Reingold, Robert		W-38	E-239
Reinhart, Robin		W-38	E-239
Remy, Casey Jo		W-38	E-239
Rennacker, Ann		W-38	E-239
Rennie, Edwyna		W-38	E-239
Renton, Kristen		W-38	E-239
Resico, Neil		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Resnick, Ronald		W-38	E-239
Ressler, Diana		W-38	E-239
Ressler, Ph.D., John		W-38	E-239
Rettinghouse, Theresa		W-38	E-239
Reuscher, F.Carlene		W-38	E-239
Reynolds, Andrea		W-38	E-239
Reynolds, Lloyd		W-38	E-239
Rhee, Nancy		W-38	E-239
Rhodes, Janet		W-38	E-239
Riber, Genevieve		W-38	E-239
Ricca, Bonnie		W-38	E-239
Ricci, Mark		W-38	E-239
Rice, Alissa		W-25	E-160
Rice, Alissa		W-38	E-239
Rice, Jay		W-38	E-239
Richardson, Bob		W-38	E-239
Richman, Dr. Bruce		W-38	E-239
Richmond, Lonna		W-38	E-239
Ridder, Catherine		W-38	E-239
Ridder, Lynette		W-38	E-239
Ridenour, Linda L		W-38	E-239
Ridenour, Martin		W-38	E-239
Rider, Heather		W-38	E-239
Ridgway, Nelson		W-38	E-239
Riehart, Dale		W-38	E-239
Rifkind, Michael		W-38	E-239
Riggleman, Nancy		W-38	E-239
Riggs, Kristin		W-38	E-239
Riley, Nancy		W-38	E-239
Rincon, D.		W-38	E-239
Rinne, Fred		W-38	E-239
Rios, Susan		W-38	E-239
Ripley, Paul		W-38	E-239
Riser, Marianna		W-38	E-239
Riser, Michael		W-38	E-239
Riskin, Ron		W-38	E-239
Risso, Alisa		W-38	E-239
Ritts, Cierna		W-38	E-239
Rivera, Javier		W-38	E-239
Rivera, Scarlet		W-38	E-239
Robbins, Richard		W-38	E-239
Roberto, Rob		W-38	E-239
Roberts, Gail		W-38	E-239
Roberts, Jacquelyn		W-38	E-239
Roberts, Les		W-38	E-239
Roberts, Sue		W-38	E-239
Robeson, Teresa		W-38	E-239
Robey, Steve		W-38	E-239
Robin, Georgette		W-38	E-239
Robins, Arlin		W-38	E-239
Robinson, Amy		W-38	E-239
Robinson, Cheri		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Robinson, Janet.		W-38	E-239
Robinson, Jessica		W-38	E-239
Robinson, Joyce		W-38	E-239
Robinson, Juneko		W-38	E-239
Robinson, Kate		W-38	E-239
Robinson, Kelley		W-38	E-239
Robinson, Laura		W-38	E-239
Robinson, Lee		W-38	E-239
Robinson, Lisa		W-38	E-239
Robinson, Mary		W-38	E-239
Robinson, Michael		W-38	E-239
Robinson, Trish		W-38	E-239
Robles, Lisa		W-38	E-239
Rocha, Candace		W-38	E-239
Rocha, Nes		W-38	E-239
Roche, Maureen		W-55	E-257
Rockwell, Susan		W-38	E-239
Rodefer, Terrell		W-38	E-239
Rodgers, Diana		W-38	E-239
Rodin, Nick		W-38	E-239
Rodriguez, Joseph		W-38	E-239
Rodriguez, Linda J		W-38	E-239
Rodriguez, Regina		W-38	E-239
Rodriguez, Robin		W-38	E-239
Rodriguez, Susan		W-38	E-239
Rodriguez, Wilfredo		W-38	E-239
Rogers, Hilary		W-38	E-239
Rogers, Jolene		W-38	E-239
Rogers, Lilith		W-38	E-239
Rogers, Matthew		W-38	E-239
Rogers, Pamela		W-38	E-239
Rogie, Barbara		W-38	E-239
Rohrbaugh, Stacey		W-38	E-239
Rojeski, Mary		W-38	E-239
Roland, Raymie		W-38	E-239
Rolbeck, Mike		W-38	E-239
Rollens, Jack		W-38	E-239
Rolley, Dennis		W-38	E-239
Rollins, Kathryn		W-38	E-239
Rolliso, Sheri		W-38	E-239
Roma, Michele		W-38	E-239
Romanek, Mary		W-38	E-239
Romani, Gwen		W-38	E-239
Romero, Cesar		W-38	E-239
Romero, Valerie		W-38	E-239
Romine, LLoyd		W-38	E-239
Romo, Roberto		W-38	E-239
Roncalli, LD		W-38	E-239
Roo, Reeta		W-38	E-239
Roos, Anne		W-38	E-239
Roos, Irene		W-38	E-239
Root, Charlene		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Rorie, Stephanie		W-38	E-239
Rose, Colleen		W-38	E-239
Rose, Donna		W-38	E-239
Rose, Julie		W-38	E-239
Rose, Sheryl		W-38	E-239
Rosen, Bryan		W-38	E-239
Rosenberg, Bob		W-38	E-239
Rosenblatt, Roy		W-38	E-239
Rosenblood, Jamie		W-38	E-239
Rosenblum, Stephen		W-38	E-239
Rosenstein, Carolyn and Richard		W-38	E-239
Rosenzweig, Shani		W-38	E-239
Rosoff, Monica		W-38	E-239
Ross, David		W-38	E-239
Ross, Laura		W-20	E-155
Rossi, Mary		W-38	E-239
Rosvall, Kathie		W-38	E-239
Rotcher, Michael		W-38	E-239
Roth, Mimi		W-38	E-239
Roth, Steve		W-38	E-239
Rouhizadeh, Dariush		W-38	E-239
Rounds, Mary Lynn		W-38	E-239
Routh, Mimi		W-38	E-239
Rowe, D.		W-38	E-239
Rowe, Erin		W-38	E-239
Rowlison, R.N., Suellen		W-38	E-239
Roy, Hildy		W-38	E-239
Royer, Allen		W-38	E-239
Rozee, Patricia		W-38	E-239
Rozsa, Mary Anne		W-38	E-239
Ruane, Catherine		W-38	E-239
Rubalcava, Angelic		W-38	E-239
Rubel, Scott		W-38	E-239
Rubero, Nicole		W-38	E-239
Rubin, Gene		W-38	E-239
Rubin, J		W-38	E-239
Rubin, Vicky		W-38	E-239
Rubino, Vincent		W-38	E-239
Rudin, Lee		W-38	E-239
Rudley, Lawren		W-38	E-239
Rudner, Patricia		W-38	E-239
Rudnicki, Mother Susan		W-38	E-239
Ruff, Bryan		W-38	E-239
Ruffolo, Marc		W-38	E-239
Ruggles, Jo		W-38	E-239
Ruiz, George		W-38	E-239
Ruiz, Sylvia		W-38	E-239
Ruiz-Murillo, Tiffany		W-38	E-239
Rumford, Syd		W-38	E-239
Runion, Paul		W-38	E-239
Running, Sandra		W-38	E-239
Rusiniak, Karen		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Russell, Dr. M.K.		W-38	E-239
Russell, Jennifer		W-38	E-239
Russell, Robin		W-38	E-239
Russi, Terry		W-38	E-239
Russo, Carl		W-38	E-239
Russo, Robert		W-38	E-239
Ruth, Maraiel		W-38	E-239
Rutkin, Brian		W-38	E-239
Rutledge, Steve		W-38	E-239
Ruwe, Ben		W-38	E-239
Ryan, Therese		W-38	E-239
Ryba, Dominique		W-38	E-239
Rye, Faye		W-38	E-239
Rymalowicz, Gina		W-38	E-239
Ryzner, Joanne		W-38	E-239
S, C		W-38	E-239
S, K		W-38	E-239
S, R		W-38	E-239
S., Ron		W-38	E-239
S.C., Terry		W-38	E-239
Sabatini, Kathy		W-38	E-239
Sabin, Carolyn		W-38	E-239
Sacco, David		W-38	E-239
Sachs, Nikki		W-38	E-239
Sacks, Stephen		W-38	E-239
Sahhar, D		W-38	E-239
Saikley, Scott		W-38	E-239
Saint-Marie, Mary		W-38	E-239
Saito, Mariko		W-38	E-239
Saitta, Martin		W-38	E-239
Salas, Jan		W-38	E-239
Salatino, Freda		W-38	E-239
Salazar, Alicia		W-38	E-239
Salazar, Mila		W-38	E-239
Salcido, Debra		W-38	E-239
Salet, Nora		W-38	E-239
Salgado, Natasha		W-38	E-239
Sall, Claudia		W-38	E-239
Salm, Otto		W-38	E-239
Salmeron, Marjorie		W-38	E-239
Salomone, Philip		W-38	E-239
Salonius, Chris		W-38	E-239
Saltzer, Bruce		W-38	E-239
Salum, Cathy		W-38	E-239
Salvo, Dennis		W-38	E-239
Samii, Barbara		W-38	E-239
Sammons, Lanier		W-38	E-239
Sams, Jennifer		W-38	E-239
Samson, Patricia		W-38	E-239
San Miguel, Pamela		W-38	E-239
Sanborn, Heidi		W-38	E-239
Sanchez, Alex		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Sanchez, Antoinette		W-38	E-239
Sanchez, Kristina		W-38	E-239
Sanchez, Laura		W-38	E-239
Sanchez, Ralph		W-38	E-239
Sanchez, Sergi S.		W-38	E-239
Sandel, Petrea		W-38	E-239
Sanders, Jan		W-38	E-239
Sanders, M		W-38	E-239
Sanders, Robert		W-38	E-239
Sandoval, Judith		W-38	E-239
Sandoval, Lily		W-38	E-239
Sandoval, Linda		W-38	E-239
Sandow, B		W-38	E-239
Sandulovic , Desanka		W-38	E-239
Sanfilippo, Gina		W-38	E-239
Sanford, Karen		W-38	E-239
Sanford, Ken		W-38	E-239
Sangster, Carol		W-38	E-239
Santana, Kathryn		W-38	E-239
Santana, Yesenia		W-38	E-239
Santaniello, Deirdre		W-38	E-239
Santiago, Beverley		W-38	E-239
Santillo, Gloria		W-38	E-239
Santorumn, Jane		W-38	E-239
Santos, Lori		W-38	E-239
Sarabia, Michael		W-38	E-239
Saravanja, Natasha		W-38	E-239
Sargent, Deborah		W-38	E-239
Sarnecki, Vicki		W-38	E-239
Sasaoka, Julie		W-38	E-239
Sasser, Cathi		W-38	E-239
Sato, Nancy		W-38	E-239
Saunders, Leigh		W-38	E-239
Savage, Alice		W-38	E-239
Savage, Marjorie		W-38	E-239
Savage, Patricia		W-38	E-239
Saxty, Jillian		W-38	E-239
Saylor, Loralei		W-38	E-239
Scarpati, Rodolfo		W-38	E-239
Schader, Kevin		W-38	E-239
Schad-Siebert, Simone		W-38	E-239
Schafer, Dale		W-38	E-239
Schaffer, Carol		W-38	E-239
Schalbe, Susan		W-38	E-239
Schamach, Michelle		W-38	E-239
Schear, Roberta		W-38	E-239
Schedler, Ginger		W-38	E-239
Schenck, Alan		W-38	E-239
Scherzer, Teresa		W-38	E-239
Schick, Laurie		W-38	E-239
Schiffman, Lauren		W-38	E-239
Schiffman, Rebecca		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Schildhaus, Arnold		W-38	E-239
Schilling, Christy		W-38	E-239
Schimmel, Nancy		W-38	E-239
Schmeder, Nadya		W-38	E-239
Schmelzer, Marcia		W-38	E-239
Schmidt, Christina		W-38	E-239
Schmidt, Diana		W-38	E-239
Schmidtke, Suzanne		W-38	E-239
Schmitt, Richard		W-38	E-239
Schmitz, Heidi		W-38	E-239
Schmutz, Suzanne		W-38	E-239
Schneebeli, Christiane		W-38	E-239
Schneider, Gloria		W-38	E-239
Schneider, Ken		W-38	E-239
Schneider, Michelle		W-38	E-239
Schneider, Ryan		W-38	E-239
Schneider, Sharon		W-38	E-239
Schnele, Shannon		W-38	E-239
Schnitman, Tami		W-38	E-239
Schoenem, Carl		W-38	E-239
Schofield, Annna		W-38	E-239
Scholl, Sidney		W-38	E-239
Schreier, Bryna		W-38	E-239
Schroeder, Marie		W-38	E-239
Schulman, Linda		W-38	E-239
Schulsinger, Herb		W-38	E-239
Schultz, Judy		W-38	E-239
Schultz, Michael		W-38	E-239
Schumacher, Jonathon		W-38	E-239
Schuster, Dora		W-38	E-239
Schuster, Jeanne		W-38	E-239
Schwaller, Greg and Laurie		W-38	E-239
Schwander, Coralie		W-38	E-239
Schwartz, Alan		W-38	E-239
Schwartz, Angela		W-38	E-239
Schwartz, Barry		W-38	E-239
Schwartz, Joyce		W-38	E-239
Schwarz, Axel		W-38	E-239
Schweickart, Diana		W-38	E-239
Scibetta, Kimberly		W-38	E-239
Scileppi, Jade		W-38	E-239
Scobey, Richard		W-38	E-239
Scofield, Synthia		W-38	E-239
Scott, Andy		W-38	E-239
Scott, Barbara		W-38	E-239
Scott, Catherine		W-38	E-239
Scott, Celia		W-38	E-239
Scott, J. David		W-38	E-239
Scott, Joan		W-38	E-239
Scott, Johanna		W-38	E-239
Scott, Laurel		W-38	E-239
Scott, Lynndi		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Scott, Nadine		W-38	E-239
Scott, Pamela		W-38	E-239
Scott, Sherri		W-38	E-239
Scotti, O. Bisogno		W-38	E-239
Seaman, Dr. Gerda		W-38	E-239
Seaton, Chris		W-38	E-239
Seay, Stephanie		W-38	E-239
Sebanc, Susan		W-38	E-239
Seccombe, Ann		W-38	E-239
Sedonne, Tina		W-38	E-239
Seeberg, Karen		W-38	E-239
Seely, Clover		W-38	E-239
Sefton, Gloria		W-38	E-239
Sefton, John		W-38	E-239
Segal, Ellen		W-38	E-239
Seil, Fredrick		W-38	E-239
Selig, Bert		W-38	E-239
Sellon, Kim		W-38	E-239
Selter, Carol		W-38	E-239
Seltzer, Rob		W-38	E-239
Selverston, Sylvia		W-38	E-239
Sena, Patrice		W-38	E-239
Seneff, Carol		W-38	E-239
Senegal, Aaron		W-38	E-239
Senour, Jon		W-38	E-239
Sepulveda, Christine		W-38	E-239
Sernel, Elliott		W-38	E-239
Serrano, Lorena		W-38	E-239
Sexton, Sara		W-38	E-239
Sfeir, Lisa		W-38	E-239
Shadle, Linda		W-38	E-239
Shadout, Amelie		W-38	E-239
Shah-Rais, Mariam		W-38	E-239
Shaia, Gerald		W-38	E-239
Shanker, Gopal		W-38	E-239
Shanks, John		W-38	E-239
Shapira, Susan		W-38	E-239
Shapiro, Dave		W-38	E-239
Shapiro, Tobie		W-38	E-239
Sharee, Donna		W-38	E-239
Sharma, Babara		W-38	E-239
Sharp, Peggy		W-38	E-239
Shaver, Tammy		W-38	E-239
Shaw, Donna		W-38	E-239
Shaw, Marianne		W-38	E-239
Shaw, Phyllis		W-38	E-239
Shaw, Sylvia		W-38	E-239
Shea, Joan		W-38	E-239
Shecter, Kathleen		W-38	E-239
Sheehan, IL		W-38	E-239
Sheehey, Alison		W-41	E-243
Sheen, Veena		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Sheets, Gabriel		W-38	E-239
Sheflin, Kelli		W-38	E-239
Shelton, Donna		W-38	E-239
Shemberg, Bea		W-38	E-239
Shen, Elizabeth		W-38	E-239
Sheng, CG		W-38	E-239
Shepherd, Carol		W-38	E-239
Shepherd, Jason		W-38	E-239
Sheppard, Sheila		W-38	E-239
Sheppard, Timothy		W-38	E-239
Sher, Jennie		W-38	E-239
Sherback, Harvey		W-38	E-239
Sherman, Beverly		W-38	E-239
Sherman, David		W-38	E-239
Sherman, Jesse		W-38	E-239
Sherrill, T		W-38	E-239
Shibuya, Whitney		W-38	E-239
Shields, Marlie		W-38	E-239
Shiels, Laurie		W-38	E-239
Shiels, Theresa		W-38	E-239
Shine, Donna		W-38	E-239
Shippen, Peggy		W-38	E-239
Shirley, Bonnie		W-38	E-239
Shively, Judy		W-38	E-239
Shoemaker, Herb		W-38	E-239
Shoham, Amit		W-38	E-239
Shomer, Clare		W-38	E-239
Shoopman, Denise		W-38	E-239
Shore, Elizabeth Myrin		W-38	E-239
Shovlain, Alison		W-38	E-239
Shubert, Lois		W-38	E-239
Shumaker, Anita		W-38	E-239
Shuman, Todd		W-38	E-239
Shurter, Anna		W-38	E-239
Shuster, Marguerite		W-38	E-239
Siboldi, Carmela		W-38	E-239
Sidbury, Mercy		W-38	E-239
Siegmann, Eric		W-38	E-239
Sigler, Teri		W-38	E-239
Siimmons, Nicole		W-38	E-239
Silberberg, Martin		W-38	E-239
Silen, Stephan		W-38	E-239
Silen, Stephanie		W-38	E-239
Silkiss, Vicki		W-38	E-239
Sills, Alma		W-38	E-239
Silva, Cindy		W-38	E-239
Silva, Fernanda		W-38	E-239
Silva, Jessica		W-38	E-239
Silver, Chad		W-38	E-239
Silver, Dr Dan		W-38	E-239
Silver, Jack		W-38	E-239
Silver, Jon		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Silvernale, Dana		W-38	E-239
Siminski, Julian		W-38	E-239
Simmons, Johanna		W-38	E-239
Simms, Twikie		W-38	E-239
Simon, Nancy		W-38	E-239
Simonich, Claire		W-38	E-239
Simonis, Allison		W-38	E-239
Simons, Jesse		W-38	E-239
Simpson, Theresa		W-38	E-239
Sims, Bruce		W-38	E-239
Sinclair, Jean		W-38	E-239
Sines, Charlotte		W-38	E-239
Sinfuego, Ruth		W-38	E-239
Singh-Bowman, Nan		W-38	E-239
Singleton, Mark		W-38	E-239
Sirias, Christine		W-38	E-239
Sitnick, Joan		W-38	E-239
Skaldin, Pavel		W-38	E-239
Skei, Ingrid		W-38	E-239
Skillett, Ardis		W-38	E-239
Skinner, Terry		W-38	E-239
Skopek, Judy		W-38	E-239
Skorheim, Linda		W-38	E-239
Sky, Jude		W-38	E-239
Slauson, Kevin		W-38	E-239
Sletteland, Holly		W-38	E-239
Sletteland, Trygve		W-38	E-239
Sloane, Hilary		W-38	E-239
Small, Barbara		W-38	E-239
Smalley, Shawn		W-38	E-239
Smalls, Loretta		W-38	E-239
Smiddy, Terra		W-38	E-239
Smith, Carla		W-38	E-239
Smith, Charles		W-38	E-239
Smith, Cristina		W-38	E-239
Smith, Deborah		W-38	E-239
Smith, Diane		W-38	E-239
Smith, Dmitra		W-38	E-239
Smith, Douglas		W-40	E-242
Smith, Eric		W-38	E-239
Smith, Evan		W-38	E-239
Smith, Hillary		W-38	E-239
Smith, Indira		W-38	E-239
Smith, Joan		W-38	E-239
Smith, Judith		W-38	E-239
Smith, Kate		W-38	E-239
Smith, Larry		W-38	E-239
Smith, LaToya		W-38	E-239
Smith, Leslie		W-38	E-239
Smith, Linda L		W-38	E-239
Smith, Marci		W-38	E-239
Smith, Marietta		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Smith, Nina		W-38	E-239
Smith, Philip		W-38	E-239
Smith, S		W-38	E-239
Smith, Sally		W-38	E-239
Smith, Wendy		W-38	E-239
Smolen, Michele		W-38	E-239
Smrz, Penelope		W-38	E-239
Snavely, Irene		W-38	E-239
Snively, Margaret		W-38	E-239
Snyder, Carlanne		W-38	E-239
Snyder, Joanne		W-38	E-239
Snyder, Susan		W-38	E-239
Soares, David		W-38	E-239
Soares, Faye		W-38	E-239
Sobo, Naomi		W-38	E-239
Sodhi, Johnny		W-38	E-239
Soldate, Judy		W-38	E-239
Solomon, David		W-38	E-239
Solomon, Richard		W-38	E-239
Soloway, Russell		W-38	E-239
Somine, Josho		W-38	E-239
Sonoquie, Executive Direct Monique		W-38	E-239
Sootoo, Margret		W-38	E-239
Sorel, Robert		W-38	E-239
Sorensen, Lenore		W-38	E-239
Sorensen, Marie		W-38	E-239
Soria, Gloria		W-38	E-239
Sosa, Eliza		W-38	E-239
Soto, David		W-38	E-239
Soto, Edy G		W-38	E-239
Soto, Robert		W-38	E-239
Soto-Enriquez, Jorge		W-38	E-239
Souza, Mike		W-38	E-239
Sowle, Ohmar		W-38	E-239
Spaanstra, Thea		W-38	E-239
Spain, Nikayla		W-38	E-239
Spake, Ann and Gene		W-38	E-239
Spake, Colin		W-38	E-239
Spake, Kiea		W-38	E-239
Spangler, Melissa		W-38	E-239
Spanski, Linda		W-38	E-239
Sparks, Daryl		W-38	E-239
Sparks, Jacquelene		W-38	E-239
Sparks, Rick		W-38	E-239
Spautz, Laura		W-38	E-239
Spencer, Brent		W-38	E-239
Spencer, D R		W-38	E-239
Spencer, Gayle		W-38	E-239
Spencer, Ray W		W-38	E-239
Spenger, Constance		W-38	E-239
Spiers, Stephanie		W-38	E-239
Spini, Jane		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Spinner, Lawrence		W-38	E-239
Spitler, Judy		W-38	E-239
Spittler, Nancy		W-38	E-239
Spoon, Leslie		W-38	E-239
Spotts, James		W-38	E-239
Spotts, Richard		W-38	E-239
Spotts, Robert		W-38	E-239
Springer, Sarah		W-38	E-239
Springstead, Wendy		W-38	E-239
Spurlock, Katie		W-38	E-239
Squires, Joan		W-38	E-239
St. Angelo, R.M.		W-38	E-239
St. John, Lynne		W-38	E-239
St.Pierre, Dennis		W-38	E-239
Stack, Ken		W-38	E-239
Stack, Rick		W-38	E-239
Stade, Kirsten		W-38	E-239
Stahl, Cathy		W-38	E-239
Staib, Bettina		W-38	E-239
Stamos, Rebecca		W-38	E-239
Stanovich, Karen		W-38	E-239
Stansell, Cathy		W-38	E-239
Stansfield, Lesley		W-38	E-239
Starick, Inna		W-38	E-239
Stark, Diana		W-38	E-239
Stark, Jan		W-38	E-239
Starks, Leslie		W-38	E-239
Stassinos, Jill		W-38	E-239
Stayton, Lori		W-38	E-239
Stebbings, Barrie		W-38	E-239
Steele, Karen		W-38	E-239
Steele, Mary C		W-38	E-239
Steeves, Charleen		W-38	E-239
Stefan, Mirella		W-38	E-239
Steffen, Maria		W-38	E-239
Steffes, Susan		W-38	E-239
Steiger, Bonnie		W-38	E-239
Stein, Cindy		W-38	E-239
Stein, Julie		W-38	E-239
Stein, Ken		W-38	E-239
Steinberg, Roxanne		W-38	E-239
Steinberger, M.A.		W-38	E-239
Steinbruecker, Richard		W-28	E-163
Steiner, Neal		W-38	E-239
Steinhart, Judith		W-38	E-239
Steininger, Lorenz		W-38	E-239
Steloff, Andrea		W-38	E-239
Stelzer, Samantha		W-38	E-239
Stephan, Dorothea		W-38	E-239
Stephens, Chandra		W-38	E-239
Steponaitis, John		W-38	E-239
Sterling, Kaylah		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Stern, Roberta		W-38	E-239
Steuck, Greg		W-38	E-239
Steudle, Robin		W-38	E-239
Stevens, Kim		W-38	E-239
Stevens, Ssarah		W-38	E-239
Stevenson, Martin		W-38	E-239
Stevenson, William		W-38	E-239
Stewart, Dr. Christine		W-38	E-239
Stewart, Jeffrey		W-38	E-239
Stewart, Jenny		W-38	E-239
Stewart, John		W-38	E-239
Stewart, Katie		W-38	E-239
Stewart, Linda		W-38	E-239
Stewart, Michele		W-38	E-239
Stewart, Ph.D., Glenn R.		W-38	E-239
Stewart, Tishia		W-38	E-239
Stiles, Sarah		W-38	E-239
Stillwater, Bonnie		W-38	E-239
Stinchcomb, Julie		W-38	E-239
Stock, Ron		W-38	E-239
Stocking, Reginald		W-38	E-239
Stockton, Tamalyn		W-38	E-239
Stoelting, Ricka		W-38	E-239
Stoilov, Luben		W-38	E-239
Stoker, Laurie		W-38	E-239
Stokes, Denese		W-38	E-239
Stolte, Michael		W-38	E-239
Stoltman, Shelley		W-38	E-239
Stone, Jeffrey		W-38	E-239
Stonebraker, Francene		W-38	E-239
Stonebraker, Randy		W-38	E-239
Stonehawk, Mika		W-38	E-239
Strailey, Faith		W-38	E-239
Stranger, Kat		W-38	E-239
Strathman, Melissa		W-38	E-239
Stratman, Gerald		W-38	E-239
Straus, Eileen		W-38	E-239
Strayer, Rosa		W-38	E-239
Stricker, Michael		W-38	E-239
Stringfellow, Kim		W-38	E-239
Strobl, Kerstin		W-38	E-239
Strong, Ava		W-38	E-239
Struthers, Sue		W-38	E-239
Stuart, Toni		W-38	E-239
Stuart-Jennings, Erin		W-38	E-239
Stuckey, Julie		W-38	E-239
Stuckey, Marci		W-38	E-239
Stuhaan, Sandy		W-38	E-239
Sturken, Virginia		W-38	E-239
Stutzman, Jennifer		W-38	E-239
Succa-Ruston, Rene		W-38	E-239
Sugarman, Steve		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Sugerman, Ruth		W-38	E-239
Sullivan, Joan Paul & PJ		W-38	E-239
Sullivan, Sharon		W-38	E-239
Summers, Betsy		W-38	E-239
Summers, Jan		W-38	E-239
Summers, Susan		W-38	E-239
Sumner, Jeanne		W-38	E-239
Sumpter, Cortney		W-38	E-239
Sumpter, Michael		W-38	E-239
Sumrall, Amber Coverdale		W-38	E-239
Sunday, Walter		W-38	E-239
Sunderland, Melissa		W-38	E-239
Sunderman, Tim		W-38	E-239
Sunrise, Bruce		W-38	E-239
Sur, Penny		W-38	E-239
Sussek, Mark		W-38	E-239
Sutherland, George		W-38	E-239
Sutter, Lori		W-38	E-239
Sutton, Nadia		W-38	E-239
Suyehiro, Barbara		W-38	E-239
Suyenobu, Winona		W-38	E-239
Suzio, Francesca		W-38	E-239
Suzuki, T		W-38	E-239
Svendsen, Julie		W-38	E-239
Svidler, Mariano		W-38	E-239
Swan, Curtis		W-38	E-239
Swan, Shirley		W-38	E-239
Swan, Shirley		W-38	E-239
Swann, Eliza		W-38	E-239
Swanson, Rebecca		W-38	E-239
Swanson, Susan		W-38	E-239
Swart, Maria		W-38	E-239
Swick, Chelsea		W-38	E-239
Swift, Monica		W-38	E-239
Swords, Mardi		W-38	E-239
Swytak, Stephen		W-38	E-239
Sylvester, Angee		W-38	E-239
T, Leslie		W-38	E-239
T, Mandi		W-38	E-239
Tacker, Barbara		W-38	E-239
Tadler, Keith		W-38	E-239
Taft, Barry		W-38	E-239
Taggart, Kathleen		W-38	E-239
Tait, Ann		W-38	E-239
Takagi, Richard		W-38	E-239
Takaro, Mark		W-38	E-239
Takemoto, Joy		W-38	E-239
Takeya, Junko		W-38	E-239
Talamantes, Billie		W-38	E-239
Talbot, James C		W-38	E-239
Tamimi, Nawal		W-38	E-239
Tan, Ronald		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Tan, Shirley		W-38	E-239
Tancredi, Jessica		W-38	E-239
Tanghe, John		W-38	E-239
Tango, Romeo		W-38	E-239
Tao, Carol		W-38	E-239
Taratula, Alec		W-38	E-239
Tardy, Kathy		W-38	E-239
Tashima, Fred		W-38	E-239
Tate, Leslie		W-38	E-239
Tattu, Georgia		W-38	E-239
Tawil, Cynthis		W-38	E-239
Taylor, Curtis		W-38	E-239
Taylor, Donald		W-38	E-239
Taylor, Gregory		W-38	E-239
Taylor, J. Holley		W-38	E-239
Taylor, Jaime		W-38	E-239
Taylor, Jeremy		W-38	E-239
Taylor, Lila		W-38	E-239
Taylor, Michele		W-38	E-239
Taylor, Nancy		W-38	E-239
Taylor, Robert		W-38	E-239
Teer, Melissa		W-38	E-239
Tegland, Ormand		W-38	E-239
Tejeda, Cindy		W-38	E-239
Telles, Doris		W-38	E-239
Tempone, Antonio		W-38	E-239
Tenney, Amanda		W-38	E-239
Tenney, Joanne		W-38	E-239
Tepperman, Jean		W-38	E-239
Terhune, Anne		W-38	E-239
Terrones, Catherine		W-38	E-239
Terry, Michael		W-38	E-239
Terwilliger, Lesley		W-38	E-239
Tesluk, Dawn		W-38	E-239
Tessier, Elizabeth		W-38	E-239
Thayer, Jeff		W-38	E-239
Therry, Dennis		W-45	E-247
Thibodeau, David		W-38	E-239
Thielen, Joanne		W-38	E-239
Thilgen, Celia		W-38	E-239
Thollaug, Julia		W-38	E-239
Thomas, Carrie		W-38	E-239
Thomas, Cheryl		W-38	E-239
Thomas, Donna J.		W-38	E-239
Thomas, Eva		W-38	E-239
Thomas, Julia		W-38	E-239
Thomas, Mary		W-38	E-239
Thomas, Raye Lynn L		W-38	E-239
Thomas, Tracey		W-38	E-239
Thomason, Anita		W-38	E-239
Thompson, Brian		W-38	E-239
Thompson, Carol		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Thompson, Dr Lawrence H		W-38	E-239
Thompson, Jackie		W-38	E-239
Thompson, Pat		W-38	E-239
Thompson, Roberta		W-38	E-239
Thompson, Stephanie		W-38	E-239
Thorensen, Lynn		W-38	E-239
Thornhill, Robert		W-38	E-239
Thornton, Michael		W-38	E-239
Thornton, Tina		W-38	E-239
Thryft, Ann		W-38	E-239
Thurman, Sallie		W-38	E-239
Tibbetts, Deborah		W-38	E-239
Tichman, Nadya		W-38	E-239
Tidwell, Amber		W-38	E-239
Tierney, Cindy		W-38	E-239
Tiessen, Irvin		W-49	E-251
Till, Gabriela		W-38	E-239
Tillett, Paula		W-38	E-239
Tillson, Judy		W-38	E-239
Tintle, Bob		W-38	E-239
Tirri, Kathy		W-38	E-239
Titley, Ken		W-38	E-239
Tkaczyk, Catherine		W-38	E-239
Toby, Pat		W-38	E-239
Todd, Jude		W-38	E-239
Todd, Kalita		W-38	E-239
Todd, Zachary		W-38	E-239
Toledo, Chris		W-38	E-239
Tollner, Margaret		W-38	E-239
Tomanova, Lucia		W-38	E-239
Tomasello, Pela		W-38	E-239
Tomczyszyn, Michael		W-38	E-239
Tomlinson, Michael		W-38	E-239
Tomsky, Andy		W-38	E-239
Tondusson, Thierry		W-38	E-239
Toney, Kevin		W-38	E-239
Ton-Olshaskie, Thi		W-38	E-239
Toor, Manmeet		W-38	E-239
Topel, Natalie		W-38	E-239
Topping, M		W-38	E-239
Tor, Lynn		W-38	E-239
Tornabene, Michele		W-38	E-239
Tornatore, Marianne		W-38	E-239
Torres, Angelica		W-38	E-239
Torres, Cirena		W-38	E-239
Torres, Natalie		W-38	E-239
Torrisi, Sharon		W-38	E-239
Toth, Jennifer		W-38	E-239
Toth, Myra		W-38	E-239
Touchstone, Lana		W-38	E-239
Towns, Jessica		W-38	E-239
Townsend, Carlos		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Townsend, Sarah		W-38	E-239
Trager, Nevada		W-38	E-239
Tran, Dat		W-38	E-239
Tran, Kim		W-38	E-239
Traphagen, Myles B.	Solar Biology LLC	W-37	E-234
Trauger, Adam		W-38	E-239
Traum, Sandra		W-38	E-239
Trearse, Tami		W-38	E-239
Treharne, Paula		W-38	E-239
Trevillian, Linda		W-38	E-239
Trimm, Jeremy		W-38	E-239
Tripp, Martin		W-38	E-239
Trivisonno, Susan		W-38	E-239
Trottingolf, Kris		W-38	E-239
Trowsdale, Gavin		W-38	E-239
Trujillo, Laura		W-38	E-239
Truscott, Pam		W-38	E-239
Tsadeek, Shahar		W-38	E-239
Tsai, Kathy		W-38	E-239
Tubbs, Ellen		W-38	E-239
Tucay, Marlene		W-38	E-239
Tuckman, Roy		W-38	E-239
Tuff, Paul		W-38	E-239
Tupper, Steven		W-38	E-239
Turek, Gabriella		W-38	E-239
Turk, Laraine		W-38	E-239
Turley-Sinclair, Jean		W-38	E-239
Turlo, Joy		W-38	E-239
Turner, Tracy		W-38	E-239
Turnipseed, Dale		W-38	E-239
Turov, Ilya		W-38	E-239
Turrentine, Rogers		W-38	E-239
Tweedle, Harold & Roberta		W-38	E-239
Twombly, Glen A		W-38	E-239
Tworek, Christina		W-38	E-239
Tynes, Lin		W-38	E-239
Tyron, Erica		W-38	E-239
Tyson, Kathleen		W-38	E-239
Tzelil, Canan		W-38	E-239
Uchiyama, Catherine		W-38	E-239
Uhart, Judy		W-38	E-239
Umana, Lisa		W-38	E-239
Underwood, Julie		W-38	E-239
Urbain, Mireille		W-38	E-239
Usrey, Melissa		W-38	E-239
Ussini, Monique		W-38	E-239
Vairo, Sylvia		W-38	E-239
Valdez, Adela		W-38	E-239
Valdez, Joseph		W-38	E-239
Valdez, R		W-38	E-239
Valente, Juliette		W-38	E-239
Valentine, Karen		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Vallejo, Carol		W-38	E-239
Van Akin, Jackee		W-38	E-239
Van Asten, Michelle		W-38	E-239
Van Every, kathleen		W-38	E-239
Van Gils, Petrus		W-38	E-239
Van Hartesveldt, Patricia		W-38	E-239
Van Hise, James		W-38	E-239
Van Huizen, Danny		W-38	E-239
Van Oosten, Christina		W-38	E-239
Van Patten, Peggy		W-38	E-239
Van Pelt, Maia		W-38	E-239
Van Straalen, John		W-38	E-239
Van Tassell, Robin		W-38	E-239
van Thiel, Mathias		W-38	E-239
Van Wagner, Tom		W-38	E-239
Vance, Christian		W-38	E-239
Vancompernolle, Geert		W-38	E-239
Vandal, Lise		W-38	E-239
Vande Streek, Elizabeth		W-38	E-239
Vandeman, Mike		W-38	E-239
Vanderburg, Mariana		W-38	E-239
VanLuchem, Jillian		W-38	E-239
VanVliet, Nagisa		W-38	E-239
VanZeller, Teresa		W-38	E-239
Vardan, Charlotte		W-38	E-239
Varga, Professor of Acc John L		W-38	E-239
Vargas, Erika		W-38	E-239
Vargas, Vianey		W-38	E-239
Varnam, Jim		W-38	E-239
Varnum, Tammy		W-38	E-239
Vartnaw, Bill		W-38	E-239
Vasiliki, Georgikopoulou		W-38	E-239
Vasquez, Corey		W-38	E-239
Vaughan, Theresa		W-38	E-239
Vega, Veronica		W-38	E-239
Velez, Jorge		W-38	E-239
Venci, Kelly		W-38	E-239
Venezio, Glen		W-38	E-239
Venn, Gael		W-38	E-239
Ventura, Claudia		W-38	E-239
Ventura, Noemia		W-38	E-239
Verga, Enrico		W-38	E-239
Vergilia, Nadine		W-38	E-239
Vermeer, Shellie		W-38	E-239
Vesely, Kara		W-38	E-239
Vesper, Paul		W-38	E-239
Vest, Lori		W-38	E-239
Vezian, Marc		W-38	E-239
Viana, Mena		W-38	E-239
Vickers, Mike		W-24	E-159
Vidal, Catherine		W-38	E-239
Vieira, Barbara		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Vieira, Ed		W-38	E-239
Vierra, Aurora		W-38	E-239
Villalobos, Timothy		W-38	E-239
Villani, Seb		W-38	E-239
Vinney, Cynthia		W-38	E-239
Viscuso, Michelle		W-38	E-239
Viselli, Tim R		W-38	E-239
Viti, Natasha		W-38	E-239
Vito, Sandra		W-38	E-239
Vizel, Mikhail		W-38	E-239
Vlasiadis, Andreas		W-38	E-239
Vogel, Janny		W-38	E-239
Vogel, Todd		W-38	E-239
Vohra, Deepak		W-38	E-239
Voitzuk, Pablo		W-38	E-239
Volgamore, Katrina		W-38	E-239
Vollmer, Alex		W-38	E-239
von Abele, Melitta		W-38	E-239
Vonhoetzendorff, Ty		W-38	E-239
Voss, Isabel		W-38	E-239
Voss Rene		W-38	E-239
Voter, Citizen		W-38	E-239
Voyles, Tamara		W-38	E-239
Vreeland, Richard		W-38	E-239
Vu, Tung		W-38	E-239
Wade, Iain		W-38	E-239
Wade, Laura		W-38	E-239
Wager, Joan		W-38	E-239
Wagner, Elissa B		W-38	E-239
Wagner, Eva		W-38	E-239
Wahl, Elizabeth		W-38	E-239
Walas, Tom		W-38	E-239
Walden, Sue		W-38	E-239
Waldron, Lin		W-38	E-239
Walker, Craig		W-38	E-239
Walker, David		W-38	E-239
Walker, Donna		W-38	E-239
Walker, Joan		W-38	E-239
Walker, Sandra		W-38	E-239
Walker, Verla D		W-38	E-239
Wall, Michael & Stephanie		W-38	E-239
Wallace, Anne		W-38	E-239
Wallach, Aleta		W-38	E-239
Waller, Julia		W-38	E-239
Walsh, Constance		W-38	E-239
Walter, Doug		W-38	E-239
Walter, Judith M		W-38	E-239
Walters, Cody		W-38	E-239
Walters, Ernie		W-38	E-239
Walters, Kari		W-38	E-239
Walton, Betsy		W-38	E-239
Walton, John		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Wampole, Barbara		W-38	E-239
Wanamaker, Debra		W-38	E-239
Wang, Vivian		W-38	E-239
Waraner, Cathleen		W-38	E-239
Wardlaw, Lovie		W-38	E-239
Ware, Christopher		W-38	E-239
Wares, Tracy		W-38	E-239
Warner, Michelle		W-38	E-239
Warner, Susan		W-38	E-239
Warnhoff, Cathy		W-38	E-239
Warren, Rena		W-38	E-239
Warren, Ronald		W-38	E-239
Warshauer, David		W-38	E-239
Warwick, Scott		W-38	E-239
Warwick, Susan		W-38	E-239
Wasgatt, Ann		W-38	E-239
Washington, Akilah		W-38	E-239
Waters, Anie’		W-38	E-239
Waters, Sandra		W-38	E-239
Watola, Danuta		W-38	E-239
Watson, Donna		W-38	E-239
Watson, Joe		W-38	E-239
Watson, Kathleen		W-38	E-239
Watson, Michael R		W-38	E-239
Watt, Julie		W-38	E-239
Watters, Stephanie		W-38	E-239
Watts, Susan		W-38	E-239
Wayland, Sean		W-38	E-239
Weaver, Joan		W-38	E-239
Weaver, William		W-38	E-239
Webb, DDS (retired), Catherine		W-38	E-239
Webb, Sally & Don		W-38	E-239
Weeden, Noreen		W-38	E-239
Wei, Annie		W-38	E-239
Weibel, Annemarie		W-38	E-239
Weigel, Alice		W-38	E-239
Weikel, Wendy		W-38	E-239
Weil, Helene		W-38	E-239
Weill, Jennifer		W-38	E-239
Weimer, Karl		W-38	E-239
Weinberger, Mark S.		W-38	E-239
Weiner, Linda		W-38	E-239
Weiner, Nona		W-38	E-239
Weiner, Terry		W-38	E-239
Weinstein, Diane		W-38	E-239
Weinstein, Dr. Joseph		W-38	E-239
Weinstein, Garrett		W-38	E-239
Weis, Joe		W-38	E-239
Weisbrich, Jocelyn		W-38	E-239
Weiser, Charlotte		W-38	E-239
Weiske, Lynne		W-38	E-239
Weismuller, William		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Weiss, Arleen		W-38	E-239
Weiss, Christine		W-38	E-239
Weiss, Dean		W-38	E-239
Weiss, Gregory		W-38	E-239
Weiss, Kenny		W-38	E-239
Weissglass, Roberta		W-38	E-239
Weisz, Russell		W-38	E-239
Weitkamp, Margaret		W-38	E-239
Weitz, Stephen		W-38	E-239
Welch, Marilyn		W-38	E-239
Welch, Rebecca		W-38	E-239
Welles, Sandra		W-38	E-239
Welling, Jeannette		W-38	E-239
Wells, Jeff		W-38	E-239
Wells, R		W-38	E-239
Wendel, Tom		W-38	E-239
Wendell, John		W-38	E-239
Wenninger, Kristina		W-38	E-239
Wenrich, Kara		W-38	E-239
Wessels, Margaret		W-38	E-239
West, April		W-38	E-239
West, Karen		W-38	E-239
West, Lori		W-38	E-239
Westbrook, Janet		W-48	E-250
Westcott, Deborah		W-38	E-239
Wetsell, Courtney		W-38	E-239
Wetteland, Signe		W-38	E-239
Whaley, Richard		W-38	E-239
Whalley, Chris		W-38	E-239
Wheat, Amber		W-38	E-239
Wherrit, Thamar		W-38	E-239
Whetstine, Linda		W-38	E-239
Whipps, Nicholas		W-38	E-239
Whisenand, Gretchen		W-38	E-239
Whitaker, Howard		W-38	E-239
Whitaker, Melinda		W-38	E-239
White, Joseph		W-38	E-239
White, Lily		W-38	E-239
White, Lori		W-38	E-239
White, Michael		W-38	E-239
White, Mindi		W-38	E-239
White, Rebecca		W-38	E-239
White, Sally		W-38	E-239
White, Susan		W-38	E-239
Whitefeather, Angelica		W-38	E-239
Whitley, Linda		W-38	E-239
Whitney, Kim		W-38	E-239
Whitson, Andrea		W-38	E-239
Whitson, Helene		W-38	E-239
Whooley, Elaine		W-38	E-239
Whyman, Barbara		W-38	E-239
Wickham, Joan		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Widmer, Randy		W-38	E-239
Wieland, Chuck		W-38	E-239
Wiener, Mary		W-38	E-239
Wiese, Katherine		W-38	E-239
Wiesener, Monica		W-38	E-239
Wiesner, John		W-38	E-239
Wilber, Heather		W-38	E-239
Wilber, Stewart		W-38	E-239
Wilcox, Helena		W-38	E-239
Wilcox, Wandis		W-38	E-239
Wiley, Carol		W-38	E-239
Wiley, Kimberly		W-38	E-239
Wilhelm, Candace		W-38	E-239
Wilkerson, Gillian		W-38	E-239
Wilkerson, Jere		W-38	E-239
Wilkerson, Shelly		W-38	E-239
Wilkinson, Dorothy		W-38	E-239
Will, Jennifer		W-38	E-239
Williams, Cassandra		W-38	E-239
Williams, Judy		W-38	E-239
Williams, Sandra		W-38	E-239
Williams, Steve		W-38	E-239
Williams, Susan		W-51	E-253
Williams, Ted		W-38	E-239
Williamson, Aileen		W-38	E-239
Williamson, Debbie		W-38	E-239
Williamson, Shawn		W-38	E-239
Williamson, Susan		W-38	E-239
Willis, Sharman Saffier		W-38	E-239
Willis, William		W-38	E-239
Wilmes, Norm		W-38	E-239
Wilsey, Jennifer		W-38	E-239
Wilson, Brian		W-38	E-239
Wilson, Carol		W-38	E-239
Wilson, Charles		W-38	E-239
Wilson, Jim		W-38	E-239
Wilson, Kendra		W-38	E-239
Wilson, Mike		W-38	E-239
Wilson, Neil		W-38	E-239
Wilson, Tanya		W-38	E-239
Wilson, Traci		W-38	E-239
Winburn, William		W-38	E-239
Windrum, Ken		W-38	E-239
Winesberry, E		W-38	E-239
Winholtz, Betty		W-38	E-239
Winkler, Mark		W-38	E-239
Winnick, Joie		W-38	E-239
Winnisk, Karen		W-38	E-239
Winsberg, Susan		W-38	E-239
Winsor, Teresa		W-38	E-239
Winter, Diane		W-38	E-239
Winter, Nita		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Wisch, Anita		W-38	E-239
Withrow, Chris		W-38	E-239
Witt, Rose Ann		W-38	E-239
Wittl, Wendy		W-38	E-239
Wobus, Elizabeth Betsy		W-38	E-239
Wold, Susan		W-38	E-239
Wolf, David		W-38	E-239
Wolf, Janette		W-38	E-239
Wolf, Peter		W-38	E-239
Wolf, Rachel		W-38	E-239
Wolf, Shaye		W-38	E-239
Wolfberg, Amy		W-38	E-239
Wolfe, Cathy		W-38	E-239
Wolfe, Cynthia		W-38	E-239
Wolfe, Jessica		W-38	E-239
Wolfe, Jon-Paul		W-38	E-239
Wolff, Carmen		W-38	E-239
Wolfson, Toni A		W-38	E-239
Womack, Kristin		W-38	E-239
Womack, Thurston		W-38	E-239
Wong, Benjamin		W-38	E-239
Wood, Joyce		W-38	E-239
Wood, Principal Leslie		W-38	E-239
Wood, Susanne		W-38	E-239
Woodall, Sandra		W-38	E-239
Woodard, Jud		W-38	E-239
Woodard, Valeree		W-38	E-239
Woodbury, Ross		W-38	E-239
Woodcock, Charlene M		W-38	E-239
Woodford, Jill		W-38	E-239
Woodriff, Elaine I.		W-38	E-239
Woods, Enel		W-38	E-239
Woods, James L		W-38	E-239
Woods, Tansy		W-38	E-239
Woodside, Marvin		W-38	E-239
Woolford, Ronald		W-38	E-239
Worcester, Chris		W-38	E-239
Worley, Joseph		W-38	E-239
Woudstra, Gerrit		W-38	E-239
Wright, Dale		W-38	E-239
Wright, Edmund		W-38	E-239
Wright, Jr., Conrad		W-38	E-239
Wright, Katherine		W-38	E-239
Wright, Kimberly		W-38	E-239
Wright, Madeline		W-38	E-239
Wright, Pam		W-38	E-239
Wright, Paula M		W-38	E-239
Wright, Susan		W-38	E-239
Wright, Tao		W-38	E-239
Wu, Blake		W-38	E-239
Wullenwaber, Dana		W-38	E-239
Wunderlich, Eileen		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Wyatt, Aimee		W-38	E-239
Wylde, Caitlin		W-38	E-239
Wylie, Michael and Ann		W-38	E-239
Xiezopolski, Ivona		W-38	E-239
Yang, Vanessa		W-38	E-239
Yarbrough, Jim		W-38	E-239
Yaroslow, Rev Gregory		W-38	E-239
Yates, Kae		W-38	E-239
Yazdi, Teri		W-38	E-239
Yellin, Shane		W-38	E-239
Yellis, Stefanie		W-38	E-239
Yerena, Jr., Julian		W-38	E-239
Yerington, Lisa		W-38	E-239
Yeung, Alexander		W-38	E-239
Yoder, Patricia		W-38	E-239
Yoffe-Sharp, Dr Bonnie		W-38	E-239
You, Yin		W-38	E-239
Youman, Elwood W		W-38	E-239
Younan, Ayissa		W-38	E-239
Young, Jo		W-38	E-239
Young, Ria		W-38	E-239
Young, Vincent		W-38	E-239
Youngelson, Noah		W-38	E-239
Yrastorza, Teresa		W-38	E-239
Yturralde, MC		W-38	E-239
Yuen, Lois		W-38	E-239
Yuzon, Inayah		W-38	E-239
Zaccagnino, David		W-38	E-239
Zack, Julie		W-38	E-239
Zacks, Cindy		W-38	E-239
Zahnter, Susan		W-38	E-239
Zahra, Raymond		W-38	E-239
Zaman-Zade, Rena		W-38	E-239
Zamora, Ilona		W-38	E-239
Zaninovich, Sandra		W-38	E-239
Zapata, Enrique		W-38	E-239
Zelasko, Sandy		W-38	E-239
Zeller, Jennifer		W-38	E-239
Zeller, Rudy		W-38	E-239
Zeluck, Steven		W-38	E-239
Zendejas, Ana		W-38	E-239
Zenker, Rev. Elizabeth		W-38	E-239
Zerbato, Pete		W-38	E-239
Zerzan, Paula		W-38	E-239
Ziehm, Debrah		W-38	E-239
Zierikzee, R.		W-38	E-239
Zimmer, Louise		W-38	E-239
Zimmerman, Loy		W-38	E-239
Zimmermann, John		W-38	E-239
Zink, Amy		W-38	E-239
Zoah-Henderson, Richard		W-38	E-239
Zukoski, Katie		W-38	E-239

Commenter	Agency/Organization	Comment Number	Page Number
Zumwalt, Dave		W-38	E-239
Zuniga, E		W-38	E-239
Zwick, Sandy		W-38	E-239

This page intentionally left blank.

RESPONSES TO PUBLIC COMMENTS ON THE DRAFT SEIS

This page intentionally left blank.

Comment ID: Public Meeting (PM)-1 **Received: October 27, 2016**

Draft Supplemental Environmental Impact Statement
Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training, Marine Corps Air Ground Combat Center, Twentynine Palms, CA

Public Comment Form

Comments must be postmarked by November 14, 2016 to be considered in the Final Supplemental EIS. Comments may be submitted at the public meetings, via the project website at **www.SEISforLAA.com** or by U.S. Postal Service to the address below (this form can be folded as shown on reverse and mailed without an envelope; correct postage required).

Meeting Location: Barstow Date: 10-30-16

MY COMMENT IS ABOUT (please mark an "X" next to all that apply):

[ ] Tortoise Translocation, in General
[ ] Specific Alternatives in the SEIS
[ ] Purpose or Need for the SEIS Action
[ ] Air Quality Impacts
[ ] Biological Resources Impacts
[ ] Cultural Resources Impacts
[ ] Land Use Impacts
[ ] Recreation Impacts
[ ] Other: Mojave Dry Lake bed

To the Shared use area large tracked vehicles must remain on the sides of the lake bed. This is to maintain the integrity of the lake bed

Please Print

NAME: [illegible]
ORGANIZATION (if applicable): Victor Valley 4 Wheelers
ADDRESS: 8671 Knoll St Hesperia

Do you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act? [X] No [ ] Yes

Please submit this form at the meeting or mail before **November 14, 2016** to:
29Palms SEIS Project Team
c/o Cardno Government Services
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Response to Comment

Comment noted. Thank you.

Comment ID: PM-2 **Received: October 27, 2016**

Draft Supplemental Environmental Impact Statement
Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training, Marine Corps Air Ground Combat Center, Twentynine Palms, CA

Public Comment Form

Comments must be postmarked by November 14, 2016 to be considered in the Final Supplemental EIS. Comments may be submitted at the public meetings, via the project website at **www.SEISforLAA.com** or by U.S. Postal Service to the address below (this form can be folded as shown on reverse and mailed without an envelope; correct postage required).

Meeting Location: Barstow Date: 10.27.16

MY COMMENT IS ABOUT (please mark an "X" next to all that apply):

[X] Tortoise Translocation, in General
[ ] Specific Alternatives in the SEIS
[ ] Purpose or Need for the SEIS Action
[ ] Air Quality Impacts
[ ] Biological Resources Impacts
[ ] Cultural Resources Impacts
[ ] Land Use Impacts
[ ] Recreation Impacts
[ ] Other:

NOT A BIG FAN OF MOVING TORTOISES. THE TRACK RECORD SO FAR HASN'T BEEN GOOD. THE STATEMENT ABOUT THE BOSS-S WOULD INCONSIGUENTIAL BUT DISTURBING WHEN YOU HAVE POPULATION OF GROUND 100,000 TORTOISES IN THE WILD AND THE NUMBERS AREN'T GROWING ANY LOSS IS UNACCEPTABLE.

Please Print

NAME: David Haney
ORGANIZATION (if applicable): Victor Valley Wheelers
ADDRESS: 167 Knoll St Barstow

Do you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act? [X] No [ ] Yes

Please submit this form at the meeting or mail before **November 14, 2016** to:
29Palms SEIS Project Team
c/o Cardno Government Services
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Response to Comment

Thank you for your comment. The proposed tortoise translocation is required to satisfy the requirements of the 2012 BO issued by the USFWS, which requires translocation of tortoises out of harm's way before the Marine Corps begins conducting major training exercises on newly acquired lands. The Marine Corps has consulted with the USFWS to develop the alternative translocation plans that are being evaluated in the SEIS. As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012).

Comment ID: PM-3 **Received: October 27, 2016**

Draft Supplemental Environmental Impact Statement
Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training, Marine Corps Air Ground Combat Center, Twentynine Palms, CA

Public Comment Form

Comments must be postmarked by November 14, 2016 to be considered in the Final Supplemental EIS. Comments may be submitted at the public meetings, via the project website at **www.SEISforLAA.com** or by U.S. Postal Service to the address below (this form can be folded as shown on reverse and mailed without an envelope; correct postage required).

Meeting Location: BARSTOW, CA. Date: 10-27-16

MY COMMENT IS ABOUT (please mark an "X" next to all that apply):

[ ] Tortoise Translocation, in General
[ ] Specific Alternatives in the SEIS
[ ] Purpose or Need for the SEIS Action
[ ] Air Quality Impacts
[ ] Biological Resources Impacts
[ ] Cultural Resources Impacts
[X] Land Use Impacts
[ ] Recreation Impacts
[ ] Other: _____

I am very concerned that the marines will trave across means dry lake causing deep tracks which will cause dust to blow on the disturbed area. Also the deep tracks hold water and become a mire when OHV users traverse the area - mud puddles are irresistable.

Please Print

NAME: VALERIE HENRY
ORGANIZATION (if applicable): VICTOR VALLEY 4 WHEELERS / CALIF. 4 WD ASSOCIATION
ADDRESS: 967 KNOLL ST. DEVORE, CA. 92407

Do you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act? [X] No [ ] Yes

Please submit this form at the meeting or mail before **November 14, 2016** to:

29Palms SEIS Project Team
c/o Cardno Government Services
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Response to Comment

Comment noted. Thank you.

Comment ID: PM-4 **Received: October 27, 2016**

Draft Supplemental Environmental Impact Statement
Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training, Marine Corps Air Ground Combat Center, Twentynine Palms, CA

Public Comment Form

Comments must be postmarked by November 14, 2016 to be considered in the Final Supplemental EIS. Comments may be submitted at the public meetings, via the project website at **www.SEISforLAA.com** or by U.S. Postal Service to the address below (this form can be folded as shown on reverse and mailed without an envelope; correct postage required).

Meeting Location: BARSTOW, CA Date: 10-27-16

MY COMMENT IS ABOUT (please mark an "X" next to all that apply):

[X] Tortoise Translocation, in General
[ ] Specific Alternatives in the SEIS
[ ] Purpose or Need for the SEIS Action
[ ] Air Quality Impacts
[ ] Biological Resources Impacts
[ ] Cultural Resources Impacts
[ ] Land Use Impacts
[ ] Recreation Impacts
[ ] Other:

I understand that there have been studies that say this will be a safe translocation, but the loss of any tortoise during an extreme drought is almost unthinkable yet it is not addressed. Why must the tortoise be moved to areas where they will not be protected during the 1 year time frame needed for them to acclimate to the new location?
We have lost tortoise in every move so far. We can't afford to have any further losses as it takes decades to recover if at all.

Please Print

NAME: Valerie Henry
ORGANIZATION (if applicable): CALIF 4WD ASSOC / VICTOR VALLEY 4WHEELERS
ADDRESS: 9167 KNOLL ST, DEVORE CA. 92407

Do you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act? [X] No [ ] Yes

Please submit this form at the meeting or mail before **November 14, 2016** to:
29Palms SEIS Project Team
c/o Cardno Government Services
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Response to Comment

Thank you for your comment. The proposed tortoise translocation is required to satisfy the requirements of the 2012 BO issued by the USFW), which requires translocation of tortoises out of harm's way before the Marine Corps begins conducting major training exercises on newly acquired lands. The Marine Corps has consulted with the USFWS to develop the alternative translocation plans that are being evaluated in the SEIS.

As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012).

Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas from which the tortoises would be translocated as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought.

Proposed recipient sites for the translocated tortoises were carefully selected based on the site selection criteria outlined in SEIS Sections 2.1.1.1, 2.2.1.1, and 2.3 to identify higher quality tortoise habitat and to ensure that the areas can support additional tortoises. The Marine Corps has also identified mitigation measures to reduce predation risks and will be hydrating the tortoises before translocation and monitoring them afterwards. These siting criteria and translocation methods are consistent with the goals and recovery strategies of the USFWS.

Comment ID: Verbal (V)-5 **Received: October 27, 2016**

Public Presentation
October 27, 2016

BARSTOW, CALIFORNIA;

THURSDAY, OCTOBER 27, 2016, 5:00 P.M.

MR. ZANTINY: David Zantiny, Z-a-n-t-i-n-y.

My main comment is that we need to work hard to preserve a tortoise habit in its natural state as much as possible, because I think that is probably one of the biggest dangers to the tortoise along with raven predation; those are the two biggest dangers.

Response to Comment

Thank you for your comment.

The Marine Corps understands public concerns regarding tortoise protection and conservation, and is taking active steps to work through any concerns related to proposed tortoise translocation.

As part of the proposed action the Marine Corps would establish additional special use areas to support conservation of desert tortoise and their habitat.

The proposed translocation includes measures to reduce predator attraction.

Comment ID: V-6 **Received: October 27, 20016**

MS. STICH: Pam Stich, S-t-i-c-h.

I'm happy to find out that you guys are locating your tortoises on the base in a nice safe area, not like Fort Irwin did. Tortoises are endangered and we do need to take care of them.

U.S. LEGAL SUPPORT 2
(909)646-5876

Response to Comment

Thank you for your comment. The Marine Corps understands public concerns regarding tortoise protection and conservation, and is taking active steps to work through any concerns related to proposed tortoise translocation. The Marine Corps has carefully selected appropriate recipient sites both on and off the installation.

Comment ID: Mail (M)-7 **Received: November 16, 2016**

825 East Third Street, San Bernardino, CA 92415-0835 | Phone: 909.387.8109 Fax: 909.387.7876
www.SBCounty.gov

SAN BERNARDINO COUNTY

Department of Public Works
Environmental & Construction • Flood Control
Operations • Solid Waste Management
Surveyor • Transportation

Gerry Newcombe
Director

November 15, 2016

29 Palms SEIS Project Team
C/O Cardno Government Services
3888 State Street, Ste. 201
Santa Barbara, CA. 93105

File: 10(ENV)-4.01

RE: NOTICE OF AVAILABILITY OF A SUBSEQUENT ENVIRONMENTAL IMPACT STATEMENT FOR THE U.S. MARINE CORPS DESERT TORTOISE TRANSLOCATION PROJECT

To whom it may concern:

Thank you for giving the San Bernardino County Department of Public Works the opportunity to comment on the above-referenced project. **We received this request on October 11, 2016** and pursuant to our review, we have no comments.

If you have any questions, please contact the individuals who provided the specific comment, as listed above.

Sincerely,

NIDHAM ARAM ALRAYES, MSCE, PE, QSD/P
Public Works Engineer III
Environmental Management

NAA:PE:sr

Response to Comment

Thank you for participating in the SEIS review process.

Comment ID: M-8 **Received: November 9, 2016**

LUCERNE VALLEY ECONOMIC DEVELOPMENT ASSOCIATION (LVEDA)

To: 29Palms SEIS Project Team
c/o Cardno Government Services
3888 State Street, Ste. 201
Santa Barbara, CA 93105

From: Chuck Bell, Pres.
P. O. Box 193
Lucerne Valley, CA 92356
chuckb@sisp.net 760 964 3118

Date: 11/8/16

RE: **Supplemental EIS for USMC Tortoise Translocation**

NEED TO BE ADDRESSED:

Cattle and rancher not to be blamed for any tortoise deaths. To be documented as part of action. 1

No translocation unless green feed is sufficient for a full springtime/early summer feeding. 2

Some areas identified might too rocky for burrows. Plan accordingly. 3

Be prepared for multiple tortoise losses due to placement in a new environment with current tortoise carrying capacity likely at its limit. 4

Wandering tortoises w/o burrows directly after placement becoming coyote lunches. 5

Tortoises might fare better left where they are. 6

Response to Comment

Thank you for your comments.

1. The Marine Corps is the proponent for this action. To the extent mortality occurs as a result of translocation, it would be accounted for in the Biological Opinion, issued to the Marine Corps, associated with this action.
2. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought and available food. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought and food pressures whether or not they are translocated.
3. Site selection criteria described in Section 2.2.1.1 include selection of sites that support burrowing; tortoises would be translocated to areas of similar habitat as from where they are moved.
4. Proposed recipient sites were carefully selected based on the site selection criteria outlined in SEIS Sections 2.1.1.1, 2.2.1.1, and 2.3 to ensure that they can support additional tortoises. Also, as described in the "Population Viability" sub-sections of Sections 4.1.2.1, 4.1.3.1, and 4.1.4.1, it is critical that the post-translocation density is above the minimum density necessary to support population viability. The proposed action in the SEIS is intended to satisfy the requirements of the 2012 Biological Opinion, which requires translocation to mitigate effects on the desert tortoise. As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012).
5. Site selection criteria described in Section 2.2.1.1 include consideration of threats from predators and selection of sites that support burrowing. Furthermore, site-specific data on predator presence is provided in Tables 3.1-3 and 3.1-4 and analyzed under the "Predation" subsection in Sections 4.1.2.1 and 4.1.3.1. Translocation methods include measures to reduce predator attraction (e.g., rinsing tortoises that void during translocation) as described in Section 2.1.2.1 of the SEIS.
6. As discussed in Section 2.5.2 of the SEIS, an alternative involving training without translocation would result in a loss of tortoises and tortoise habitat that is not compatible with recovery of this threatened species and would not satisfy the measures outlined in the 2012 Land Acquisition BO or the 2013 ROD.

Comment ID: M-9 **Received: October 21, 2016**

Mojave Desert Air Quality Management District
14306 Park Avenue, Victorville, CA 92392-2310
760.245.1661 • fax 760.245.2699
Visit our web site: http://www.mdaqmd.ca.gov
Brad Poiriez, Executive Director

October 20, 2016

29Palms SEIS Project Team
c/o Cardno Government Services
3888 State Street, Suite 201
Santa Barbara, CA 93105

Project: Draft Supplemental Environmental Statement

Dear Ms. Adams:

The Mojave Desert Air Quality Management District (District) has received an SEIS for studying alternative plans for translocating tortoises from specific newly acquired training areas following the July 2012 Final EIS for Land Acquisition/Airspace Establishment at Marine Corps Air Ground Combat Center at Twentynine Palms.

The District concurs with Air Quality mitigation noted in ES3.4.

Thank you for the opportunity to review this planning document. If you have any questions regarding this letter, please contact me at (760) 245-1661, extension 6726, or Tracy Walters at extension 6122.

Sincerely,

Alan J. De Salvio
Deputy Director – Mojave Desert Operations

AJD/tw MCAGCC Tortoise Translocation SEIS

City of Adelanto | Town of Apple Valley | City of Barstow | City of Blythe | City of Hesperia | City of Needles | County of Riverside | County of San Bernardino | City of Twentynine Palms | City of Victorville | Town of Yucca Valley

Response to Comment

Thank you for your comment.

Comment ID: M-10 **Received: October 7, 2016**

Sirs,

Are you kidding me. I know most California's are not aware or may not evan care about our incredible wildlife, until it is to late. But I do. To take an analysis, commissioned by the very people who want to move them in the first place, is criminal. What kind of wildlife service OK's this atrocious permission? How long are we going to continue giving up everything for the military? It's time our Congress stops OKing everything the military ask for and tell them to get along with what they already have. I love our desert tortoises and if you would just check the records you would see they do not do well when they are moved. Please please, please don't allow this to happen

Darlene Neckuvar

Talk about putting the Fox in charge of the hen house. Lunse who loses!

Response to Comment

Thank you for your comment.

The Marine Corps understands public concerns regarding tortoise protection and conservation, and is taking active steps to work through any concerns related to proposed tortoise translocation.

As discussed in Section 1.1 of the SEIS, tortoise translocation was part of the original proposed action that was evaluated in the 2012 EIS and committed to in the 2013 Record of Decision (ROD). Since then, the Marine Corps has conducted additional detailed studies and worked cooperatively with the USFWS, the California Department of Fish and Wildlife, and the BLM on refined translocation plans, as required in the 2012 Biological Opinion (BO) issued by the USFWS.

The Marine Corps has consulted with the USFWS to develop the alternative translocation plans that are being evaluated in the SEIS. As described in detail in Section 4.1.1.3 of the SEIS, multiple independent studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). The proposed action incorporates lessons learned from past translocation efforts and scientific studies. As indicated in Section 1.3.2 of the SEIS, "If monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population, the Marine Corps must request re-initiation of consultation on the proposed action." This re-initiation of consultation with the USFWS would allow the Marine Corps to adapt resulting management actions to circumstances at the time of consultation.

Comment ID: M-11 **Received: November 16, 2016**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

November 14, 2016

Craig Bloxham
c/o Cardno Government Services
3888 State Street, Suite 201
Santa Barbara, California 93105

Subject: Draft Supplemental Environmental Impact Statement (Draft SEIS) for the Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at Marine Corps Air Ground Combat Center, Twentynine Palms, California (CEQ # 20160221)

Dear Mr. Bloxham:

The U.S. Environmental Protection Agency (EPA) has reviewed the above-referenced document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

The Draft SEIS evaluates the environmental effects of implementing alternative plans to translocate Agassiz's desert tortoises (*Gopherus agassizii*) from new training areas acquired by the Marine Corps as evaluated in the 2012 *Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training* Final Environmental Impact Statement. That document included a general translocation plan, but the 2012 Biological Opinion issued by the U.S. Fish and Wildlife Service (USFWS) required development of a detailed translocation plan to translocate desert tortoises from areas that would experience impacts from training. Subsequent to the 2013 Record of Decision, the Marine Corps conducted detailed studies and worked with the USFWS, the California Department of Fish and Wildlife, and the Bureau of Land Management to develop alternative translocation plans. In light of new information gained from these efforts, the Department of the Navy elected to prepare a Supplemental EIS focusing on the evaluation of potential impacts of implementing the alternative tortoise translocation plans.

Based on our review, we are rating the Preferred Alternative 2 as *Lack of Objections (LO)* (see enclosed "Summary of Rating Definitions"). We recommend that the Department of the Navy and the Marine Corps continue to work with the USFWS and other agencies on the desert tortoise translocation and associated studies. While we have no objections to the proposed action, we offer the following comments and recommendations for the Final SEIS:

- The Draft SEIS identifies the preparation of a project-specific health and safety plan as a contract requirement and identifies a number of health and safety issues the plan would address, including: slips, trips and falls; overhead hazards; and potential biological hazardous such as 1

Response to Comment

Thank you for your comments.

1. Text has been added to Section 2.6 of the SEIS to acknowledge that Valley Fever will be considered in the health and safety planning.

Comment ID: M-11 (continued) **Received: November 16, 2016**

ticks, scorpions, and venomous snakes. We recommend that the health and safety plan also address Valley Fever, which is present in San Bernardino County at a moderate rate.[1]

- The Draft SEIS references the final Council on Environmental Quality (CEQ) *Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*. We appreciate the discussion in the Draft SEIS of the cumulative climate change effects on the desert tortoise and the estimate of greenhouse gas (GHG) emissions from construction and operation of the project. The Draft SEIS compares the estimated annual GHG emissions during the lifespan of the project to the total annual emissions of the entire U.S. (p. 5-26). As is explained in the CEQ Guidance, such comparisons are "not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations because this approach does not reveal anything beyond the nature of the climate change itself: the fact that diverse individual sources of emissions each make a relatively small addition to global atmospheric GHG concentrations that collectively have a large impact."[2] EPA recommends that the Navy remove this comparison in the Final SEIS, consistent with CEQ guidance. 2

EPA appreciates the opportunity to review this Draft SEIS. When the Final SEIS is released for public review, please send one electronic copy to the address above (mail code: ENF-4-2). If you have any questions, please contact me at (415) 947-4161, or contact Karen Vitulano, the lead reviewer for this project, at 415-947-4178 or vitulano.karen@epa.gov.

Sincerely,

Connell Dunning

Connell Dunning, Acting Manager
Environmental Review Section

Enclosure: Summary of EPA Rating Definitions

cc: Ray Bransfield, U.S. Fish and Wildlife Service
Scott Kerr, U.S. Marine Corps

[1] see http://www.cdph.ca.gov/HealthInfo/discond/Documents/VFGeneral.pdf
[2] CEQ Guidance, p.11.

2

Response to Comment

2. Text in Section 5.4.3 of the SEIS has been modified accordingly.

Comment ID: M-11 (continued) **Received: November 16, 2016**

SUMMARY OF EPA RATING DEFINITIONS

This rating system was developed as a means to summarize EPA's level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the EIS.

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

ADEQUACY OF THE IMPACT STATEMENT

Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

Response to Comment

No comments/questions on this page.

Comment ID: M-12 **Received: November 10, 2016**

DESERT TORTOISE COUNCIL
4654 East Avenue S #257B
Palmdale, California 93552
www.deserttortoise.org
ed.larue@verizon.net

10 November 2016

29 Palms SEIS Project Team
c/o Cardno Government Services
3888 State Street, Ste. 201
Santa Barbara, California 93105

RE: Supplemental Environmental Impact Statement (EIS) to the Land Acquisition and Airspace Establishment Final EIS at the Marine Corps Air Ground Combat Center, Twentynine Palms, California

To Whom It Concerns,

The Desert Tortoise Council (Council) is a non-profit organization comprised of hundreds of professionals and laypersons who share a common concern for wild desert tortoises and a commitment to advancing the public's understanding of this species. Established in 1975 to promote conservation of tortoises in the deserts of the southwestern United States and Mexico, the Council regularly provides information to individuals, organizations and regulatory agencies on matters potentially affecting the desert tortoise within its geographic range.

Thank you for the opportunity to provide the following comments:

1. There are three translocation plans, but it is the last one (June 2016) that counts. Is there anything in the earlier plans that should have been carried forth, and if not, why not? For example, an earlier plan apparently required nest translocations, which is apparently missing from the latest translocation plan. 1

2. There are both control plots and recipient plots that will be affected by cattle grazing in the Ord Mountain Allotment. These impacts may be differential, particularly in Rodman-Sunshine Peak and Lucerne Valley areas, where the allotment overlaps (more so at Rodman where there may be a near-100% overlap, less so at Lucerne where only northern areas are within the allotment, although cattle "trespass" occurs on all sides of the largely unfenced allotment). Is the Marine Corps aware that the Bureau of Land Management (BLM) intends to increase cattle grazing from 25 head to more than 300 head, which was authorized in their 2006 Environmental Assessment (EA) on cattle grazing and seems to represent the BLM's current preferred 2

Desert Tortoise Council/Comments/29 Palms Translocation.11-10-2016 1

Response to Comment

Thank you for your comments and recommendations.

1. The March 2016 and June 2016 translocation plans were updated from the 2011 GTP based on studies and consultation with the USFWS that has occurred since the 2011 GTP was prepared; as such, everything that should have been carried forward has been carried forward.

   Regarding nests, the 2011 GTP called for searching for nests when performing clearance surveys. This was removed from the March and June 2016 Translocation Plans because (1) nests are difficult to find, in part because there are not many nests to be found; and (2) translocation would occur in the spring, at which point nests are likely to not be viable. If future translocations were to occur in the fall, there would be some limited potential for any nests found to be viable. The Marine Corps will consult with USFWS regarding translocating nests and, if approved, will translocate nests found in the Fall to a protected enclosure.

2. The application to renew the Ord Mountain grazing allotment is being reviewed by BLM and has been added to the list of Cumulative Projects in Chapter 5 of the SEIS. BLM, the Marine Corps, and the allotment applicant are coordinating actions with respect to this application. The 2006 EA and associated BO for this grazing allotment indicated compatibility between grazing and continued occupancy by desert tortoise. The research identified in Section 2.2.4.2 (grazing research) will help land management and resource agencies to better understand specific interactions between grazing and desert tortoises.

Comment ID: M-12 (continued) **Received: November 10, 2016**

alternative in spite of drought and a 56% decline in tortoises in the Ord-Rodman Critical Habitat Unit (CHU)? If BLM increases stocking rates in spite of drought conditions, how will it affect the function of the control plots and translocated tortoises in the recipient plots, particularly if resident and translocated tortoises would be exposed to elevated cattle numbers?

3. As we understand it, the main maneuver exercise is expected to occur in a 72-hour period with clean-up following, although we don't know what cleanup entails. Is there any intent to have these cleanup crews look for dead tortoises resulting from maneuvers? If not, how does USFWS propose to judge whether its biological opinion mortality take limit (assuming there is one) has been met, exceeded, or not met? 3

4. Alternative 2 in the SEIS is the preferred alternative, and mainly differs in not involving a recipient area in the Bullion Mountain Training Area, which is retained in Alternative 1. Why does Alternative 2 double the number of tortoises that can be moved into the Rodman-Sunshine Peak recipient site while leaving the Lucerne Valley translocation number the same? Specifically, are the sizes and habitat assessments in Lucerne Valley and Rodman-Sunshine Peak similar enough to receive the majority and equal numbers of translocated tortoises? Or, is this a means of creating a pair of similar treatments so that statistics can be applied later? Too often projects are designed so that statistics can be applied when the primary focus must be what is best for the tortoise. 4

5. Are there enough natural burrows in recipient sites to accommodate this new introduction of tortoises, particularly since no artificial burrows are to be created? Did baseline data count the numbers of burrows available for the new tortoises in various recipient sites? Are there maps showing the number and distribution of burrows in impact areas compared to recipient areas? 5

6. There are apparently no maps showing carcass distributions. However, it sounded like there were many more carcasses in the Newberry area, in the west part of the Rodman-Sunshine Peak recipient area, than to the east. On 25 October 2016 at the public meeting, Brian Henen indicated that there are not higher incidences of upper respiratory tract disease (URTD) there, so what caused the die-offs and will translocated animals be exposed to the same factors that caused the die-off? Why move healthy tortoises into an apparent blight zone? Are recipient areas comprised of the best habitats available, or are they being moved due to convenience? Given that tortoises could have been moved many more miles from the maneuver areas into superior habitats than are currently being considered, where are such habitats located and why are they not being used? 6

7. Presently, tortoises would be placed in a four square kilometer area in the center of the Rodman-Sunshine Peak recipient site. Rather than put every tortoise in the center of this area, why not distribute them, particularly to the north, northeast, and south to avoid concentrating translocatees into a centralized area that can be targeted by coyotes and perhaps motorcyclists? Has the SEIS adequately assessed the sink effect of this particular maneuver exercise, assuming tortoises in adjacent areas that were neither surveyed for nor are to be translocated continue to move into future impact areas that will receive annual, repetitive maneuvers? 7

Desert Tortoise Council/Comments/29 Palms Translocation.11-10-2016 2

Response to Comment

3. Post-translocation clearance surveys would be conducted as described in Section 2.1.2.4 of the SEIS. Clean-up following maneuver exercises would not specifically look for tortoises; however, any injured or dead tortoises incidentally discovered during clearance surveys or clean-up efforts would be reported to the USFWS.

4. Translocation Numbers were adjusted based on consultation with USFWS, including the USFWS's Desert Tortoise Recovery Office. The Lucerne-Ord and Rodman-Sunshine Peak North recipient sites are similar in terms of habitat quality, allowing similar post-translocation density at the two sites.

5. Field et al (2007) noted that all tortoises exited their initial burrows within 30 minutes, and all but two tortoises moved away from the artificial burrows on the days of their release, in either a straight-line or a meandering fashion. Given the choice of high quality habitat and the existence of tortoises in all proposed recipient areas, as well as existing burrows, adequate soils for construction of new burrows and water catchments, and a native seed bank to provide forage, artificially enhancing habitat quality is not necessary. Additionally, USFWS translocation guidance does not require artificial enhancement of habitat quality, including but not limited to the provision of burrows, water catchments, forage, or shade. Moreover, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012).

6. Population decreases have been observed range-wide; no particular "die-off" distinct from surrounding areas has been noted in the recipient sites. Recipient and Control site-selection criteria (refer to Sections 2.1.1.1, 2.2.1.1, and 2.3) include factors such as predation and disease. The Marine Corps is not aware of other locations that meet the site selection criteria that also have superior habitat.

7. The Final SEIS has been updated to indicate that tortoises will be released more broadly at the recipient site, as appropriate given site-specific conditions and subject to the site selection criteria (see Sections 2.1.1.1, 2.2.1.1, and 2.3). The release areas shown on the figures in Chapter 2 now indicate that they are "representative" of the final dispersal and release areas.

Effects of training in the expansion area were addressed in the 2012 EIS and are outside the scope of this SEIS.

Comment ID: M-12 (continued) **Received: November 10, 2016**

8. Does the SEIS call for increased Marine Corps or BLM law enforcement to protect aboveground translocated tortoises from being poached or inadvertently affected by heavy recreational weekends like Easter break or Mother's Day? 8

9. It appears that the very largest tortoises occurring in the West Mojave occur in this area, particularly in northern Lucerne Valley over to northern Johnson Valley. Does the SEIS adequately consider the importance of this genotype and how have translocation methods been modified to accommodate these larger animals? 9

10. What proportion of the 225 translocated tortoises fitted with transmitters will be females? If the answer is, "an equal number of males, females, and subadults are to be translocated," are we again facilitating statistical analysis at the expense of better understanding the fate of reproductive females, which presumably carry a bit more value in their ability to repopulate areas in decline? This project is not about enhancing population viability; it is about displacing large numbers of tortoises and ensuring they are as stable or more so in their new habitats than in the habitats from which they came. 10

11. If there is no rain this winter, will the Marines still move tortoises? Hydration, alone, with no forage to metabolize the food seems like a formula for failure for translocated tortoises, and does nothing to address how the local predator population may respond to this new food source, assuming their prey base is also affected. Even if tortoises are well-hydrated, nothing else, including predators, will be. Would a well-hydrated tortoise be more attractive to a hungry, thirsty predator? 11

12. Must the Marines be restricted to the SEIS numbers of translocated tortoises intended for each recipient area? If it doesn't rain in Lucerne Valley this winter but does north of Broadwell or in Siberia in those recipient sites, for example, maybe some of the tortoises originally intended for Lucerne Valley should be shifted to those areas? Does the SEIS lock the Marines into these numbers or can they retain some flexibility if environmental conditions warrant? Will rain gauges be placed in all recipient and control areas this winter, and how will rainfall data be used, if at all, to modify the actual release? 12

13. Is all of Dr. Alice Karl's habitat assessment data included in the Draft SEIS? If not, will it be in the Final SEIS? And, how may those data affect intended translocation? 13

14. We understand that the Marines intend to retain the relative configuration and juxtaposition of translocated animals one to the other, so that the same configurations and distances would be retained in the recipient areas as occurred in impact areas. In the absence of any burrow data in the recipient site, why does this matter? We assume its intent is to keep familiar animals together, but if togetherness is driven by burrow availability, doesn't the social structure all fall apart if the spatial configuration of available burrows is drastically different at the recipient site compared to the impact site? 14

15. As we understand it, there would be no new clearance surveys; telemetered animals would be targeted for removal. Is there a component or intent to also rescue and relocate any animals incidentally encountered while telemetered animals are removed? If so, how will biologists know 15

Desert Tortoise Council/Comments/29 Palms Translocation.11-10-2016 3

Response to Comment

8. As indicated in Section 2.2.3 of the SEIS, post translocation monitoring would be supplemented by regular Conservation Law Enforcement Officer patrols through recipient and control sites, consistent with federal law. The frequency of patrols would be adjusted as circumstances require.
9. Genetic considerations have been addressed through use of site selection criteria identified in Sections 2.1.1.1, 2.2.1.1, and 2.3 and are analyzed in the Genetic Considerations subsection of Sections 4.1.2.1 and 4.1.3.1 of the SEIS. Translocation methods are in accordance with USFWS guidance as discussed in Sections 2.1.2 and 2.2.2.
10. Under the Proposed Action, the sex ratio of transmittered tortoises would match that of the original populations. This ensures that the sampled population does not have a sex bias, which would compromise the Marine Corps' ability to detect the effects of translocation on each gender. The sample size is large enough to understand both male and female responses to translocation.
11. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought.
12. The Marine Corps has flexibility in the number of tortoises that would be translocated into each recipient site, subject to consultation with USFWS. However, it would be imprudent to base site selection on a single season of rainfall since a single season of rainfall might not represent the best available habitat given the site selection criteria. Recipient sites were selected based on overall habitat quality at recipient sites, which have high quality habitat in part because of long-term rainfall patterns.
13. Dr. Karl's data and conclusions regarding habitat quality were used during the site selection process in the SEIS.
14. The intent of maintaining the relative configuration and juxtaposition of translocated animals to one another is to maintain the social connections that may exist between individual tortoises.

    Desert tortoises are known to construct their own burrows within hours of being released (Field et al. 2007). As such, "togetherness" is not expected to be driven by burrow availability.
15. Any tortoise incidentally encountered during translocation efforts would also be removed. These tortoises would be collected and temporarily held in holding pens until such time that health assessments, including blood tests, could be completed and the tortoises cleared for translocation. Subsequent clearance surveys following translocation would be conducted as described in Section 2.1.2.4 of the SEIS.

Comment ID: M-12 (continued) **Received: November 10, 2016**

if these animals are URTD-positive before they are translocated? Are they to be tested, held, and subsequently released pending results?

16. We understand that the 1,000 tortoises to be translocated are nearly devoid of URTD, with only one having nasal discharge and none with elevated URTD titers, but that all recipient populations showed some level of URTD, ranging up to about 10% of the tortoises tested. Is it true that the URTD titers in the Lucerne Valley recipient population may be the highest? If so, will new blood tests be taken from clean translocated tortoises over a period of years to determine how many translocated tortoises contracted mycoplasmosis from resident animals as a result of the translocation? 16

17. In its biological opinion, how does USFWS intend to determine what is and is not mortality take attributed to translocation? When it's a bulldozer, biological opinions allow the incidental mortality of up to several animals. If 25% of the translocated tortoises die as they did following the Fort Irwin translocation does the biological opinion anticipate a take mortality limit of 250 tortoises? 17

18. We are concerned that the control plot and the Lucerne Valley recipient plot are not comparable; the control plot occurs near Daggett Ridge and does not have the near-exposure of the residential impacts associated with Lucerne Valley, which likely include dogs, poaching, and higher incidences of cross country vehicle use. Do Dr. Karl's disturbance data show that there are similar baseline impacts on the recipient site as on the paired control plot near Daggett Ridge? Do her data show the same levels of cattle grazing at the two sites? Given that the northern part of Lucerne Valley recipient plot is inside the cattle allotment and the control plot is outside, how can results be compared between these two plots? 18

19. We are equally concerned with the proximity of the Lucerne Valley recipient plot to Cinnamon Hills, which is chronically targeted for off-highway vehicle (OHV) recreation. Given that proximity, do the data show higher incidences of OHV tracks on the recipient plot in Lucerne Valley compared to the control plot near Daggett Ridge? 19

20. We strongly encourage the Marine Corps to install an appropriate fence along the west side of Camp Rock Road in the Cinnamon Hills and Anderson Dry Lake areas to keep motorcycles out of the Lucerne Valley recipient plot. 20

21. There are distance sampling data between 2004 and 2014 that show a 56% decline in tortoises in the Ord-Rodman CHU. It appears that evidence of this die-off is prevalent in the Newberry Springs areas where recently-dead tortoises are abundant. Since we don't have longitudinal trend data for the training impact area, how do we know if tortoises have declined there at the same rate as in adjacent critical habitat? Does the SEIS compare the relative abundance of carcasses per unit area within the documented die-off region in critical habitat to the abundance of carcasses in the training impact area in the absence of trend data? 21

22. We think the above comparison is important because we do not believe that equal die-off in control populations compared to translocated populations is acceptable. However, if there is a 50% die-off in critical habitat and not a similar baseline die-off in the training impact population, 22

Desert Tortoise Council/Comments/29 Palms Translocation.11-10-2016 4

Response to Comment

16. Health assessments, including blood tests, are part of the long-term monitoring program described in Sections 2.1.3 and 2.2.3.

17. As indicated in Section 1.3.2 of the SEIS, the USFWS 2012 Land Acquisition BO determined that "the rate of mortality or injury of translocated and resident desert tortoises is not elevated above the rate of mortality or injury for other populations within the action area that are not affected by translocation." The control sites would be used to compare rate of mortality and injury to that within paired recipient sites.

18. Dr. Karl's data and conclusions were used during the site selection process and when pairing of control sites with recipient sites. In addition, the Lucerne-Ord recipient site is also paired with the Rodman-Sunshine Peak South control site.

19. Dr. Karl's conclusions considered ground disturbance as a factor when identifying and pairing control and recipient sites. In addition, the Lucerne-Ord recipient site is paired with two control sites, as described in response to Comment #18.

20. This suggested fence will be added as a potential mitigation measure in the Final SEIS for consideration in the ROD.

21. The distance sampling data document a range-wide, long-term decline in desert tortoise populations. Data specific to the expansion area have not been collected by USFWS; however, population trends in the expansion area are not expected to be substantially different from that in the adjacent Ord-Rodman Critical Habitat Unit.

22. Please see responses to Comments #6 and #21 above.

Comment ID: M-12 (continued) **Received: November 10, 2016**

the "equal levels of death" are not equal at all when 25% of all the animals die in all the treatment areas. In other words, if tortoises were stable and would remain stable in the impact area, but-for the translocation, and end up dying at levels equal to tortoises in the recipient area, which we already know to be in decline, is that truly comparing equal levels of decline in translocated versus resident versus control area tortoise populations?

23. We noted a series of maps showing trauma in the recipient population of tortoises. Were those trauma data also collected for animals to be translocated, and assuming they were, are there any noteworthy differences? These maps show prevalent levels of trauma in the Rodman-Sunshine Peak recipient tortoises, which would presumably put translocated tortoises at heightened risk to similar impacts in the area. Since all translocated animals will presumably be marked with permanent numbers, is there any intent to perform surveys later to see how many of these marked tortoises may have died from trauma? Or would it have to be one of the 225 tracked animals to know what happened? 23

24. We understand the need to have 225 telemetered tortoises in the translocated, recipient, and control populations for statistical comparisons, but if the transmitters were left on every translocated tortoise, wouldn't the effects of translocation, at least for the two years the transmitters function, give us a wider, more realistic view of tortoise fates? We understand it's more expensive and does not support the scientifically-acceptable approach, but we believe the value in tracking the fates of all 1,000 animals far outweighs the "statistical analysis" gained by following a quarter of them. 24

Thank you for your time. We sincerely hope that these considerations will lend additional protection to tortoises displaced from their familiar habitats.

Regards,

Edward L. LaRue, Jr., M.S.
Desert Tortoise Council, Ecosystems Advisory Committee, Chairperson

Desert Tortoise Council/Comments/29 Palms Translocation.11-10-2016 5

Response to Comment

23. Health assessments on all tortoises included trauma; differences between populations were not noteworthy and were identified in site descriptions in Sections 2.2.1.2 and 2.3.

    Post-translocation monitoring will be performed using telemetry and other methods (including mark-recapture). Mortality and cause of death will be reported for all dead tortoises found.

24. As noted in the comment, the monitoring plan provides a "scientifically-acceptable approach" to understanding effects of translocation throughout the translocated and recipient populations. Furthermore, the Marine Corps has committed to monitoring long-term effects of translocation over a 30-year period.

Comment ID: M-13 **Received: November 14, 2016**

State of California - Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Inland Deserts Region
3602 Inland Empire Blvd., Suite C-220
Ontario, CA 91764
(909) 484-0459
www.wildlife.ca.gov

EDMUND G. BROWN, Jr., Governor
CHARLTON H. BONHAM, Director

November 14, 2016

Department of the Navy
Naval Facilities Engineering Command Southwest Central Integrated Product Teams
Mr. Jesse Martinez, Project Manager
1220 Pacific Highway
San Diego, CA 92132-5190

Subject: Draft Supplemental Environmental Impact Statement for the Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at Marine Corps Air Ground Combat Center, Twentynine Palms, California

Dear Mr. Martinez:

The Department of Fish and Wildlife (CDFW) appreciates the opportunity to comment on the Draft Supplemental Environmental Impact Statement (SEIS) for the Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at Marine Corps Air Ground Combat Center (MCAGCC), Twentynine Palms, California (Project). CDFW is responding to the EA as a Trustee Agency for fish and wildlife resources (California Fish and Game Code Sections 711.7 and 1802, and the California Environmental Quality Act [CEQA] Guidelines Section 15386).

Project Location

The proposed project is located on and around Marine Corps Air Ground Combat Center, north of the City of Twentynine Palms, south of the Interstate 40 and west of Amboy Road, in the County of San Bernardino, State of California.

Project Description

The 2011 General Translocation Plan (GTP) that was prepared in support of the 2012 Final EIS and associated Biological Opinion (BO) is considered the No-Action Alternative in this SEIS. The intent of the GTP was to provide for the translocation of tortoises from training areas in the Western Expansion Area (WEA) and Southern Expansion Area (SEA) that would experience high to moderate levels of impact from the proposed training activities, and to recommend further investigation of those factors that would be important determinants of translocation success and tortoise recovery. The BO identified conservation and mitigation measures the Marine Corps would need to implement to minimize the rate of mortality or injury to

Conserving California's Wildlife Since 1870

Response to Comment

No comments/questions on this page.

Comment ID: M-13 (continued) **Received: November 14, 2016**

Draft SEIS for the Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at Marine Corps Air Ground Combat Center
November 14, 2016
Page 2 of 4

resident tortoises, including developing a detailed plan to translocate desert tortoises from areas that would experience impacts from training. Since the 2012 Final EIS and 2013 Record of Decision (ROD), the Marine Corps has conducted detailed studies and has worked with United States Fish and Wildlife Service (USFWS) and the Bureau of Land Management (BLM) to refine the translocation plan for the desert tortoise, as required in the 2012 Land Acquisition BO. As a result of this effort, and in consultation with the USFWS, the Combat Center refined and developed two alternative desert tortoise translocation plans.

Project Specific Comments and Recommendations

Following the review of the ESIS, CDFW offers the comments and recommendations listed below to assist MCLB in adequately identifying and/or mitigating the Project's impacts on biological resources. CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of those species (i.e., biological resources).

Alternative 1

Page 2-10 Section 2.2.1.1 - Recipient and Control Site Selection

One factor not mentioned is that recipient sites should be similar (vegetation, soil, etc.) to the sites in which tortoises are translocated. This should be included as one of the conditions for site location. 1

Page 2-12 Table 2.2.1 Recipient and Paired Control Sites

Because of the following reasons Daggett does not make a good paired control site. Table 4 on page 15 of the Translocation plan shows the Daggett site with a highest of seropositive tortoises, of any site, tied for the highest percent of tortoise with canid trauma and a fairly significate amount of "Offending Raven" nests. Mortality would almost certainly be higher in this site, so it should not qualify for a control site. 2

The other comparison should be use between recipient and paired control site type of vegetation.

Page 2-15 Figure 2.2-2 View of Recipient and Control Sites West and Northwest of the WEA

The Lucerne-Ord Recipient site abuts the Johnson Valley OHV Open area. The recipient should be fence to prevent OHV use and collection of tortoises in the area. In addition, one of Dr. Kristin Berry's long-term study plots is within this proposed recipient site. In past discussion with the USFWS, it was always discussed in the past that we need to be aware of where there are research projects taking place so they do not 3

Response to Comment

Thank you for your comments.

1. Site selection criteria discussed in Sections 2.1.1.1, 2.2.1.1, and 2.3 include measures of habitat quality. Identified recipient sites include a variety of habitat factors (vegetation, soils, etc.). Text in Section 2.1.2.3 of the Final SEIS has been updated to indicate that individual tortoises would be placed "in an area similar to that from which they were collected."

2. In weighing site selection criteria identified in Sections 2.2.1.1 and 2.3, the Marine Corps determined Daggett is an adequate control site. In addition, a second control site (Rodman-Sunshine Peak South) is associated with each of the recipient sites with which Daggett is paired.

   Regarding "the other comparison should be use between…": the intent of this comment is unclear. However, as indicated in criteria listed in Section 2.1.1.1, control sites would be paired with recipient sites with similar habitat type/quality.

3. This suggested fence will be added as a potential mitigation measure in the Final SEIS for consideration in the ROD.

   Regarding the long-term study plot: translocated animals will be marked to distinguish them from resident animals. Also, recipient sites were selected in consultation with the USFWS.

   Regarding the No-Action Alternative: the refinement of recipient sites for Alternative 1 was based on 3-year program of surveys and literature review, evolving translocation guidance, consultation with USFWS, and coordination with BLM (as discussed in Section 2.2.1.2).

Comment ID: M-13 (continued) **Received: November 14, 2016**

Draft SEIS for the Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at Marine Corps Air Ground Combat Center
November 14, 2016
Page 3 of 4

overlap. The addition of tortoises in the area will impact the study plot and data collected there.

The south west corner of the Rodman-Sunshine Peak South Control site abuts Dr. Berry's Johnson Valley long-term study plot. Care will need to be taken so none of the tortoises from the study plot area used as control animals.

In the no-action alterative there several recipient sites in the WEA, which were not in Alternative 1. Why were these locations deleted?

Pages 2-21 & 22 Section 2.2.2.2 Fencing

As mentioned above the site most at risk from OHV use is the Lucerne-Ord recipient site. This area should be fence to preclude OHV is and illegal collection of tortoises. It does not sound as if this area is currently included in the proposed fencing areas. 4

Page 2-23 Section 2.2.2.3 Translocation

The SEIS states that during coordination with the CDFW regarding the Alternative 1translocation plan, the agency requested that the Combat Center consider limiting translocation of ELISA-positive tortoises. As a precautionary measure, the Combat Center agreed not to translocate any ELISA-positive tortoises into desert tortoise critical habitat, and would instead place them in other identified recipient sites. CDFW would like to recommend the ELISA-positive tortoises be transmittered, place in the medium use area and monitored to determine the impacts to the tortoises from training in a medium use area. This could valuable information for future projects. 5

CDFW seeks clarification if there will be any consideration of rainfall and amount of forage available prior to translocation. If there minimal rainfall this winter, there may not be adequate vegetation for the recipient population let alone for translocated tortoises especially in the grazing allotment areas.

In the Translocation Plan it say the survival will be assessed via tracking 675 telemetered tortoises, 225 each of translocated, control, and resident groups, with 225 representing approximately 20% (190 tortoises) of the adults, and 5% (35 tortoises) of the juveniles originally anticipated to be translocated. The adults in both groups should consist of an equal number of males and females.

Page 2-24 Section 2.2.2.4 Subsequent Clearance Surveys

This section states or mentions the surveys would be conducted as described in the No-Action Alternative which states -For any tortoise found, the standard measurements and assessments that were used on other tortoises would be completed and the tortoise numbered. All tortoises that are suitable candidates for translocation, based 6

Response to Comment

4. This suggested fence will be added as a potential mitigation measure in the Final SEIS for consideration in the ROD.

5. Regarding leaving ELISA-positive tortoises in place: the 2013 ROD committed the Marine Corps to translocating tortoises from the medium- and high-impact areas prior to maneuver training. As stated in Section 1.4 of this SEIS, the purpose of and need for this SEIS is to study alternative translocation plans in support of this commitment. Because training in the medium- and high-impact areas would not be compatible with continued existence of the tortoise, all tortoises located in these areas will be translocated. Neither the USFWS translocation guidance (2010) nor the 2012 BO contemplate differentiating between ELISA-positive and ELISA-negative individuals during translocation. However, as the comment notes, the Combat Center has agreed not to translocate ELISA-positive tortoises into desert tortoise critical habitat.

   Regarding rainfall: Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought.

   Regarding telemetered tortoises: Under the Proposed Action, the sex ratio of transmittered tortoises would match that of the original populations. This ensures that the sampled population does not have a sex bias, which would compromise the Marine Corps' ability to detect the effects of translocation on each gender. The sample size is large enough to understand both male and female responses to translocation.

6. Health assessments include blood work and not just a visual assessment of the tortoise. This has been clarified in Section 2.1.2.4 of the SEIS.

Comment ID: M-13 (continued) **Received: November 14, 2016**

Draft SEIS for the Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at Marine Corps Air Ground Combat Center
November 14, 2016
Page 4 of 4

on the health assessment, would be translocated to the designated recipient areas. CDFW is assuming the health assessment mentioned in the statement includes blood work, not just a visual assessment and that the tortoise will be held until the results have been obtained.

Page 2-25 Section 2.2.4.1 Table 2.2-3 Recipient Sites Post Translocation Densities for Alternative 1

CDFW would hope these number could be flexible if rain fall is sporadic in areas this winter and could change some of the translocation number if some recipient site have more forage for the tortoises. It is CDFW 's opinion translocation should be conducted in order to insure the highest survival rate of the translocated animals. 7

Alternative 2

Comments are the same as Alternative 1 above.

General Comments

CDFW appreciates that the Marine Corp has committed to a total of 30 years for studying the effect of translocation on the desert tortoise.

Aa Memorandum of Understanding with CDFW for the translocation will be need for on the work conducted off base. 8

CDFW appreciates the opportunity to comment on the ESIS. If you should have any questions pertaining to this letter, please contact Rebecca Jones at Rebecca.Jones@wildlife.ca.gov or (661)-285-5867.

Sincerely,

Leslie McNair
Regional Manager
Inland Deserts Region

Cc: State Clearing House
CORR

Response to Comment

7. The Marine Corps has flexibility in the number of tortoises that would be translocated into each recipient site, subject to consultation with USFWS. However, it would be imprudent to base site selection on a single season of rainfall since a single season of rainfall might not represent the best available habitat given the site selection criteria. Recipient sites were selected based on overall habitat quality at recipient sites, which have high quality habitat in part because of long-term rainfall patterns.

8. General Comments:

   Regarding 30 years of monitoring: comment noted.

   Regarding the MOU: comment noted.

Comment ID: M-14 **Received: November 10, 2016**

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Pacific Southwest Region
333 Bush Street, Suite 515
San Francisco, CA 94104

IN REPLY REFER TO:
(ER 16/0533)

Filed Electronically

10 November 2016

Jesse Martinez
Project Manager
Department of the Navy Naval Facilities Engineering Command Southwest
1220 Pacific Highway
San Diego, CA 92132

Subject: Draft Supplemental Environmental Impact Statement by the U.S. Marine Corps and Department of the Navy regarding Tortoise Translocation for the Land Acquisition and Airspace Establishment Project to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training, Marine Corps Air Ground Combat Center, Twentynine Palms; San Bernardino County, California.

Dear Mr. Martinez,

The Department of the Interior has received and reviewed the subject document and has no comments to offer.

Thank you for the opportunity to review this project.

Sincerely,

Patricia Sanderson Port

Patricia Sanderson Port
Regional Environmental Officer

cc: OEPC - Staff Contact: cheryl_kelly@ios.doi.gov, 202-208-7565

Response to Comment

Thank you for your review.

Comment ID: M-15 **Received: November 8, 2016**

2112 N Mammoth Pl
Escondido, CA 92029
November 7, 2016

29Palms SEIS Project Team
c/o Cardno Government Services
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear sirs:

I have serious concerns about the SEIS dealing with translocating tortoises from the Marine Combat Center. My comments follow:

Monitoring Program Needs to be Spelled Out

To ensure the program is scientifically rigorous and consistent with USFWS guidance, your monitoring program for resident and control sites needs to be fully spelled out in the SEIS. Exactly what elements will be monitored? What information will be gathered? What are the thresholds and criteria for success of the translocation? How will the USMC document and share the results of monitoring? How often will the monitoring results be published for public review? Annual reports to the USFWS and in your INRMP are a start but a much clearer indication of the format and information to be monitored must be laid out for public review at this time, before a decision is made on this SEIS. Please put me on your mailing list for annual monitoring reports. 1

Tortoise Numbers

The SEIS has very little information regarding the numbers of tortoises to be impacted. Analysis in the original EIS indicates as many as 645 – 3,769 adults and as many as 18,086 juveniles are located within the areas and would be disturbed by military training over the life of the project and could be translocated, killed or injured (Table 4.10-2 in EIS). The SEIS needs better analysis of numbers to be impacted under each SEIS alternative. The table referenced above does not give a range for juvenile tortoises to be impacted under Alternative 6 (the one chosen in the Record of Decision). So please correct me if I'm wrong, but my assumption is that the worst case is that 3,769 adults and 18,086 juveniles would be disturbed? 2

These numbers need to be clearly identified in the SEIS, for each alternative, for consideration by the decision-maker. This significance in numbers alone may not justify the project, and perhaps the land should be returned to BLM for wildlife and multiple use management.

BLM as a Cooperating Agency

If BLM is truly a cooperating agency on this plan, why have they not done a better job of advertising the project's public comment period and public meetings? For one example, I 3

Response to Comment

Thank you for your comments and recommendations.

1. The proposed post-translocation monitoring is described in Sections 2.1.3 and 2.2.3 of the SEIS, and in the translocation plans provided in Appendix A and incorporated by reference in the SEIS.

2. The SEIS focuses on translocation of tortoises and does not change overall take estimates described in the 2012 EIS. Section 2.2.2.3 of the SEIS identifies the number of tortoises expected to be translocated under this action.

   As discussed in Section 1.1 of the SEIS, translocation was part of the original proposed action that was evaluated in the 2012 EIS and committed to in the 2013 ROD. As discussed in Section 2.5.1 of the SEIS, foregoing training in the expansion area would not meet the purpose and need for the proposed action in this SEIS. The implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

3. BLM is a cooperating agency in this SEIS process; project notifications are the responsibility of the Marine Corps. The SEIS was given its own informational page on the MCAGCC website at http://www.29palms.marines.mil/Staff/G5-Government-and-External-Affairs/SEISforLAA/. That page also provided a link to the SEIS project website at www.SEISforLAA.com, which in turn linked back to the MCAGCC EIS page. In addition, the SEIS was advertised in newspapers, social media, Federal Register notices, and by direct mail of postcards to the 14,000+ names on the 2012 EIS's mailing list.

Comment ID: M-15 (continued) **Received: November 8, 2016**

receive the BLM's "News.Bytes" newsletter that announces "Upcoming Events." I never saw one mention of this project in any BLM newsletter or on any BLM webpage. This is a major oversight that has caused lack of transparency and notification among Mojave public land users and others interested in tortoise translocation and closure of lands due to military base expansion. Further, some of the tortoise recipient areas are on public lands outside of the Combat Center. BLM intends to issue a separate Record of Decision for moving tortoises onto these lands. BLM should have clearly informed its constituents of this project, opportunities for comment, notification of public meetings, and how land management and use would change in those areas receiving potentially thousands of tortoises.

As a result of this oversight and lack of notification by BLM, as a cooperator, the public comment period should be re-opened and extended for an additional 30-45 days.

More Information Needed on Diseases

The SEIS fails to acknowledge the difficulties of screening wild and captive tortoises for infectious diseases when: 1) so many new and emerging diseases have yet to be identified, and; 2) tests have not been developed and validated for all of the known infectious diseases for desert tortoises.

The new and previously identified herpesviruses and the new species of Mycoplasma are but a few of the examples of disease issues. The SEIS fails to acknowledge and reference the 2014 work by Dr. James Wellehan on the new Mycoplasma and new herpesvirus (Wellehan et al. 2014). Please see "References" at the end of this comment letter for more information. 4

Translocation of wild tortoises without adequate testing for infectious diseases is unwise and highly unlikely to advance recovery efforts. Biologists and managers can't assume that wild populations or individual tortoises on projects are healthy, because of unauthorized release and translocations of captive tortoises in the recent past and because degraded environments contribute to poor health and greater susceptibility to disease.

At a minimum, the SEIS must acknowledge this significant data gap and associated questions.

Genotypes

The genotypes of the tortoises removed from projects cannot be assumed to represent the tortoises at that specific locality as records of hundreds of captive releases, both published and anecdotal, are available (e.g., see Murphy et al., 2007). Therefore, it is important that the genotypes of tortoises to be translocated are known.

While the SEIS references Murphy et al. 2007, the analysis is not complete, and conclusions are not substantiated due to lack of information. Data gaps must be identified. Also, especially important will be identification of tortoises of different species and mitochondrial haplogroups within species. This specific issue is not addressed in the SEIS. 5

Response to Comment

4. The translocation is planned according to USFWS guidance which requires health assessments and blood tests for *Mycoplasma spp*. The ELISA tests indicate past exposure to the *Mycoplasma spp*., but not whether the animal is ill. The Upper Respiratory Tract Disease Syndrome (URTDS) is one of the factors contributing to the species listing by the USFWS, which is one reason why USFWS requires its analysis prior to proposed translocations and in subsequent monitoring; the Marine Corps intends to meet both requirements.

   The health of potential translocatees, plus tortoises at control and recipient sites, have been assessed according to USFWS health assessment protocols, including the ELISA tests for *M. agassizii* and *M. testudineum*. The incidence of ELISA-positive is low as indicated in SEIS Table 3.1-5 and the Translocation Plans in Appendix A, and only one individual showed a slight nasal discharge during health assessments. Thus, none of the translocatees qualified for retention in holding pens per USFWS translocation guidance.

   However, after discussing translocation efforts with the CDFW, the Marine Corps agreed to not translocate ELISA-positive tortoises to Critical Habitat.

   The Marine Corps recognizes the potential for emergent diseases (e.g., herpes virus). Consequently, during the health assessments, oral swabs for herpes viruses and plasma residues were retained for potential future investigation of emerging diseases, as described in the Translocation Plans (Appendix A). Also, the monitoring plan includes annual health assessments of the transmittered translocatees, residents, and control animals, with the primary goal of monitoring for health, trauma and disease issues that may emerge. This is also consistent with recent monitoring recommendations for Herpesvirus (Jacobson et al 2012). Such monitoring may facilitate adapting the project's management of the populations.

5. As discussed in Section 2.2.4.4, DNA samples have been collected from all tortoises located during clearance surveys. Genetic considerations have been addressed through use of site selection criteria identified in Sections 2.1.1.1, 2.2.1.1, and 2.3 and are analyzed in the Genetic Considerations subsection of Sections 4.1.2.1 and 4.1.3.1 of the SEIS. The selection criteria for close sites is prudent for genetic considerations, as is matching habitat and climate conditions to the source site conditions.

Comment ID: M-15 (continued) **Received: November 8, 2016**

Translocation During Drought Conditions

The SEIS is not clear and implies that you plan to release tortoises even if drought conditions persist. Page 4-7 suggests that mortality rates will be about the same in resident and translocated populations. I question that conclusion. You seem to accept expected elevated mortality, so long as translocated tortoises die at the same elevated rate as resident tortoises.

Please see the conclusion in the 3 July 2013 Biological Opinion on Issuance of Recovery Permits under Section 10(a)(1)(A): "Therefore, long-term drought is likely to have even greater effects, particularly given that the current fragmented nature of desert tortoise habitat (e.g., urban and agricultural development, highways, freeways, military training areas, etc.) ***will make recolonization of extirpated areas difficult, if not impossible***" (emphasis added). I believe that the SEIS should take a stronger stand on translocation during drought. Why not develop and propose mitigation that recognizes drought? I'd recommend that during drought conditions, no tortoises should be released into the translocation recipient areas. 6

Tortoise Losses at Fort Irwin

The SEIS has numerous references to Esque et al. (2010), but the "Literature Cited" section only has a reference to Esque et al. (2010b). Is an Esque et al. (2010a) missing from your Chapter 7 - References? 7

Esque et al. (2010) reported that the significant losses of tortoises associated with the Fort Irwin translocation study between 2005 and 2008 were due to drought-induced low population levels of coyote prey species, particularly rabbits and hares, so that coyotes likely preyed more heavily on both resident and translocated tortoises as a result. Esque et al. (2010) also noted that subadult tortoises (as well as female tortoises) were particularly susceptible to coyote predation. Have any studies been performed within the translocation sites to determine if current levels of rabbits and hares are abnormally low in response to the last several years of drought? Without data to prove otherwise, I must assume that coyote prey species are indeed abnormally low. In such a case, the plan to release tortoises is highly disconcerting. 8

Further, during the same time period considered by Esque et al. (2010), Berry et al. (2013) reported low mortalities of subadult and adult tortoises in a specific study area with coyote control. Will coyote control measures be performed to reduce mortality on translocated subadults? What was the loss to coyote predation of any tortoises in the vicinity of control and recipient areas? Pages 2-19 and ES-15 seem to indicate that coyote control may be implemented, but no further details are given. It may also be beneficial to do such control in all areas receiving translocated tortoises.

Results of Other Tortoise Translocation Efforts

The SEIS makes a stab at this on pages 4-10 and 4-11. Results of recent tortoise translocations nearby (e.g., Hidden Valley, Eldorado Valley, and Trout Canyon) should also be assessed in the SEIS. How has the design of the Marine Corps' LAA Translocation Plan benefitted from 9

Response to Comment

6. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Recipient sites were also selected based on overall habitat quality; relatively better quality habitat is in part a function of long-term rainfall patterns. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought. Tortoises would also be released early enough in the spring or fall season for tortoises to search the new area to begin settling and burrow digging (see Field et al. 2007), before hot or cold weather arrives.
7. The reference citations have been corrected in the Final SEIS.
8. Drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises (and prey species) would be subject to these drought pressures whether or not the tortoises are translocated. Evidence of trauma associated with canid predation was included as part of the site selection criteria discussed in Section 2.2.1 of the SEIS. In addition, coyote control measures are proposed in the SEIS.
9. Section 4.1.1.3 of the SEIS summarizes all relevant studies published to date. Unfortunately, detailed results and related analysis of the recent tortoise translocations to Hidden Valley, Eldorado Valley, and Trout Canyon are not available; for this reason, the SEIS summarizes and incorporates into the analysis Allison et al. (2016) and Hall et al. (2016), both of which are abstracts from the 2016 Desert Tortoise Council Annual Symposium. The proposed action incorporates lessons learned from other translocation efforts and scientific studies, however. For example, selection of recipient sites with low predation rates and control of predators were learned from Esque et al. (2010) and Mack and Berry (2015), respectively.

Comment ID: M-15 (continued) **Received: November 8, 2016**

results at other release efforts? Transparency is critical to the science of this and other USFWS projects and request that summaries of results of the aforementioned translocation and augmentation reports and annual reports be provided in the Final SEIS.

Concerns Regarding Population Augmentation

"Population augmentation is an important tool for conservation of the Mojave desert tortoise (USFWS 2011). The SEIS has limited references to population augmentation. For a successful translocation, the number of tortoises in any area should not exceed the capacity of the surrounding desert. Little to no information on specific habitat characteristics or measures of habitat quality exist relative to carrying capacity for Mojave desert tortoises (USFWS 2011). The SEIS should further explain how you plan to set conservative population-density targets.

I'm concerned that this translocation plan is more of an arbitrary opportunity to move tortoises than a scientifically-based exercise to augment the population. Additionally, since this area appears to have experienced above normal mortality rates (e.g. Fort Irwin), is it appropriate to compare densities elsewhere in the recovery unit that have not suffered as high mortality? 10

USFWS should establish or state what "normal" mortality rates means for this area or region. This information should be referenced in the SEIS. If not available, identify a significant data gap for the decision-maker to consider.

USFWS (2011) reported: "It is important to realize that if the causes of tortoise population declines are not addressed, simply increasing population numbers in the wild through augmentation will not result in recovery." In the absence of knowing the carrying capacity, or why tortoises at the proposed relocation site are dying at a faster rate than nearby areas, it is very risky to translocate tortoises to such area, particularly under the current prolonged drought conditions.

Conclusions

I believe this translocation proposal is ill-advised. It will result in displacement of thousands of tortoises from the MCAGCC to other parts of the Mojave Desert, including critical habitat. The SEIS does not present any viable "No Action Alternative." Why does an alternative not exist that allows the tortoises to remain, and the military to downsize their large land holdings, training exercises and operate more efficiently? The Marines should be able to conduct large-scale joint exercises with the Army at Fort Irwin.

11

The SEIS does not build a case for perpetuating translocation in this area, particularly in the absence of reports on the efficacy of previous translocations. This SEIS must report available findings regarding translocations in southern California, and if none exist, report lack of findings.

Response to Comment

10. Proposed recipient sites were carefully selected based on the site selection criteria outlined in SEIS Sections 2.1.1.1, 2.2.1.1, and 2.3 to ensure that they can support additional tortoises. Also, as described in the "Population Viability" sub-sections of Sections 4.1.2.1, 4.1.3.1, and 4.1.4.1, it is critical that the post-translocation density is above the minimum density necessary to support a viable population.

    The translocation is a requirement of the 2012 BO and 2013 ROD. While Alternative 2 includes greater focus on augmenting depleted populations, that is not the purpose of the overall translocation effort. Mortality rates and density vary based on a variety of factors, and density considerations have been an important component of the process of planning for this translocation. All translocation plans have referred to historical declines in tortoise populations (see also USFWS 2015), so populations would be augmented.

    Regarding "normal" mortality rates: As indicated in Section 1.3.2 of the SEIS, the USFWS 2012 Land Acquisition BO determined that "the rate of mortality or injury of translocated and resident desert tortoises is not elevated above the rate of mortality or injury for other populations within the action area that are not affected by translocation." The control sites would be used to compare rate of mortality and injury to that within paired recipient sites.

11. As discussed in Section 1.1 of the SEIS, translocation was part of the original proposed action that was evaluated in the 2012 EIS and committed to in the 2013 ROD. As discussed in Section 2.5.1 of the SEIS, foregoing training in the expansion area would not meet the purpose and need for the proposed action in this SEIS. The implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

Comment ID: M-15 (continued) **Received: November 8, 2016**

Also, given that BLM will be issuing a separate Record of Decision for translocation onto their lands, they must be fully transparent, provide more notification, host public meetings and publish appropriate Federal Register Notices. They have largely ignored their role as a cooperating agency. They have different mailing lists and constituent bases interested in such actions. Thus, the public comment period must be extended for an additional 30-45 days to allow BLM to better notify their interested publics. 12

Thank you for informing me about this proposal to translocate tortoises.

Regards,

Barbara Shoemacher

References:

Berry, K.H., J.L. Yee, A.A. Coble, W.M. Perry, and T.A. Shields. 2013. Multiple factors affect a population of Agassiz's desert tortoise (Gopherus agassizii) in the northwestern Mojave Desert. Herpetological Monographs 27:87-109.

Esque, T.C., K.E. Nussear, K.K. Drake, A.D. Walde, K.H. Berry, R.C. Averill-Murray, A.P. Woodman, W.I. Boarman, P.A. Medica. J. Mack, and J.H. Heaton. 2010. Effects of subsidized predators, resource variability, and human population density on desert tortoise populations in the Mojave Desert, U.S.A. Endangered Species Research, Vol. 12-167-177, 2010.

Murphy, R.W., K.H. Berry, T. Edwards, and A. M. McLuckie. 2007. A Genetic Assessment of the Recovery Units for the Mojave Population of the Desert Tortoise, *Gopherus agassizii*. Chelonian Conservation and Biology 6(2): 229-251.

U.S. Fish and Wildlife Service. 2011. Revised recovery plan for the Mojave population of the desert tortoise (Gopherus agassizii). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California.

Wellehan, J.F., A.L. Childress, and K.H. Berry. 2014. Identification of a Novel Herpesvirus and a Novel Mycoplasma sp. in Samples from Translocated Wild Desert Tortoises. Thirty-Ninth Annual Meeting and Symposium of the Desert Tortoise Council. Ontario, CA. February 21-23.

Response to Comment

12. Appendix C of the SEIS, Agency Correspondence, includes letters between the Marine Corps and BLM that detail the expectations and responsibilities of a "cooperating agency." Also, see response to Comment #3.

Comment ID: M-16 **Received: November 14, 2016**

3700 Quartz Canyon Rd
Riverside, CA 92509
November 11, 2016

29Palms SEIS Team
/co Cardno Services
3888 State St., Ste. 201
Santa Barbara, CA. 93105

Dear sir:

I have been monitoring this project for about ten years, and I find it hard to believe that you have not yet completed it yet. Why is the environmental process taking so long? What has the cost been to date? What will the cost be for the tortoise translocations? 1

I also find it hard to believe that the Marine Corps Base at 29 Palms now totals about 700,000 total acres. How much of that land gets used regularly? Why is so much needed? 2

A main question is why is it so necessary to move thousands of desert tortoises at this point in time? Please explain why was there was little or no concern for them in Johnson Valley when that area was managed by the BLM as an off-road vehicle area with people running around everywhere on 4-wheelers, jeeps, motorcycles and dune buggies?

If there was no harm being done to tortoises during all that time, then I don't understand why some USMC training during a couple months each year can't be done without "translocating" thousands of turtles? The Final SEIS should explain the history of that area and why there is such a big concern now. In fact, isn't it true that having Johnson Valley largely un-used for ten months of the year will be a lot better for the turtles than before when ORVs were everywhere year-round? 3

Why is there no alternative that just allows the tortoises and Marines to co-exist in Johnson Valley? Doesn't NEPA require a "No Action" alternative that would allow both the Marines and the tortoises to use that area? 4

Also, what uses will be curtailed in those areas where the tortoises are put? Your SEIS doesn't say that those will basically become turtle sanctuaries, with so many of them that no other land uses will be permitted there. As multiple uses (like grazing and energy development) are channeled elsewhere, that will put stress on those areas. The SEIS needs to do a better job of analyzing these "cumulative" impacts, especially given all the other acres grabbed and locked up for military uses throughout the nation. 5

Finally, only 45 days are being provided for a comment period. I only hear about this tortoise plan when I recently saw an article in the Riverside Press-Enterprise newspaper. So I checked out your project page that I have had booked for about a decade: http://www.29palms.marines.mil/Staff/G4-Installations-and-Logistics/Land-Acquisition/

Response to Comment

Thank you for your comments

1. The Marine Corps is actively seeking to conclude the project. However, the Marine Corps understands public concerns regarding tortoise protection and conservation, and is taking active steps to work through any concerns related to proposed tortoise translocation. The Marine Corps is also committed to working with its neighbors and stakeholders throughout the NEPA process.
2. The 2012 Final EIS identified the purpose and need for land acquisition.
3. As discussed in Section 1.1 of the SEIS, translocation was part of the original proposed action that was evaluated in the 2012 EIS and committed to in the 2013 ROD. This commitment was based on analysis presented in the 2012 Final EIS and through consultation with the USFWS.
4. As discussed in Section 2.5.2 of the SEIS, an alternative involving training without translocation would result in a loss of tortoises and tortoise habitat that is not compatible with recovery of this threatened species and would not satisfy the measures outlined in the 2012 Land Acquisition BO or the 2013 ROD.
5. As indicated in site selection criteria discussed in Sections 2.1.1.1, 2.2.1.1, and 2.3, existing land uses and future development were consideration in selection of recipient and control sites. Sections 4.2.3 and 4.2.4 analyze consistency with land use management plans and policies and impacts to specific land uses, and conclude a less than significant impact to both under Alternatives 1 and 2.

Comment ID: M-16 (continued) **Received: November 14, 2016**

Why is there no information about this SEIS on that main project page?
Why are you not being open and transparent about this project? What are you trying to hide?

Why has the BLM not notified everyone on their mailing list about this project? 6

I think you need to do a better job of getting the word out and provide a couple more months for people to read and review this latest SEIS. You should not depend on local newspapers to get the word out, especially when you have a project website and have failed to put any SEIS information and links on that.

Finally, I understand that Marines will still not be able to train there until they "acquire airspace." When is that going to happen? A document on your project webpage says "The process to complete acquisition of additional SUA could take several years to complete; therefore, temporary measures are being pursued to accommodate the planned MEB level exercise in August 2016." How did the training in August 2016 go, and how much tortoise kill was experienced? 7

Are desert tortoises considered to be "social species"? Even if they aren't, a study by Shier and Swaisgood (2012) suggests that disruption of species' social relationships may be an important factor. I don't see this impact adequately addressed in the SEIS. For social species, translocations are particularly tricky. Stephens' Kangaroo rats, like many other animals, form social relationships with their close neighbors. They get to know who's who, where one rat's territory ends and another begins, where potential mates are, and who's likely to beat them in a fight. Once these neighborly relationships are established, it saves a lot of time, energy and unnecessary aggression in day-to-day interactions. This is due to a phenomenon known as the "dear enemy" effect, whereby territorial animals tend to respond less aggressively towards their neighbors, than they do toward unfamiliar animals. 8
http://www.nature.com/scitable/blog/eyes-on-environment/mitigation_translocations
Reference:
Shier D. M. and Swaisgood R. R. Fitness costs of neighborhood disruption in translocations of a solitary mammal. Conservation Biology 26 116-23 (2012)

Please add me to your mailing list for future information.

Sincerely,

Bill D. Stewart

Response to Comment

6. The SEIS was given its own informational page on the MCAGCC website at http://www.29palms.marines.mil/Staff/G5-Government-and-External-Affairs/SEISforLAA/. That page also provided a link to the SEIS project website at www.SEISforLAA.com, which in turn linked back to the MCAGCC EIS page. In addition, the SEIS was advertised in newspapers, social media, Federal Register notices, and by direct mail of postcards to the 14,000+ names on the 2012 EIS's mailing list. The Marine Corps feels that the duration of the comment period and public outreach are sufficient to meet the Public Outreach requirements of NEPA given the nature of this project.

   Regarding BLM: BLM is a cooperating agency in this SEIS process; project notifications are the responsibility of the Marine Corps.

7. The process to complete acquisition of airspace is ongoing and the webpage will be updated, as appropriate. The summer 2016 training was limited to on-road convoy and patrol operations, and did not meet the need for sustained, combined arms, live-fire and maneuver training for which the land was acquired.

8. As indicated in Section 2.2.2.3 of the SEIS, tortoises would be released in a spatial distribution similar to capture distribution to better maintain social groupings. The intent of maintaining the relative configuration and juxtaposition of translocated animals to one another is to maintain the social connections that may exist between individual tortoises.

Comment ID: M-17 **Received: October 23, 2016**

37415 Larchwood Dr
Palmdale, CA 93550
October 20, 2016

29Palms SEIS Project Team
c/o Cardno Government Services
3888 State Street, Suite 201
Santa Barbara, CA 93105

Hello,

My comments on the Draft Supplemental EIS for the Land Acquisition / Airspace Establishment Project follow:

1 - A specific menu item for the SEIS and link to www.SEISforLAA.com should be provided from the project's home page that the public has been monitoring for the past eight years:

http://www.29palms.marines.mil/Staff/G4-Installations-and-Logistics/Land-Acquisition/

It does not promote transparency and openness to now develop a separate, hidden web presence in another on-line location for this SEIS. 1

2 - The original Final EIS (pg. 23) said that the Preferred Alternative (subsequently adopted) would result in a take of between 645 and 3,769 tortoises over the project's life span. The SEIS must more clearly explain why estimates of "take" have now changed. 2

3 - Last year, Dr. Kristin Berry and other independent scientists prepared a report for the Desert Renewable Energy Conservation Plan. It concluded: "In general, moving organisms from one area to another ... is not a successful conservation action and may do more harm than good to conserved populations by spreading diseases … increasing mortality, and decreasing reproduction and genetic diversity." Page 3-25 of the SEIS mentions the importance of genetics, as well as the variability in the Mojave gene pool. The SEIS lack enough analysis to substantively conclude a "less than significant impact" on genetics. Further analysis (or at least recognition of data gaps is needed) to determine whether local population genetics be muddied? 3

4 – Further analysis should also focus on the animals' strong homing instincts and the impacts on resident tortoises. The SEIS references Hinderle (2015), but that study only dealt with 80 translocated tortoises. Based on that research, you need better substantiation that recipient sites are large enough for the numbers expected to be translocated, as well as assurance that your planned monitoring efforts will be sufficient. 4

5 – This scale of translocation appears to be nothing more than a human-induced scientific experiment. For such long-lived animals, five years of survival after being 5

Response to Comment

Thank you for your comments.

1. The SEIS was given its own informational page on the MCAGCC website at http://www.29palms.marines.mil/Staff/G5-Government-and-External-Affairs/SEISforLAA/. That page also provided a link to the SEIS project website at www.SEISforLAA.com, which in turn linked back to the MCAGCC EIS page. In addition, the SEIS was advertised in newspapers, social media, Federal Register notices, and by direct mail of postcards to the 14,000+ names on the 2012 EIS's mailing list.

2. The SEIS focuses on translocation of tortoises and does not change overall take estimates described in the 2012 EIS. Section 2.2.2.3 of the SEIS identifies the number of tortoises expected to be initially translocated under this action.

3. The proposed action in the SEIS is intended to satisfy the requirements of the 2012 Biological Opinion, which requires translocation to mitigate effects on the desert tortoise. As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). Additionally, Averill-Murray and Hagerty (2014) determined that translocating tortoises from their original site to a recipient site less than 124 miles (200 km) away has a low probability of causing outbreeding depression. Furthermore, consistent with USFWS translocation guidance (USFWS 2010b), no tortoise would be translocated more than 25 miles (40 km). See also the discussion provided in the "Genetic Considerations" subsection of Section 4.1.2.1 of the SEIS.

4. With respect to desert tortoise homing instincts, Section 4.1.1.3 of the SEIS summarizes the published studies that formally describe these instincts (Hinderle et al. [2015], Field et al. [2007], Farnsworth et al. [2015]), and these studies are used, as appropriate, in the impact discussion provided in Section 4.1.2.1. The site selection criteria described in Sections 2.1.1.1, 2.2.1.1, and 2.3 of the SEIS were used to ensure that recipient sites are adequate to receive and support translocated desert tortoises. Recipient sites are sufficiently large to accommodate desert tortoise home ranges and post-translocation dispersal. Regarding the proposed monitoring efforts, the Marine Corps has committed to a 30-year monitoring program that will include telemetry and other methods (including mark-recapture and health assessments).

5. The Marine Corps has committed to a 30-year monitoring program as described in Section 1.3.2 that should detect long-term effects of

translocation. Text has been added to the beginning of Section 4.1.1.3 of the SEIS to state that past studies described are short-term (most spanning no more than 4 years), and that only one report (Mack and Berry 2015) provides 8 years of post-translocation monitoring data. As such, there is very little information available on the long-term effects of desert tortoise translocation

Comment ID: M-17 (continued) **Received: October 23, 2016**

uprooted might still end in slow starvation, or they might genuinely be re-establishing themselves. We still don't know if translocation works. The SEIS should be open, transparent and admit that the best laid plans are nothing more than a long-term study of a fairly large magnitude and scale.

6 – In a speech on 18 Oct 2016, President Obama said (in reference to the liberation of Mosul in Iraq), "It's hard when you leave your home. It's hard when you leave your home in a war zone." Yes, we are empathetic for refugees of war, but the recent campaign at Mosul also prepared for the onslaught of refugees by providing camps with shelter, food, water, shade and sanitation.

Are tortoises that much different? Imagine the stress and adverse impacts of uprooting desert tortoises that are so intimately tied to their homes and home ranges. They know where their burrow is, where every little water catchment is, and they travel hundreds of meters to reach them when it rains. The SEIS never even mentions or maps water catchments in current, control or recipient areas. It would be very helpful to have a better handle and analysis of water availability prior to translocation. 6

7 - To what extent were the following areas analyzed as recipient areas: 1) Big Horn Mountain Wilderness, 2) Joshua Tree National Park, 3) Newberry Mountain Wilderness, 4) Bristol Mountain Wilderness, 5) Kelso Dunes Wilderness, 6) Trilobite Wilderness? If designated Wilderness Areas have moderate to high quality tortoise habitat, then why aren't more recipient areas identified? If Wilderness Areas were "considered but eliminated," provide rationale as to why. An Alternative should be developed to provide for more recipient areas, esp. in light of the magnitude of tortoise numbers to be translocated. Such an alternative could be designed to maximize use of already designated Wilderness Areas. Focus on areas with similar habitat quality, minimal threats, and strive to keep densities at or near what densities were in former habitat. 7

8 - Another alternative to be considered should focus on translocation to the large number of acres in already established Tortoise Critical Habitat Areas. In the Final SEIS, please explain why the plan does not take more advantage of such areas already designated as such (Fremont-Kramer, Ivanpah, Pinto Mountains, Superior-Cronese, Paiute-Eldorado, Chemehuevi, etc.) Again, my point is that there would be less mortality expected if more recipient areas were identified and used, and if post-translocation densities only slightly increased rather than doubled in such areas. Focus on areas with similar habitat quality, minimal threats, and strive to keep densities at or near what densities were in former habitat. 8

9 - Figure 5.4-3 shows predicted refugia with a three degree increase in summer temperatures. The SEIS could have developed a specific alternative based on this analysis. The "Refugia Alternative" could have identified recipient areas that would 9

Response to Comment

6. Section 4.1.2 of the SEIS describes impacts to desert tortoises from translocation, which may include increased levels of stress as well as time and energy spent moving to explore the new surroundings. Despite these impacts, however, and as described in detail in Section 4.1.1.3, multiple studies have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). Consistent with USFWS translocation guidance, desert tortoises would be hydrated and moved to high-quality habitat during an appropriate time of year to reduce translocation-related stress.

7. The use of the site selection criteria (described in Sections 2.1.1.1, 2.2.1.1, and 2.3) provides for habitat with minimal threats. The areas suggested do not meet these site selection criteria since they are, for example, too far removed from the project area, too close to unfenced major roads or human habitation, or offer poor quality habitat. As described in Section 4.1 of the SEIS, the proposed post-translocation densities were determined using USFWS guidance, are well below historical desert tortoise densities, and are above the minimum viable population density determined by USFWS. The proposed recipient sites under Alternatives 1 and 2 (refer to Sections 2.2.1.2 and 2.3, respectively) are consistent with USFWS translocation guidance and would sufficiently accommodate all translocated tortoises.

8. Please see response to Comment #7, above.

9. The recipient sites were selected based on various site selection criteria (described in Sections 2.1.1.1, 2.2.1.1, and 2.3) and land use constraints, including those associated with partner agencies and private lands. The climate change refugia study had as a primary input present day habitat conditions. By applying site selection criteria that include habitat quality, the Marine Corps has included areas that overlap some areas of refugia, as shown in Figures 5.4-1 to 5.4-6 in the SEIS. Refugia studies are uncertain; for example, Sinervo (2015) predicted no desert tortoise refugia in the project area. Present day habitat conditions are more meaningful for successful translocation than predicted conditions at the end of the century.

Comment ID: M-17 (continued) **Received: October 23, 2016**

function as refugia. Was such an alternative even considered? If not, why? While there is some overlap between the refugia and proposed recipient areas, it is also concerting to note that the northernmost unit of the Ord-Rodman and Sunshine Peak recipient areas would not serve as refugia under this model. Thus, this information leads me to conclude that mortality could very easily end up quite high in these two areas. There are also many solid blocks of refugia that have not been pursued as recipient areas. Wouldn't maximizing the use of refugia ensure better survivability? The SEIS should further explain such inconsistencies and why an additional alternative was not developed to maximize the use of refugia for translocation of tortoises. Focus on areas with similar habitat quality, minimal threats, and strive to keep densities at or near what densities were in former habitat areas.

10 - The USMC and/or BLM should also develop much stronger mitigation calling for the construction of burrows and water catchments in recipient areas, prior to any translocation taking place. In other words, develop "refugee camps" for them prior to moving and traumatizing them. Why does the translocation plan not call for the human digging of burrows prior to the translocation to recipient areas? Have there been any studies on tortoise acceptance and use of human-constructed burrows and water catchments? Why not even consider seeding some recipient areas with native forage species that tortoises like? Wouldn't these extra efforts give tortoises a head start towards better survival if some burrows, catchments and forage areas had already been constructed prior to translocation to new habitat areas? 10

The SEIS should document the thought, if any, given to improving habitat by providing more shelter, water, shade and food sources. When a species is picked up from an area they are familiar and established in, and then plopped down in a strange arid area, it would just seem to be common sense that they would do better if habitat, food, water and other needs were already there and existing for them. Please document the extent to which such things were considered as part of this plan, and the reasons why such things are not being done to prepare the habitat for better survival prior to translocation.

11 - With regard to potential threats to tortoises, the Draft SEIS only presents some references to a few studies. No impact analysis of the alternatives is given. No substantive conclusions are drawn. For example, on page 285 of the SEIS, it's a cop-out to say that "threats will be evaluated." Within the SEIS, better and more substantive impact analysis is needed, and mitigation may be called for that specifically targets, for example, dogs, coyotes and/or ravens within recipient areas. More should be said aobut mitigation to reduce threats also associated with human developments, highways and energy infrastructure. 11

Response to Comment

10. Field et al (2007) noted that all tortoises exited their initial burrows within 30 minutes, and all but two tortoises moved away from the artificial burrows on the days of their release, in either a straight-line or a meandering fashion. Given the choice of high quality habitat and the existence of tortoises in all proposed recipient areas, as well as existing burrows, adequate soils for construction of new burrows and water catchments, and a native seed bank to provide forage (Guo et al. 1998), artificially enhancing habitat quality is not necessary. Additionally, USFWS translocation guidance does not require artificial enhancement of habitat quality, including but not limited to the provision of burrows, water catchments, forage, or shade. Moreover, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012).

11. It appears that this comment is referring to text (page 285) in the 2011 General Translocation Plan, provided in Appendix A of the SEIS. Impact analysis of each alternative is described in Sections 4.1.2, 4.1.2, and 4.1.3 of the SEIS. Threats from human development, highways, energy infrastructure, and predators were minimized through site selection criteria identified in Sections 2.1.1.1, 2.2.1.1, and 2.3. In addition, the Marine Corps would implement predator control measures as indicated in Sections 2.2.3 and 2.6.2.

Comment ID: M-17 (continued) **Received: October 23, 2016**

12 – Tortoises also have strong social structures. Your discussion of this on pages 4-17 and 4-18 of the SEIS is minimal. With planned translocation of this scope and magnitude, your conclusion is unsubstantiated that "territorial fighting between resident and/or translocated tortoises would not be expected." Doubling tortoise densities in recipient areas is bound to increase such fighting and competition for limited resources. 12

13 - Both the original and revised plans were filled with suggestions about what should be done to recover the tortoise in addition to translocation. The SEIS is very lacking in that only focuses on translocation, without the concomitant emphasis on so many other possible mitigation measures to benefit tortoises such as to acquire land, install protective fences, retire grazing allotments, limit off-roading, limit military training at critical times, cover landfills and close trails. Why not use this SEIS to show greater cooperative efforts with such agencies as BLM, National Park Service, and U.S. Fish & Wildlife Service to truly build a plan not just limited take of desert tortoise but actual long-term recovery? 13

14 – Portions of the 6.4 million acres of BLM-administered land designated as critical habitat in 1994 have changed jurisdiction since then, including millions of acres transferred to the National Park Service. Most critical habitat remaining under BLM management now has special protection as "Areas of Critical Environmental Concern" or "Desert Wildlife Management Areas." In the latter, development is limited to one percent of the total area. As part of this planning effort, all recipient areas (and perhaps even the Special Use Areas also) should be designated as critical tortoise habitat. Further, all critical habitat on BLM land within the Mojave should be designated as ACECs with special management identified for each. 14

15 - The various maps within the SEIS should clearly identify the boundaries and management goals of existing Desert Tortoise Critical Habitat Areas and ACECs. For example, in the vicinity of Rodman Mountains Wilderness, this Desert Tortoise Critical Habitat should be shown and also be designated as an ACEC. This comment applies to all relevant maps for a clearer picture of how the planners and scientists have fully thought out the consistent overlapping nature (and mutually beneficial goals) of Critical Habitat, ACECs, Desert Wildlife Management Areas, Special Use Areas, Control Areas, Recipient Areas, Wilderness Areas, etc. 15

16 - The USGS and FWS are working with planners to retain wildlife corridors between critical habitat areas. And yet, according to a 2012 study in BioScience by Averill-Murray and others, the "effectiveness of most recovery actions is … unknown," and in many parts of its range, the tortoise continues to decline. The SEIS does not mention wildlife corridors, other than to acknowledge that tortoises use washes as foraging corridors. This is serous oversight in your SEIS analysis of the bigger picture, 16

Response to Comment

12. As described in Section 2.2.2.3, the USMC is taking actions to preserve social structure, to the extent possible, to minimize social conflict by releasing translocated desert tortoises in configuration similar to how they were collected. Text in the SEIS regarding territorial fighting has been revised from "would not be expected" to "would be minimized."

13. The purpose of the Marine Corps' proposed action in this SEIS is to evaluate alternative approaches to translocating tortoises out of harm's way as required in the 2012 BO and the 2013 ROD. Issues related to mitigating impacts of military training in the expansion area were previously addressed in the 2012 Final EIS, the associated 2012 BO, and the 2013 ROD, and are beyond the scope of this SEIS and appropriate mitigation measures. The Marine Corps has consulted with USFWS and coordinated with BLM and other agencies regarding this SEIS.

    Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

14. Designating desert tortoise critical habitat or ACECs is a responsibility of the USFWS and BLM, respectively, and is therefore outside of the scope of this SEIS, which describes and analyzes a Marine Corps action to translocate desert tortoises as required by the 2013 ROD and the 2012 BO. The Final SEIS has been updated to include the ACEC's identified in the DRECP 2016 ROD.

15. Land uses were identified in Figures 4.2-1, 4.2-2, and 4.2-3; and the Final SEIS has been updated to include the ACEC's identified in the DRECP 2016 ROD. Critical habitat units have also been added to these figures.

16. The SEIS describes regional connectivity in the vicinity of the Combat Center in its own sub-section in Section 3.1.4.3, and related impact analysis for each Alternative is provided in Sections 4.1.2.1, 4.1.3.1, and 4.1.4.1. Additional analysis pertaining to wildlife corridors has been added to these sections in the Final SEIS.

Comment ID: M-17 (continued) **Received: October 23, 2016**

cumulative impact assessment and function of habitat areas in totality and as part of a larger system with linkages.

17 - The 2011 GTP estimated that, without translocation, about 1,105 adults and 2,100 juveniles would be lost due to MEB exercises. The original Final EIS (pg. 23) said that the Preferred Alternative (subsequently adopted) would result in a take of between 645 and 3,769 tortoises over the life span of the project. Why does the SEIS not better identify approximate numbers to be translocated to each of the proposed recipient areas, under each alternative? The SEIS should also better quantify expected take under each alternative. 17

18 - "Limited, low or poor" habitat quality is mentioned on page 2-2 of the SEIS. It is unclear in the SEIS what criteria were used to identify, evaluate and prioritize the habitat of control and recipient areas for tortoises. Provide this scientifically-based information in an Appendix. 18

19 - As a mitigation measure for this action, the USMC, BLM and USFWS should agree to the habitat evaluation of (and potential threats within) all Wilderness and Wilderness Study Areas (WSAs) within a fifty mile radius of the Combat Center. The potential of these areas for desert tortoise translocation has not been adequately analyzed. A set of scientifically-based biological criteria should be developed, and inventory teams should conduct field reviews to rate all such areas for recipients. 19

20 - As BLM is a cooperating agency on this SEIS, it would be beneficial for this document to acknowledge the need for and/or even facilitate a Resource Management Plan Amendment at this time for all tortoise recipient areas to become designated Areas of Critical Environmental Concern (ACECs). If not feasible at this time, any final decision should state (and obtain BLM's concurrence) to pursue ACEC designation at the BLM's earliest convenience, along with preparation of special management plans for all recipient areas. 20

21 - Page 2-19: Further analysis of impacts is needed for implications of the "Cook Bill" under each of the alternatives presented. To just say that current visitation is uncertain, and that things could change, is not sufficient. 21

22 - The alternatives generally call for a doubling of densities in recipient areas. Combined with better information provided on habitat quality and threats in each of the areas, the SEIS should provide better substantiation (based on research) to logically conclude that such areas can withstand a doubling of densities without high mortality. Nature has a way of determining existing densities. 22

The SEIS has not adequately presented any biological "carrying capacity" analysis to substantiate its conclusions about expected success and mortality rates post-

Response to Comment

17. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively. Expected take from the project was described in the 2012 EIS; translocation alternatives described in this SEIS do not change that analysis.
18. Additional discussion has been added to Section 2.2.1.2 of the SEIS.
19. BLM guidance has been to minimize the use of wilderness areas for desert tortoise translocation.
20. See response to Comment #14 above.
21. The expansion of the Johnson Valley OHV Recreation Area under the Cook Bill is identified as a cumulative project in SEIS Section 5.3.2 and was considered along with other listed cumulative projects in the cumulative impact analysis in SEIS Section 5.4.
22. Proposed recipient sites were carefully selected based on the site selection criteria outlined in SEIS Sections 2.1.1.1, 2.2.1.1, and 2.3 to ensure that they can support additional tortoises. Also, as described in the "Population Viability" sub-sections of Sections 4.1.2.1, 4.1.3.1, and 4.1.4.1, it is critical that the post-translocation density is above the minimum density necessary to support population viability. The relatively small size of the Cleghorn recipient site is due to intentional, temporary constraints on dispersal in an area that contains high quality habitat as described in Section 2.1.4.2.

    Scientifically-based criteria were used as described in Sections 2.1.1.1, 2.2.1.1, and 2.3, and site information, such as habitat quality and threats, are described in Sections 2.2.1.2 and 2.3. Also, see response to Comment #18 above.

Comment ID: M-17 (continued) **Received:**

translocation. I am particularly concerned about the Cleghorn area where there doesn't seem to be much quality habitat (see Table 3.1-2) and densities may be going to over 10 – 23 per square Km. It is unfortunate that the SEIS concludes (page 4-18) that the "maximum population density supportable by any given site is unknown, but better tortoise habitat may support more tortoises." This is further justification for scientifically-based criteria for evaluation habitat and the inventory of sites to rate each for habitat quality, threats, etc. This also reinforces my claim that your best laid plans appear to be nothing more than an experiment, with many unknowns at present and questions to be answered in the years to come.

23 - For mitigation, why does the SEIS not call for the cancellation of the Ord-Rodman Grazing Allotment? With BLM as a cooperating agency, it would make sense to give the tortoises a better chance at survival by eliminating this grazing allotment. Rather, at page 4-23, the SEIS acknowledges adverse impacts to tortoises moved there but merely states that "no mitigation has been identified to further reduce these impacts." Given the ESA listing of the desert tortoise, please explain why retiring this grazing allotment is not a feasible and realistic mitigation for those tortoises translocated to the existing Ord-Rodman Allotment. 23

24 – This project has been on-going for about a decade. The land was acquired by the Marines in 2013, but now this SEIS has to be done before the Marines can properly train on the land. Johnson Valley continues to sit idle and closed to all uses (except for within the "shared use area"). What next? How much money has been expended on planning and environmental analysis for this project during the past ten years? When is this project going to finally end? Specifically, when will the FAA issue their EIS to provide the necessary airspace to the Marines? I'm sure that is going to be contentious and run for a few more years. While temporary airspace will be provided during the 60-day MEB exercises, when will the Marines finally get what they need permanently? Please update your websites to provide a realistic timeline to bring this project to completion. Please quit wasting taxpayer money with endless planning, analysis and bureaucracy. 24

Thank you for the consideration of my comments. I look forward to seeing a Final SEIS, hopefully with additional alternatives, much better analysis, and substantiated conclusions that address my comments and concerns documented herewith.

Best Regards,

Bob Sullivan

Response to Comment

23. The "Grazing" subsection of Section 4.1.2.1 of the SEIS provides information that shows both long-term and short-term changes to habitat as a result of grazing. However, little definitive and focused research has been completed on the effects of cattle grazing on desert tortoises. The studies proposed in this SEIS would help inform USFWS, BLM, and CDFW recovery efforts. These studies also may assist the allotment operator in revising grazing management practices to accommodate both cattle and tortoises. Moreover, these studies are encouraged by the revised desert tortoise recovery plan (USFWS 2011a).

24. The Marine Corps is actively seeking to conclude the project. However, the Marine Corps understands public concerns regarding tortoise protection and conservation, and is taking active steps to work through any concerns related to proposed tortoise translocation. The Marine Corps is also committed to working with its neighbors and stakeholders throughout the NEPA process. The MCAGCC website is updated as new information related to the 2012 EIS becomes available.

Comment ID: M-18 **Received: September 19, 2016**

Dear SEIS Team and Commanding General Major General Lewis A. Craparotta 29 Palms Marine Base
September 19 2016
I received Your Latest update "September 15 2016" "Supplemental Environmental Impact Statement (SEIS) at 29 Palms. Sorry to say Parts of Your plan won't work! Number one the Marines Need their Training Grounds open and ready for use now. It will not happen with this plan. Expect endless Law Suites And the Marine Corps Name Dragged in the Ground. You must either leave The Tortoise in Place or You can review the Plan I have added to my letter Packet. I have added Expert information to prove my point.
I have lived in the High Desert 35 years. We have had legally Adopted Mojave Desert Tortoises before we moved on our Property in Phelan Ca. 35 years ago. We have had five Tortoises for all this time. All are in Good health and have lived outside in The Desert in their own Habitats all these years. Tortoises are user friendly and very easy to move. There is no reason to lose any tortoises from the new training Grounds. You need to leave them in Place or Move them to a Permanent Enclosed Habitat They need to be placed in a Small Habitat for a year or so then released into the Full Habitat to comingle with the rest of the Tortoises that were formally in their old range.
13. Do tortoises migrate?
Migration refers to movement to a particular place for a particular purpose, such as feeding or breeding, and then migrating back to the former site. I do not think that migration is an appropriate term to use for tortoise movements. Each tortoise has a home range or activity area. A home range is the area in which a tortoise travels, feeds, sleeps, courts, and has its burrows. This is the area with which the tortoise is familiar. Large tortoises have large home ranges and small tortoises have small home ranges. Females are more sedentary than males and do not move about as much, so they probably have smaller home ranges. Large males are known to occupy home ranges over 0.75 square mile. 1
Tortoises appear to have a good sense of "compass direction." They also are very familiar with local landmarks. They can travel to find burrows in a straight line. They also know locations of other tortoises (e.g., males know the location of females), drinking sites, mineral licks, and particular food sources.
Some people, upon seeing tortoises cross roads in spring, think that tortoises are "migrating." Actually, 'the tortoises are merely living in close proximity to the highways and roads and will travel across them during the course of moving about the home range.
I moved all my Tortoises several years ago. I gave them more room and they all got the new Nevada BLM Burrows.(Plans included in this packet) A 4X8 foot piece of Plywood is placed in the Ground making a Four foot deep Burrow that is quickly adopted by the Tortoises. All five of my Tortoises moved in the night of the changeover. That is the number on reason Moved Tortoises die in a move. NO BURROWS!! I have added the design packet and pictures of my Tortoises in there Burrows. Burrows installed facing west allow the Tortoises to gently warm there self's up in the morning before coming out for Food, water or wandering about.
The 29 Palms Marine base has an outstanding reputation of Protecting their Wildlife. Including a very fine herd of Desert Bighorn Sheep. They are also experienced in working with Desert Tortoises.

Response to Comment

Thank you for your comments, recommendations, and supplemental information.

1. As discussed in Section 1.1 of the SEIS, translocation was part of the original proposed action that was evaluated in the 2012 EIS and committed to in the 2013 Record of Decision (ROD). The translocation is a requirement of the 2012 Biological Opinion (BO) issued by USFWS and the 2013 ROD.

   As discussed in Section 2.5.2 of the SEIS, an alternative involving training without translocation would result in a loss of tortoises and tortoise habitat that is not compatible with recovery of this threatened species and would not satisfy the measures outlined in the 2012 Land Acquisition BO or the 2013 ROD.

   The Marine Corps has consulted with USFWS and coordinated with BLM and other agencies on selecting high quality recipient sites. The recipient sites (which in some instances occur within or adjacent to the Combat Center) were selected based on site selection criteria (described in Sections 2.1.1.1, 2.2.1.1, and 2.3) derived from USFWS guidance on tortoise translocation, including measures of habitat quality. Given the choice of high quality habitat in all proposed recipient areas (which includes the existence of resident tortoises, existing burrows, adequate soils for construction of new burrows and water catchments, and a native seed bank to provide forage), artificially enhancing habitat quality has been determined to not be necessary. Additionally, USFWS translocation guidance does not require artificial enhancement of habitat quality, including but not limited to the provision of burrows, water catchments, forage, or shade.

Comment ID: M-18 (continued) **Received: September 19, 2016**

My suggestion is to ""not"" remove any Tortoises from the base. Build a Compound for a Permanent home for them. My Design would keep this Tortoise Community intact Perpetually. At some future Date they could be relocated or if their home old home is once again usable for them say many years later all that is needed is to take down the fence and leave. They will over a few years repopulate there old range. By leaving them on base no EIR should be needed and No BLM< USFW or CAFW. The Marines Training could Start Right away.
Sorry to say all these outside Agencies have a bad reputation of a high death rate on moved tortoises. I am Retired and will be happy to come to the Base and explain my plan in Full. My time is 100% Free and so are my expenses to get there. 2
A few of the examples of the Local BLM`s Screw ups. Ivanpah Solar. There people said there were two Tortoises on the Property. There were actually two hundred. No one knows what happened to them? Next Fort Irwin. The Tortoises were removed and dumped in the Desert. 90% Kill off. Now the BLM is trying again. You have multiple Law Suites agents The Marine Base. The Word is out. The BLM and there sub Contractors are Complete Failures. Please look over my Packet. You need to do this in house with your own team.
Sincerely Yours William L. Tuck Jr
6790 Cambria Road
Phelan California 92371
Wltuck44@hotmail.com
760 9648095

Response to Comment

2. The proposed action in the SEIS is intended to satisfy the requirements of the 2012 BO, which requires translocation of tortoises from medium- and high-impact training areas in newly acquired lands at the Combat Center to mitigate effects on the desert tortoise. As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012).

Comment ID: M-18 (continued) **Received: September 19, 2016**

According to the Draft Supplemental Environmental Impact Statement September 2016 there will be no Citizen oversight or a Web Page reporting information on The Project to the Public. To me this is a Cover up. None of the Federal or State Agencies including The Department of The Navy or Marine Corps can fully be Trusted. Without this oversight the Project should not go forward. These Tortoises belong to the American People as well as The Land. You are our employees and You are Accountable to us.

William Tuck Jr

6790 Cambria Rd

Phelan California

92371

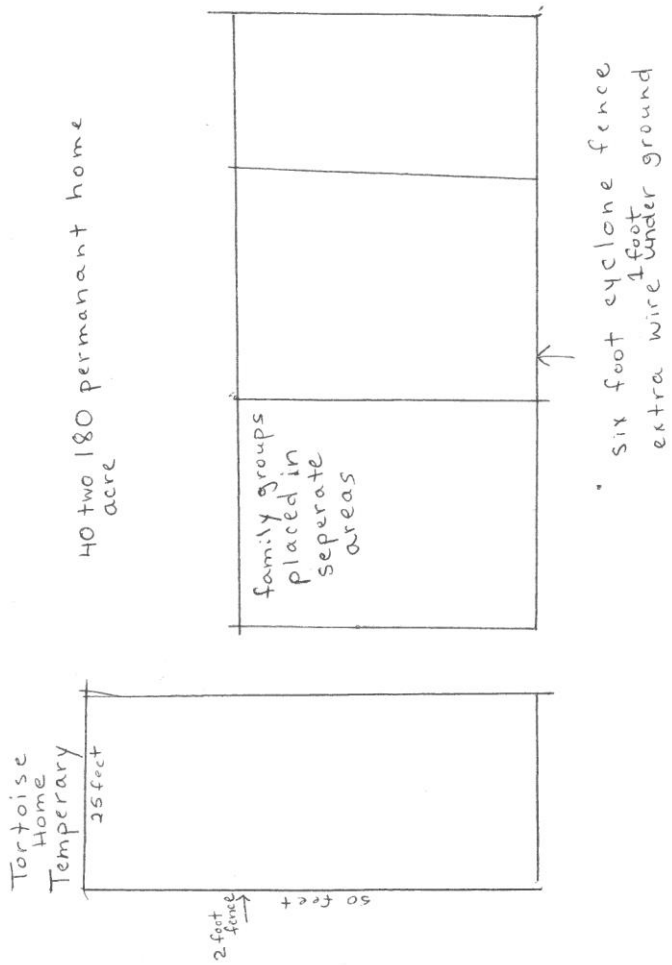
760 8685837

Wltuck44@hotmail.com

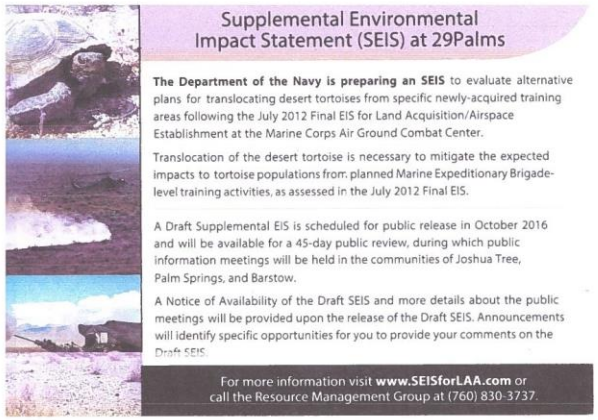
Response to Comment

Comment noted.

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**



Comment ID: M-18 (continued) **Received: September 19, 2016**



Supplemental Environmental Impact Statement (SEIS) at 29Palms

The Department of the Navy is preparing an SEIS to evaluate alternative plans for translocating desert tortoises from specific newly-acquired training areas following the July 2012 Final EIS for Land Acquisition/Airspace Establishment at the Marine Corps Air Ground Combat Center.

Translocation of the desert tortoise is necessary to mitigate the expected impacts to tortoise populations from: planned Marine Expeditionary Brigade-level training activities, as assessed in the July 2012 Final EIS.

A Draft Supplemental EIS is scheduled for public release in October 2016 and will be available for a 45-day public review, during which public information meetings will be held in the communities of Joshua Tree, Palm Springs, and Barstow.

A Notice of Availability of the Draft SEIS and more details about the public meetings will be provided upon the release of the Draft SEIS. Announcements will identify specific opportunities for you to provide your comments on the Draft SEIS.

For more information visit **www.SEISforLAA.com** or call the Resource Management Group at (760) 830-3737.

Response to Comment

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**

Letter to the Editor Victorville Daily Press September 2016

Barstow BLM Destruction of the Desert Tortoise
The Mojave Desert Tortoise continues its Decline. Over 40% most recently. The Barstow BLM leads the way in its destruction. I have met and seen their spokes person from their office. Both times he stated just gather up the Tortoises from the project and take them out in the Desert and dump them. They are using Millions of dollars of our tax money to accomplish this destruction. There Spending should be audited by The BLM Inspector General and FBI. Remember the Fort Irwin BLM Project. They literally did that. Took Tortoises from Fort Irwin and dumped them in The Desert. Some tried to get home while others were killed by Ravens, Coyotes and the elements. Extreme suffering and Animal Cruelty was inflicted on these creatures. Over a 90% Kill rate. The latest was 29 Palms Marine Expansion. A Much needed Training area for the Marines. BLM Plan takes them near the Newberry Mountains and dumps them. It didn't work. There are numerous Law suits filed agents them. This is the last straw form me. They have actually reached the point of affecting National Security. As soon as the new Presidential Administration is sworn in and we get a new Secretary of the Interior I will be filling a Complaint. By the way tortoises can be moved with a 90 % success rate and for a very Low cost!

Bill Tuck Jr
6790 Cambria Rd.
Phelan, Ca. 9237i 760 9648095

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**

YARD PREPARATION

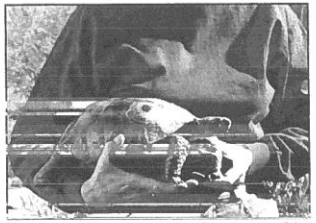


Figure 10. Move a tortoise by approaching from the front, holding it level. Support the legs and feet to carry it for longer distances.

Fertilizers and Poisons

Dry fertilizer can be hazardous. Tortoises may accidentally eat it while grazing or may drink it in solution from puddles at the base of shrubs. We suggest you use liquid fertilizer (such as *Miracle-Gro*) when tortoises are active. Do not use snail bait, weed or pest sprays, or systemic poisons.

Male Tortoises

If you have more than one adult male tortoise, don't expect them to get along. Fighting will probably occur because most yards are too small for more than one male. Fighting can lead to injury, death, or constant stress. The situation may never change as long as the two can reach each other, so they must be permanently separated. Females seldom fight.

SELECT A LOCATION FOR THE BURROW

Underground Burrow

Do not expect a tortoise to pick the proper place for a burrow. In fact, your tortoise may not attempt to dig a burrow or, because of the caliche layers and compaction, the tortoise may not be able to dig to an adequate depth. The place the tortoise chooses to dig may not be safe or healthy, such as where the soil is damp, against a fence, or under a woodpile that may collapse. In almost all cases, **you** should choose the place and **you** should dig the burrow.

- Find or create a dry area that is at least 15' x 15'. This area will provide the needed dryness in the burrow plus a dry margin all around it that is 5' from any major drainage way, pavement, soil where rain drains off the roof or any plants that are irrigated, including with a drip system. Only rain directly from the sky should fall on the burrow. Damp soil is unhealthy for the tortoise. **The inside of the burrow must remain dry**.
- Tortoises are natural burrowers. Expect your tortoise to lengthen its burrow. So, if the burrow must be dug near a wall, it should be at least 5' away and either parallel to it or the opening should face the wall. This way as the tortoise lengthens the burrow, it will extend into your yard and you will have control of the soil over it. If the burrow were to extend under your fence and into your neighbor's yard, the burrow might run into wet soil. You can't control your neighbor's irrigation, digging, or the digging of their dog.
- Try not to have the opening face north, northwest, or west, where the setting sun will shine into the burrow in summer. The burrow should not face uphill. If you are digging more than one burrow side by side, the long sides should be parallel and at least 3' apart.

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**

YARD PREPARATION

DIG THE BURROW

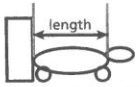
- Keep this pamphlet with you to follow the step-by-step instructions.
- Expect to spend several hours, even a whole day, on this project. Before you cover the burrow, a member of Tortoise Group needs to check it.

Burrow Size and Roof

See Table 1 for the size burrow and plywood you will need for the size tortoise you want or have. To support the roof soil, use a sheet of $^3/_4$" CDX plywood. Do not use pressboard, particleboard, or one or more pieces of plywood thinner than $^3/_4$".

Table 1. Burrow and Roofing Dimensions for Tortoises of Various Sizes

To measure tortoise size, back the tortoise against a wall and lay a ruler down the middle of the shell.
If you are making a burrow for a juvenile, you may want to use plywood with the next larger dimensions. This will save having to replace the plywood (as often) as the tortoise grows.



(Dimensions are in inches.)	Shell Length	Burrow Channel			Size of 3/4" plywood	Depth at end of ramp
		Width	Depth	Length		
Hatchling and Sm. Juvenile	1 3/4 - 3	See page 23 for making a hatchling burrow.				
Large Juvenile	4 1/2	4 1/4	2 3/4	24	36 x 48	12
	6	5 1/4	3 1/2			
	6 1/4	5 1/2	4			
Subadult	6 1/2 - 8	7 - 8	5	60 - 72	36 x 96	20
Adult	8 1/4 or more	9 - 11	7	60 - 72	36 x 96	20

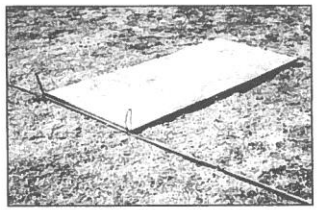


Figure 11. Markings must be visible until the burrow is complete.

Marking the Ground

Assure a tight fit of the plywood by carefully marking the ground. **Do not skip this step!** First mark the front edge of the burrow with four stakes.

1. Lay the plywood on the ground where you plan to dig the burrow.
2. Firmly pound stakes at the two front corners (front is the side with opening).
3. Extend the line at least two feet beyond the plywood in both directions, and pound in stakes at both ends.

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**

YARD PREPARATION

4. Tie the light rope to one of the far stakes. Keeping it taut and at ground level, wrap it around the base of the other 3 stakes, and tie it off.

Making the Eave

1. Carefully slide the plywood forward squarely across the rope. If the plywood is:
   8' long, slide it forward 15"
   4' long, slide it forward 10"
   2' long, slide it forward 4"
   When the burrow is finished, the wood will create an eave over the opening by sticking up above ground level. See Figures 12 and 16.
2. Pound in stakes at the rear corners of the plywood.
3. Run the rope tightly around the 4 main stakes to outline the remaining 3 sides of the board.
4. The outline within which you will dig is finished. Set the plywood aside.

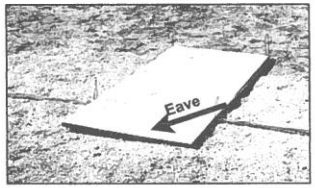


Figure 12. An overhang eave protects the burrow opening from rain and sun.

Digging the Ramp

The ramp will become the shelf on which the plywood roof rests. See Figures 13 and 14. Rent a small electric "soil breaker" (available from Home Depot) to cut the digging time almost in half, to about 4 hours for an adult burrow. We have found it worth the rental cost in caliche soil. Do not use water to loosen soil.

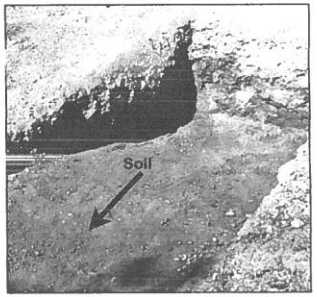


Figure 13. The smooth, rock-free ramp slopes down gradually.

1. Start digging at what will be the deep end and work to the front. See Table 1 for how far down to dig for plywood of different lengths. Stay just inside the rope line.
2. Create a smooth, even, and very gradual ramp from the deep end to the rope at the front. It is important to dig gradually, not too deep. Once you break the soil, it will not support plywood that will eventually rest on the outer edges of this ramp. The ground must be kept firm for support.

- There will be room for only one person to work.
- Do not consider using cement blocks, pieces of wood, or boulders to support the plywood. Tortoises tend to dig under such things, allowing the roof to settle and pin down the tortoise or allowing the supports to tip over and obstruct the channel.

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**

YARD PREPARATION

- Occasionally, because of loose soil, the walls collapse as you dig. If this happens, follow the directions on Information Sheet #8. Then skip to Page 13, *Loosening the Floor*.

3. Check for snug fit of the plywood on the ramp occasionally. Always slip in the plywood from the front, not from above. At first you may find it easier to use a length of 2" x 4" that is as long as the width of the plywood.

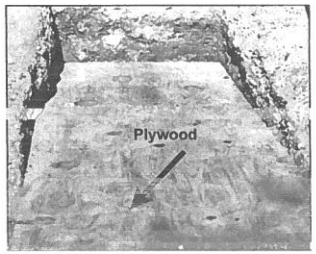


Figure 14. Plywood should rest tightly ***along the length and edges of the ramp.***

4. When the ramp is done, the surface should be smooth and rock-free, and about 15-20 degrees below horizontal ground level. See Figure 16. The plywood should just fit. Stand on the wood. If it rocks in any direction, remove ridges and fill depressions until the plywood rests tightly along the entire length. If the surface is not smooth, the plywood will eventually sag and may pin down the tortoise.

   At the front end of the burrow, the plywood sloping up from the bottom should touch the rope as it crosses it and then project above ground. Note: This step will make sense when you reach this point.

Making a Channel for the Tortoise

The channel is the underground area where the tortoise spends most of his time. See Table 1 for the dimensions and Figure 15 for how the channel should look when you finish. Figure 16 is a side view of a completed burrow, showing that the **plywood is the same distance above the tortoise all the way along the burrow channel**. The channel should be only slightly higher and slightly wider than the tortoise. The tortoise should not be able to turn around in the channel except at the far end. This snugness provides insulation and keeps air circulation at a minimum.

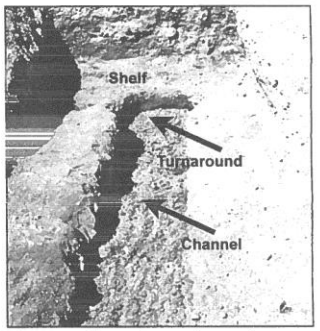


Figure 15. Channel must fit tortoise snugly except at the far end that widens for turning around.

1. Make a rear shelf for the plywood. For a tortoise 6 $^3/_4$" or longer, leave 12" of the ramp as the rear shelf for the plywood. For smaller tortoises, leave whatever remains after you have measured how long the burrow channel is to be, measuring from the front end.

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**

YARD PREPARATION

2. Dig the channel starting at the front end within the rope line. As you dig, do not stand on the ramp that is becoming the shelf for the plywood. It is very likely to collapse and not be repairable.
3. When the channel is finished, widen it slightly at the deep end so the tortoise can turn around. See Figure 15. Note that the floor of the channel is flat, not curved.
4. Replace the plywood. Have one person stand on it and another look into the burrow. No light should show through the cracks. If it does, make the necessary adjustments.

Loosening the floor. The last digging in the burrow is to loosen the soil in the floor of the channel to a depth of 6". The loose soil allows the tortoise to adjust the fit. Also, it is important for females who dig their nests in the burrow floor or just outside the opening. A rock on the floor of the channel could pin the tortoise to the roof and not allow it to move.

1. Start at the turn-around and finish about 10" beyond the burrow opening.
2. Crush lumps of soil, and remove roots and rocks larger than ½" in diameter. When you finish, the sides of the channel should be the same depth as when you started, as in Table 1.
3. Cover the excavation at ground level with the plywood until an Adoption Committee member checks it.
4. To keep the entire inside dry, cover the wood and beyond with a plastic sheet, like a painter's drop cloth. Weight it down in several places so it will not blow loose. This should be done each time you finish digging for the day. It may take several days. If the interior becomes wet, you may have to wait weeks until it dries before covering it and letting a tortoise use it. A waterproof cover on the pile of soil that will cover the plywood is a good idea, too.
5. If you already have a tortoise, put it in the turn-around, slide in the plywood, and make sure the tortoise can turn around and leave the burrow, just clearing the top and sides. Add or remove soil in the channel for the proper fit.

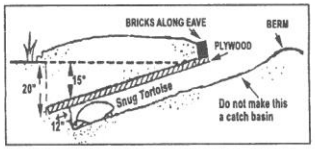


Figure 16. Cutaway of burrow showing channel slope and snug fit.

Covering the Burrow

If you are adopting from Tortoise Group, an Adoption Committee member must approve the burrow before you cover it. In hot weather, to trap the least amount of hot air and soil in the burrow, allow the burrow to remain uncovered the night before you plan to cover it. Begin to cover the burrow as early as possible the next morning, preferably before sun-up.

Purpose of the soil mound. The mound of soil over the plywood 1) insulates the tortoise from the extreme aboveground temperatures and 2) helps to prevent the burrow from flooding in heavy rainfall. So, the soil that covers the plywood should have as much water-holding capacity as possible. If more soil is needed to create the mound, do not use gravel or washed sand, because the water will drain right through it. In the Las Vegas area we can recommend a place that sells soil with high water-holding capacity (high clay content).

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**

1. Slide the plywood into place.
2. Shovel soil onto the plywood, packing it down as you go.
3. Remove rocks that are more than ½" in diameter and pack the soil very firmly and continually as you cover the plywood, as in Figure 17.

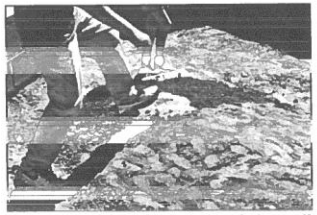


Figure 17. Mounded, packed rock-free soil helps keep out the rain.

4. When the excavation becomes filled to ground level, continue adding soil to create a mound above ground level. Allow the soil to extend onto firm, unexcavated ground for several inches. This helps to "seal" where you cut the surface.
5. Grade the surface of the mound so rain will not puddle on it. Add gravel only after the burrow mound is completed. Do not put any waterproof material or a roof over the mounded soil. It will make the burrow hotter.

Covering the Eave

Place stacked flagstone or bricks along the eave and pile soil behind them to protect the plywood and keep the soil and the tortoise from falling into the burrow opening. Never use small rocks that the tortoise could knock into the burrow opening. The level surface of the eave allows the tortoise to the burrow opening upside down (Fig. 18).

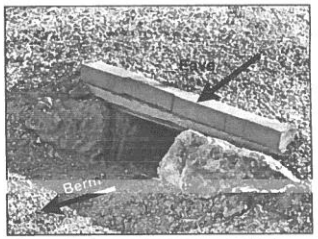


Figure 18. Berm allows water to flow away from burrow opening.

Creating a Berm

In front of the entire burrow opening, make a ridge of soil to help keep out flowing water. If built correctly, the tortoise will go up the outside of the berm and down the inside, directly into the burrow, as in Figure 18. There should be no depression in front of the burrow.

ABOVEGROUND BURROW

The aboveground burrow does not insulate the tortoise as well as one below ground so a dry, shaded area is a must. The burrow is built of cinder blocks with a plywood floor and ceiling. Soil is mounded at the sides and on the top to provide the necessary insulation.

Figure 19 shows an aboveground burrow. On the left the burrow is completed except for the covering soil. The right shows the rear view when the burrow is completed. This type of burrow will be at least 4' high and at least 10' x 6' at the base. See Page ii for securing Information Sheet #10, *The Aboveground Burrow*.

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**

YARD PREPARATION

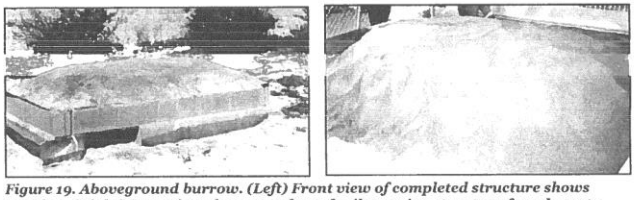


Figure 19. Aboveground burrow. (Left) Front view of completed structure shows opening. (Right) Rear view shows one foot of soil covering structure for adequate insulation.

BURROW PROBLEMS

Check Inside the Burrow

To see inside the burrow during the day, use a mirror to reflect sunlight into the burrow. At night, use a flashlight.

Damp Burrow

Damp or caked soil on your tortoise indicates a damp burrow. Check for flooding during heavy rains, summer and winter. If the burrow is flooded or muddy, remove the tortoise and expose the interior of the burrow to dry, winter or summer.

If the tortoise has dug beyond the plywood roof, the soil may have become saturated with rain and collapsed of its own weight covering, trapping, and smothering the tortoise. Make sure you can see the tortoise.

If you can't see the tortoise, call us to locate your tortoise with the Snooper, our Burrow Probe video camera that uses infrared light.

Flooding

If flooding occurs in winter the tortoise, being asleep, may drown. If the burrow floods or collapses in winter, see Substitutes for an outdoor burrow under *Hibernation*, Page 26.

Rarely is flooding caused by water running into the burrow opening but rather from rain-saturated soil around the burrow draining into the space occupied by the tortoise.

If flooding occurs when the days are hot, make sure there is a cool place for the tortoise during the heat of the day until the burrow is dry or you build another.

The Mojave Tortoise has been here over 2,000,000 years, originally living in moist woodland. The Mojave Desert did not form until about 4,500 years ago.

PROVIDE WATER

How Tortoises Drink

You never know when a tortoise needs a drink, so keep fresh water in a shallow, shaded dish at all times. A tortoise drinks by immersing its mouth and nose and swallowing repeatedly for as long as 15 minutes. Don't be alarmed.

Tortoises often urinate during or after drinking or eating. Along with watery urine, they may pass a white-to-lavender substance. See Figure 20. It may look gritty or like curdled milk. This is normal. Flush the urine from the water dish immediately. If on grass, hose it well into the lawn.

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**

http://www.tortoise-tracks.org/wptortoisetracks/about-the-desert-tortoise/commonly-asked-questions/

About the Desert Tortoise Preserve Committee

The Desert Tortoise Preserve Committee is a non-profit organization formed in 1974 to promote the welfare of the desert tortoise (*Gopherus agassizii*) in its native wild state. Committee members share a deep concern for the continued preservation of the tortoise and its habitat in the southwestern deserts.

Our Mission

The Desert Tortoise Preserve Committee is dedicated to the recovery and conservation of the Desert Tortoise (*Gopherus agassizii*) and other rare and endangered species inhabiting the Mojave and western Sonoran deserts.
We accomplish our mission through:

- Land Acquisition & Stewardship: acquiring, protecting, and restoring lands to support recovery of the desert tortoise, Mojave ground squirrel, burrowing owl and rare plants.
- Education: increasing awareness and understanding of desert tortoises, their natural habitat, and human activities impacting their populations.
- Research: promoting studies of the biology, habitat, and history of the desert tortoise and other rare species.
- Collaboration: working with organization members and donors, State and Federal government agencies, as well as community stakeholders to support the recovery and restoration of desert tortoises and the ecosystem in which they inhabit.

Our Vision

Desert Tortoises were once common throughout the Mojave and Sonoran deserts. Over the past century, the population has rapidly decreased due to human activity. The Desert Tortoise Preserve Committee, Inc. is working to reverse this trend in hopes that there will once again be stable populations of Desert Tortoises found throughout their geographic range.

How You Can Help

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**

The Desert Tortoise Preserve Committee, Inc. relies on support from its members and donors. Without this support, the hard work needed to implement Desert Tortoise conservation would not be possible. If you would like to help protect Desert Tortoises, Donate or Become a Member today! You can also learn more about the Human Impacts and Natural Problems which are contributing to the Desert Tortoise population decline.

COMMONLY ASKED QUESTIONS ABOUT THE DESERT TORTOISE AND ANSWERS

by Kristin H. Berry

Tortoise Tracks, Vol.11, No. 1, 1990.

1. What is the difference between a turtle and a tortoise?

In the United States the following distinction is made between the terms turtle and tortoise:

A tortoise is a land dwelling turtle with high domed shell and columnar, elephant-shaped hind legs. Tortoises go to water only to drink or bathe.

In contrast, the word turtle is used for other turtles: pond turtles, river turtles, box turtles, musk turtles, sea turtles, etc.

2. How many different kinds of tortoise occur in North America?

Three species of tortoises occur in the United States and a fourth is found in Mexico. The desert tortoise (*Xerobates* [*Gopherus*] *agassizii*) is found in the Mojave and Colorado/Sonoran deserts of California, southern Nevada, Arizona, southwestern Utah, and in Mexico. The Texas tortoise (*Xerobates* [*Gopherus*] *berlandieri*) occurs in southern Texas and northeastern Mexico. Some can be found in California, where they were sold in the past for pets. The third U.S. species is the Gopher or Florida tortoise (*Gopheruspolyphemus*), which lives in southwestern South Carolina, Florida, Georgia, Alabama, Mississippi, Louisiana, and extreme southeastern Texas. The fourth species is the Bolson tortoise (*Gopherus flavomarginatus*), which is found in a very small area in Chihuahua and Durango, Mexico.

3. What is the habitat of the desert tortoise in the southwestern U.S.?

Tortoises occupy a wide variety of habitats in the United States. We can make two generalizations about the habitats, however. Tortoises living north and west of the Colorado River-Grand Canyon complex (California, southern Nevada, southwestern

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**

Utah, and extreme northern Arizona) occur in valleys, flat areas, fans, bajadas and washes. These tortoises live in the Mojave and Colorado Deserts and are generally found below the 4,000 foot elevation in tree-yucca (Joshua tree and Mohave yucca) communities, creosote bush and saltbush scrub habitats, and in some ocotillo-creosote habitats. They occupy a wide variety of soil types, ranging from sand dunes to rocky hillsides, and from caliche caves in washes to sandy soils and desert pavements. The tortoise must have suitable soils and terrain for constructing a burrow and must have adequate annual and perennial plants in the spring and/or summer for forage.

Tortoises living in the Sonoran Desert of Arizona occupy entirely different habitats. They are found on the steep, rocky slopes of hillsides. The slopes may be covered with granitic or volcanic boulders and are often covered with dense vegetation. The palo verde-saguaro cactus is the most frequently occupied habitat, although some tortoises are found in oak woodlands and stands of heavy bunch grass.

4. When can one see tortoises in the California deserts? When are they active?

In general, tortoises hibernate from October through February and are underground in burrows during that time. On a warm sunny day, an occasional animal may be found near the mouth of a burrow in late fall or winter.

The prime activity period in the western Mojave Desert is the late winter and spring, from March through May. After this time, when daytime air and soil temperatures are elevated and over 90° F and the food supplies of annual plants have dried, a large percentage of tortoises become inactive and remain underground in burrows. Some will emerge a few times a week or once every two or three weeks, especially in early morning or late afternoon. Others will not come out of burrows until August or September, or when summer thundershowers trigger a brief flurry of above-ground activity. With summer rains, the tortoises will emerge from burrows to drink and travel.

Thus, if one wants to find tortoises in the western Mojave, one should look in prime habitats in spring. In early spring, tortoises are out from mid-morning to mid-afternoon, during the warm part of the day, As air temperatures rise, tortoises emerge from burrows earlier and retreat earlier. By May, tortoises may be out by 6:00 a.m. and back

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**

in burrows by 9:00 a.m. In late spring, tortoises may also be active in late afternoon. In summer, the best time to see them is during or after a thunderstorm.

In the eastern Mojave and Colorado Deserts, tortoises may also have a summer activity period, which is associated with summer rains and a summer food supply.

5. What is hibernation and what do tortoises do when they hibernate?

Hibernation for a tortoise is a period of inactivity, generally below ground in a burrow or den. The body temperature is lowered and is close to that of the air temperature in the burrow, about 40° F to 60° F. The heart rate, respiration rate and all bodily processes are slowed.

6. What do tortoises eat in the wild?

Tortoises are selective in choice of foods. Food preferences depend on locality and availability of food items. In general, tortoises in California feed on annual wildflowers, such as blazing stars, lupines, loco weeds, lotus, Indian wheat, forget-me-nots, desert dandelions, gilias, phacelias, coreopsis, alkali goldfields and many other species. They also eat annual and perennial grasses and fresh pads and buds of some species of cactus.

After the annual wildflowers have dried in spring, tortoises will eat the dried plants throughout late spring and into summer and fall. Consumption of dried plant material is somewhat dependent on the tortoise's state of hydration, and whether the tortoise has recently drunk water.

7. Do tortoises drink water in the wild?

Yes. Tortoises drink free water where it collects in pools near rocks or in depressions. Tortoises will dig depressions to collect the water and such depressions can often be seen on areas of desert pavement.

Tortoises can store water in the bladder, where it can be reabsorbed. During spring, summer, and fall rains, tortoises will drink and "freshen" the water stored in the bladder. Bladder water varies in color from clear and colorless to dark brown. Fresh

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**

water is clear and colorless; water that has been stored for some time is dark and concentrated.

8. When do females lay eggs and where?

In the wild, females usually lay one or more clutches of 1 to 14 eggs between mid-April and the first week of July. The size of the clutch depends on the size of the female, with small females producing smaller clutches than the larger females.

Females dig the nests with the hind legs and drop the eggs into the nest, placing them with the hind legs and covering them carefully. The location of an undisturbed nest cannot be detected by humans.

Nests are most often associated with the female's burrows. The nest may be in the burrow mound, the mouth of the burrow, or deep inside the tunnel.

9. How much time is required for eggs to hatch?

The eggs, which are the shape and size of ping pong balls, may hatch in 70 to 120 days. The timing is dependent on the location of the nest and how much warmth it receives, among other factors. Some clutches may overwinter and hatch in spring.

10. How large is the largest known desert tortoise? How are tortoises measured?

The largest known desert tortoise is a captive tortoise about 15 inches in length and is the property of the California Department of Fish and Game. It has been a pet for many years and was turned into the Fish and Game office in Long Beach in the 1970's.

The largest known wild desert tortoise on the Desert Tortoise Natural Area was about 14.5 inches. The tortoise was a male and was frequently observed on the western portion of the Natural Area in the 1970's.

Tortoises are measured with calipers. One end of the caliper is placed at the edge of the carapace (upper shell) immediately above the head, and the other end is placed on the carapace edge above the tail. The straight line distance is considered the length of the shell or carapace.

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**

11. What are tortoise burrows like?

Tortoise burrows vary considerably in length and type. The style of burrow appears to be dependent upon the region, soil type, and vegetation in which they are found. For example, burrows in Utah are of two basic types: deep winter dens in calotte caves in washes, some of which are 30 feet in length; and shallower summer burrows three to six feet in length in the flat areas. In the western Mojave Desert, tortoises have a variety of burrows. They use burrows about 2.5 to 1 0 feet in length for summer estivation and winter hibernation. They may use shallower burrows or pallets that just barely cover the shell in spring, summer, and fall also. These temporary burrows or pallets can be fragile and may be used for shelter for a few days while a tortoise is foraging in a particular area. A temporary burrow usually lasts from a few weeks to a season and then disintegrates.

Each tortoise usually has more than one burrow. The number of burrows the tortoise uses may depend on age and sex, as well as on the season. The burrow is usually the size and shape of the tortoise–half moon in shape and flat on the bottom. Small tortoises have small burrows and large tortoises have large burrows.

12. Why are tortoise burrows important?

The tortoise burrow provides protection from the extremes of heat, cold, lack of moisture, and too much moisture. The burrow is especially important because it provides (a) a cool place for the tortoise during the dry hot days in late spring and summer when water and food are unavailable and (b) a relatively "warm" site for winter hibernation. The tortoise spends most of its life in 'the burrow.

Burrows serve as protection from predators, such as common ravens, coyotes, kit foxes, golden eagles, and greater roadrunners.

13. Do tortoises migrate?

Migration refers to movement to a particular place for a particular purpose, such as feeding or breeding, and then migrating back to the former site.

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**

I do not think that migration is an appropriate term to use for tortoise movements. Each tortoise has a home range or activity area. A home range is the area in which a tortoise travels, feeds, sleeps, courts, and has its burrows. This is the area with which the tortoise is familiar. Large tortoises have large home ranges and small tortoises have small home ranges. Females are more sedentary than males and do not move about as much, so they probably have smaller home ranges. Large males are known to occupy home ranges over 0.75 square mile.

Tortoises appear to have a good sense of "compass direction." They also are very familiar with local landmarks. They can travel to find burrows in a straight line. They also know locations of other tortoises (e.g., males know the location of females), drinking sites, mineral licks, and particular food sources.

Some people, upon seeing tortoises cross roads in spring, think that tortoises are "migrating." Actually, 'the tortoises are merely living in close proximity to the highways and roads and will travel across them during the course of moving about the home range.

14. When do tortoises court and mate?

Male tortoises generally court female tortoises whenever the opportunity presents itself, e.g., in spring, summer, or fall. There does not appear to be a well defined "mating season."

Male tortoises may court and mount the females, but not actually copulate. Don't assume that mating is occurring because you see a male mounted on a female. The subject is complex and deserves much more study.

15. How does one distinguish a male from a female tortoise?

Sex is difficult to determine until the tortoise is about 7 inches in carapace length. Male tortoises develop chin glands or knobs on the chin, a longer gular horn, have a longer tail, and have a concave plastron (a dish-shaped depression on the posterior, underside of the shell).

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**

Females have longer toenails (maybe for digging nests), a small gular horn, and no obvious chin glands.

16. What predators eat tortoises?

The type of predator varies depending on the age and size of the tortoise. There are egg predators, such as the Gila monster, kit fox, coyote, and badger. Predators of juveniles include ravens, roadrunners, some snakes, kit foxes, bobcats, badgers, coyotes, and probably the spotted skunk.

The larger the tortoise, the more likely it will be able to resist predation. Large tortoises may be eaten by kit foxes, badgers, bobcats, coyotes and golden eagles. The large mammalian predators are not likely to eat tortoises unless other food sources, such as rabbits and rodents, are in short supply. Coyotes and kit foxes may dig tortoises out of their burrows to eat. These predators can eat the tortoise without breaking open the shell.

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**

Comment ID: M-18 (continued) **Received: September 19, 2016** **Response to Comment**

Comment ID: Website (W)-19 **Received: October 7, 2016**

Comment ID: 1
Name: mandy baker
Email Address:
Comment: I think it's shameful that the Marines are so insensitive as to want to move 1500 tortoises, already on the endangered species list, just so they can blow things up. The article I read said the tortoises "should" survive. Had. Should and will are miles apart. From what I read, they will be in increased danger from predators, increased competition for food and other resources. Surely the Marines can find someplace else for their drills. If they persist, they will no longer be the heroes I have always thought them to be.
State:
Mailing List? Yes
Attachment: No
Don't use name? Yes
Date Received: 10/7/2016 3:34:47 PM CT
Prefer Email: No
Prefer: Mail: No
Sensitive Info: No

Response to Comment

Thank you for your comment.

As discussed in Section 1.1 of the SEIS, translocation was part of the original proposed action that was evaluated in the 2012 EIS and committed to in the 2013 Record of Decision (ROD). The translocation is a requirement of the 2012 Biological Opinion (BO) issued by USFWS and the 2013 ROD. Since then, the Marine Corps has conducted additional detailed studies and worked cooperatively with the USFWS, the California Department of Fish and Wildlife, and the BLM on refined translocation plans, as required in the 2012 BO issued by the USFWS.

As discussed in Section 2.5.2 of the SEIS, an alternative involving training without translocation would result in a loss of tortoises and tortoise habitat that is not compatible with recovery of this threatened species and would not satisfy the measures outlined in the 2012 Land Acquisition BO or the 2013 ROD.

The SEIS evaluates factors that increase the risk of predation and describes measures that will be taken to reduce such risks. Proposed recipient sites were carefully selected based on the site selection criteria outlined in SEIS Sections 2.1.1.1, 2.2.1.1, and 2.3 to ensure that they can support additional tortoises, as well as continue to support resident tortoises.

The implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act. As discussed in Section 2.5.1 of the SEIS, foregoing training in the expansion area would not meet the purpose and need for the proposed action in this SEIS.

Comment ID: W-20 **Received: October 17, 2016**

Comment ID: 2
Name: laura ross
Email Address:
Comment: very disturbing to read article about movement of 1500 tortoises for purpose of marine training. this is not the movement of 5 or 10, but 1500. tortoises that have established communities for longer than most of us have been alive. they are subject to stress in the move which undoubtedly will kill many. whomever stated it will have little impact cannot be someone with any education in this department. and should not make such a claim. I am married to an environmental planner who has an extensive knowledge base of this type of occurrence, as well as the population being affected, and he agreed it will kill most. amazing that the marine corp cannot move their training location, but that the answer is to move the tortoise population. I can only hope and pray for this population that enough people do research to see this is not a simple task without serious repercussions.
Address 1:
City:
State:
Postal Code:
Mailing List? No
Attachment: No
Don't use name? No
Date Received: 10/9/2016 2:16:11 PM CT
Prefer Email: No
Prefer: Mail: No
Sensitive Info: No

Response to Comment

Thank you for your comment.

As discussed in Section 1.1 of the SEIS, translocation was part of the original proposed action that was evaluated in the 2012 EIS and committed to in the 2013 Record of Decision (ROD). The translocation is a requirement of the 2012 Biological Opinion (BO) issued by USFWS and the 2013 ROD. Since then, the Marine Corps has conducted additional detailed studies and worked cooperatively with the USFWS, the California Department of Fish and Wildlife, and the BLM on refined translocation plans, as required in the 2012 BO issued by the USFWS.

As described in Section 2.2.2.3 of the SEIS, tortoises would be released in a spatial distribution similar to capture distribution to better maintain social connections that may exist between individual tortoises.

As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

As discussed in Section 2.5.2 of the SEIS, an alternative involving training without translocation would result in a loss of tortoises and tortoise habitat that is not compatible with recovery of this threatened species and would not satisfy the measures outlined in the 2012 Land Acquisition BO or the 2013 ROD.

The implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

Comment ID: W-21 **Received: November 11, 2016**

Comment ID: 3
Name: Jason Lambert
Email Address:
Comment: Please remove me from any physical mailings. Thank you,Jason
Address 1:
City:
State:
Postal Code:
Mailing List? No
Attachment: No
Don't use name? No
Date Received: 10/15/2016 1:00:00 PM CT
Prefer Email: No
Prefer: Mail: No
Sensitive Info: No

Response to Comment

Thank you for your comment; comment noted.

Comment ID: W-22 **Received: November 12, 2016**

Comment ID: 4
Name: Tim Casey
Email Address:
Comment: Why would they relocate what would become a more concentrated population of Tortoise to multiple sides of an OHV area? This action would greatly increase the chances of injury or death to the Tortoise. This is a very short sighted and hypocritical way to handle this situation. Any Tortoise problems can now be blamed on the OHV users. When that happens that land will be taken from us also.
Organization:
Address 1:
City:
State:
Postal Code:
Mailing List? Yes
Attachment: No
Don't use name? No
Date Received: 10/17/2016 5:27:33 PM CT
Prefer Email: No
Prefer: Mail: No
Sensitive Info: No

Response to Comment

Thank you for your comments.

As discussed in Section 2.1.2.2 and 2.2.2.2, tortoise exclusion fencing would be installed to keep translocated desert tortoises out of the OHV areas. In addition, a fence along the west side of Camp Rock Road in the Cinnamon Hills and Anderson Dry Lake areas will be added as a potential mitigation measure in the Final SEIS for consideration in the ROD; this should reduce illegal OHV use that could pose additional impacts to translocated desert tortoises and their habitat.

The Marine Corps is the proponent for this action. To the extent mortality occurs as a result of translocation, it would be accounted for in the Biological Opinion, issued to the Marine Corps, associated with this action.

Comment ID: W-23 **Received: October 18, 2016**

Comment ID: 5
Name: Martin Keefe
Email Address:
Comment: Please REMOVE me from this mailing list. Thank you.
Address 1:
City:
State:
Postal Code:
Mailing List? No
Attachment: No
Don't use name? Yes
Date Received: 10/18/2016 2:48:21 PM CT
Prefer Email: No
Prefer: Mail: No
Sensitive Info: No

Response to Comment

Thank you for your comment; comment noted.

Comment ID: W-24 **Received: November 2, 2016**

Comment ID: 6
Name: Mike Vickers
Email Address:
Comment: I know this will not count in your standings but you should just leave the tortoise as is and give the land back to the off road community. But since you won't do that, you should at least "lobby Congress hard" to open up an equal amount of land that is locked up and the public can't use. (i.e. Wilderness lands and the like in the area). There are lots of 4wd org's to help you.Just my opinion but I think your boundaries would be more respected instead of resented.
Address 1:
City:
State:
Postal Code:
Mailing List? Yes
Attachment: No
Don't use name? No
Date Received: 10/20/2016 6:14:26 PM CT
Prefer Email: No
Prefer: Mail: No
Sensitive Info: No

Response to Comment

Thank you for your comment.

As discussed in Section 2.5 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

The creation of new OHV areas is outside the scope of this SEIS.

Comment ID: W-25 **Received: November 2, 2016**

Comment ID: 7
Name: Alissa Rice
Comment: When relocating the desert tortoises, will amble food, water and shelter be available? What safety measures will be implemented to protect the tortoise from roadways?
State:
Mailing List? No
Attachment: No
Don't use name? No
Date Received: 10/29/2016 11:43:13 AM CT
Prefer Email: No
Prefer: Mail: No
Sensitive Info: No

Response to Comment

Thank you for your comment.

Proposed recipient sites were carefully selected based on the site selection criteria outlined in SEIS Sections 2.1.1.1, 2.1.1.2, 2.2.1.1, and 2.3 to ensure that (1) they can support additional tortoises, as well as continue to support resident tortoises; (2) there are adequate soils for construction of new burrows and water catchments, and a native seed bank to provide forage; and (3) sites are located away from busy roadways.

Comment ID: W-26 **Received: October 15, 2016**

Comment ID: 8
Name: Phyllis Keithley
Email Address:
Comment: I do not agree with relocating the tortoises. We have been coming to Johnson Valley desert for 30 years. We have seen only 2 in the past year. Whatever you are doing it is wrong and you are diminishing the amount of tortoises. We, desert goers, usually stop and move a tortoise. I don't see you doing that in anyway. There is no way you can find them and move them all, as well. Maybe just stick to the areas you are already in and where you have already killed them and not move into our areas.
Address 1:
City:
State:
Postal Code:
Mailing List? No
Attachment: No
Don't use name? No
Date Received: 11/2/2016 10:08:15 AM CT
Prefer Email: No
Prefer: Mail: No
Sensitive Info: No

Response to Comment

Thank you for your comment.

The Marine Corps understands public concerns regarding tortoise protection and conservation, and is taking active steps to work through any concerns related to proposed tortoise translocation. The Combat Center has a strong record of environmental stewardship, including protection of desert tortoises.

The proposed action in this SEIS is to translocate tortoises out of harm's way as required in a 2012 Biological Opinion issued by the U.S. Fish and Wildlife Service. Methods for locating desert tortoises during clearance surveys and post-translocation clearance surveys are described in SEIS Sections 2.1.2.4, 2.2.2.3, and 2.2.2.4; and translocation methods are described in SEIS Sections 2.1.2 and 2.2.2.

As discussed in Section 2.5 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

Comment ID: W-27 **Received: November 13, 2016**

Comment ID: 9
Name: Barbara LaGrange
Email Address:
Comment: I don't know why BLM thinks moving over 1000 tortoises will work since they have a mind of their own and are nomadic. Most will try to go back to their home sites. Maybe Plan #3 is best of the worst.Planting tortoises near Rodman is safer since the military factions are told to stay away from government owned antenna farms on Rodman.But now they will be subjected to more ATCs and motorcycles. It's a lose-lose-lose plan.
City:
State:
Postal Code:
Mailing List? Yes
Attachment: No
Don't use name? No
Date Received: 11/2/2016 3:10:16 PM CT
Prefer Email: No
Prefer: Mail: No
Sensitive Info: No

Response to Comment

Thank you for your comment.

As discussed in Section 1.1 of the SEIS, translocation was part of the original proposed action that was evaluated in the 2012 EIS and committed to in the 2013 Record of Decision (ROD). The translocation is a requirement of the 2012 Biological Opinion (BO) issued by USFWS and the 2013 ROD.

Proposed recipient sites for translocated tortoises were carefully selected based on the site selection criteria outlined in SEIS Sections 2.1.1.1, 2.1.1.2, 2.2.1.1, and 2.3 to ensure that (1) they can support additional tortoises, as well as continue to support resident tortoises; (2) there are adequate soils for construction of new burrows and water catchments, and a native seed bank to provide forage; (3) sites are located away from busy roadways, and (4) to ensure that land uses (including OHV use) in recipient areas would be compatible with the proposed translocation. As discussed in Section 2.1.2.2 and 2.2.2.2, tortoise exclusion fencing would be installed to keep translocated desert tortoises out of the OHV areas. In addition, a fence along the west side of Camp Rock Road in the Cinnamon Hills and Anderson Dry Lake areas will be added as a potential mitigation measure in the Final SEIS for consideration in the ROD; this should reduce illegal OHV use that could pose additional impacts to translocated desert tortoises and their habitat.

As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

Comment ID: W-28 **Received: November 10, 2016**

Comment ID: 10
Name: Richard Steinbruecker
Email Address:
Comment: This is fact that you may already know. Several years ago I read a couple of articles about the construction of two solar panel sites, One was east of San Diego, and the other one was off the 15 freeway on the way to Vegas. Kit foxes were getting sick/dieing in the area around the construction site.The other site where desert tortoises were moved, a large number of animals died. This was a while back. I talked to Arron Adams this week and said I would send my comments in. Hope this helps.X Marine here
Organization: SCV trail ride member
Address 1:
City:
State:
Postal Code:
Mailing List? Yes
Attachment: No
Don't use name? No
Date Received: 11/4/2016 5:51:41 PM CT
Prefer Email: No
Prefer: Mail: No
Sensitive Info: No

Response to Comment

Thank you for your comment.

As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

Comment ID: W-29 **Received: October 29, 2016**

Comment ID: 11
Name: Cathy O'Leary Carey
Email Address:
Comment: Thank you for the opportunity to comment on the Draft Supplemental Impact Statement for translocating tortoises from newly-acquired training areas.I have no opposition to this SEIS as long as the plan does not disturb the serenity and protection of flora and fauna of Joshua Tree National Park.Although your documents have shown success with previous translocations of tortoises programs, I have reservations on about how such an ancient animal can adapt to a new environment.Cathy O'Leary Carey
Organization: Mrs.
Address 1:
City:
State:
Postal Code:
Mailing List? Yes
Attachment: No
Don't use name? No
Date Received: 11/10/2016 5:04:23 PM CT
Prefer Email: No
Prefer: Mail: No
Sensitive Info: No

Response to Comment

Thank you for your comment.

As described in Chapter 2 of the SEIS, none of the proposed recipient or control sites would be located within or near Joshua Tree National Park.

As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

Proposed recipient sites for translocated tortoises were carefully selected based on the site selection criteria outlined in SEIS Sections 2.1.1.1, 2.1.1.2, 2.2.1.1, and 2.3 to ensure that (1) they can support additional tortoises, as well as continue to support resident tortoises; (2) there are adequate soils for construction of new burrows and water catchments, and a native seed bank to provide forage; (3) sites are located away from busy roadways, and (4) to ensure that land uses (including OHV use) in recipient areas would be compatible with the proposed translocation.

Comment ID: W-30 **Received: October 9, 2016**

Comment ID: 12
Name: Greg Dickson
Email Address:
Comment: Your plans for the translocation of tortoises seem very thorough, and I thank you for that. It seems that Alternative 1 would be best, simply because it includes the Bullion recipient site. This is the most remote location of the possibilities you have listed, especially because it is distant from the OHV location. Speaking of which, you state that the tortoises will be isolated from the OHV site by containment fences, but there are many users of the OHV location who not respect fences, or even see them as challenges. The fences must be particularly robust there.A couple of other points. First, there is mention of protecting the tortoises from predation by ravens and coyotes. The passage on coyotes mentions trapping, and I remind you that it is illegal to use leg traps in California. Only nets and cages are allowed, but I imagine you knew that already. Also, a particular biologist, Tim Shields, has been developing a number of ways to keep ravens away from tortoises without killing the ravens. A summary of his work is in this article: https://www.theguardian.com/technology/2016/nov/01/mojave-desert-tortoise-california-endangered-lasers-ravens. But you probably already knew that, too. Finally, thanks again for taking so much time and expending so much effort to solve the problem of tortoise translocation. I feel the little critters are in good hands.
Address 1:
City:
State:
Postal Code:
Mailing List? Yes
Attachment: No
Don't use name? No
Date Received: 11/11/2016 7:30:47 PM CT
Prefer Email: No
Prefer: Mail: No
Sensitive Info: No

Response to Comment

Thank you for your comment.

The decision on which alternative is carried forward will be made in the Record of Decision. Alternative 2 is the preferred alternative and takes into account the most recent USFWS guidance on translocation, as described in SEIS Section 2.3.

Proposed fences have different purposes (i.e., restricting movement of tortoises and preventing OHV access), as described in SEIS Section 2.2.2.2. In addition to fences, Conservation Law Enforcement Officers would patrol recipient and control sites as described in SEIS Section 2.2.3.

Any and all predator control would be conducted in compliance with all applicable regulations.

Comment ID: W-31 **Received: November 4, 2016**

Comment ID: 13
Name: Julia Franco
Email Address:
Comment: Alternative 1 seems the best solution.
Address 1:
City:
State:
Postal Code:
Mailing List? Yes
Attachment: No
Don't use name? No
Date Received: 11/12/2016 9:49:02 PM CT
Prefer Email: No
Prefer: Mail: No
Sensitive Info: No

Response to Comment

Thank you for your comment.

The decision on which alternative is carried forward will be made in the Record of Decision. Alternative 2 is the preferred alternative and takes into account the most recent USFWS guidance on translocation, as described in SEIS Section 2.3.

Comment ID: W-32 **Received: October 20, 2016**

Comment ID: 14
Name: Christopher Lish
Comment: Sunday, November 13, 201629 Palms SEIS Project Teamc/o Cardno Government Services3888 State Street, Ste. 201Santa Barbara, CA 93105Subject: Please reconsider translocation of desert tortoises -- Supplemental Environmental Impact Statement (SEIS) for Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at Marine Corps Air Ground Combat Center Twentynine Palms, CaliforniaDear U.S. Marine Corps Twentynine Palms SEIS Project Team,I am writing to urge you to rethink your training strategy within the Twentynine Palms expansion area to look at alternative ways to train that are compatible with desert tortoise conservation. The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during drought. Such a move could doom 50 percent of both the relocated and resident tortoises to death. This is unacceptable. This is a federally and state-protected species."Every man who appreciates the majesty and beauty of the wilderness and of wild life, should strike hands with the farsighted men who wish to preserve our material resources, in the effort to keep our forests and our game beasts, game-birds, and game-fish--indeed, all the living creatures of prairie and woodland and seashore--from wanton destruction. Above all, we should realize that the effort toward this end is essentially a democratic movement."-- Theodore RooseveltIf you do go forward with the relocation at all, any impacts to desert tortoise populations on the base or BLM-managed public lands must be fully offset by acquiring, protecting and managing additional desert tortoise habitat in the western Mojave Desert. I urge you to join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction spiral."A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."-- Aldo LeopoldThank you for your consideration of my comments. Please do NOT add my name to your mailing list. I will learn about future developments on this issue from other sources.Sincerely,Christopher LishSan Rafael, CA
City:
State:
Postal Code:
Mailing List? No
Attachment: No
Don't use name? No
Date Received: 11/13/2016 10:01:44 PM CT
Prefer Email: No
Prefer: Mail: No
Sensitive Info: No

Response to Comment

Thank you for your comments.

The proposed action in the SEIS is intended to satisfy the requirements of the 2012 Biological Opinion and 2013 Record of Decision, which require translocation to mitigate significant effects on the desert tortoise from the 2012 EIS proposed action. As discussed in Section 2.5.1 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively. As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

As discussed in Section 2.5.2 of the SEIS, an alternative involving training without translocation would result in a loss of tortoises and tortoise habitat that is not compatible with recovery of this threatened species.

Comment ID: W-33 **Received: November 14, 2016**

CENTER *for* BIOLOGICAL DIVERSITY *Because life is good.*

protecting and restoring natural ecosystems and imperiled species through science, education, policy, and environmental law

Submitted via Website

November 14, 2016

29Palms SEIS Project Team,
c/o Cardno Government Services,
3888 State Street, Ste. 201,
Santa Barbara, CA 93105.
http://www.seisforlaa.com/Comments.aspx

RE: Comments on the Draft Supplemental Environmental Impact Statement for Land Acquisition and Airspace Establishment To Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at the Marine Corps Air Ground Combat Center, Twentynine Palms, California (81 FR 67334)

To whom it concerns:

These comments are submitted on behalf of the Center for Biological Diversity's 1.1 million staff, members and supporters throughout the western states, regarding the Draft Supplemental Environmental Impact Statement for Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at Marine Corps Air Ground Combat Center Twentynine Palms, CA (81 FR 67334), issued by the Marine Corps Air Ground Combat Center (MCAGCC), Twentynine Palms, CA. The Center submitted comments the original scoping notice for the expansion EIS on January 30,2009, comments on the DEIS on May 26, 2011, and comments on the FEIS on August 27, 2012. We incorporate each of our earlier comment letters in full here.

In the July 2012 Final Environmental Impact Study (FEIS) for the expansion, the Department of the Navy (DoN) is proposing to expand military training into 21,304 acres in the southern expansion area, 146,667 acres in the western expansion of which 38,137 acres would be shared intermittently with off-road vehicle enthusiasts and the remaining 108,530 acres would be used exclusively by the Marine Corps for a total expansion are of 167,971 acres. These Mojave desert lands provide habitat for many species including the State and federally threatened desert tortoise. While the current SEIS clarifies some of the missing data and analysis from the FEIS, it still fails to provide adequate identification and analysis of all of the significant impacts of the proposed project on the desert tortoise, and still ignores any analysis of impacts to bighorn sheep, golden eagles, and other rare plants, animals and vegetation communities including all Unusual Plant Assemblages (UPAs) on the expansion lands, and other biological resources. The SEIS also fails to adequately analyze the significant cumulative impacts of the project by limiting the analysis to a 30 mile buffer around the base; fails to present a clear need for the proposed 1

Arizona • California • Nevada • New Mexico • Alaska • Oregon • Washington • Illinois • Minnesota • Vermont • Washington, DC

Ileene Anderson, Senior Scientist
8033 Sunset Boulevard, #447 • Los Angeles, CA 90046-2401
tel: (323) 654.5943 *fax:* (323) 650.4620 *email:* ianderson@biologicaldiversity.org
www.BiologicalDiversity.org

Response to Comment

1. Thank you for your comments. The "proposed project" for this SEIS includes only the translocation of tortoises, as required by the 2013 Record of Decision (ROD) and the 2012 Biological Opinion (BO), and does not include any actions related to the land acquisition/airspace establishment or training proposed in the 2012 FEIS. The proposed translocation would negligibly impact these other species mentioned (see Section 3.1.3, *Scope of Analysis*), with the exception of less than significant impacts to vegetation, which are described in Sections 4.1.2.1, 4.1.3.1, and 4.1.4.1 of the SEIS.

Comment ID: W-33 (continued) **Received: November 14, 2016**

translocation of desert tortoise from the expansion area; and lacks consideration of a reasonable range of alternatives.

Many changes in the land use patterns and designations of the California Desert Conservation Area in which MCAGCC is embedded has occurred in the last four years, including the establishment of the Mojave Trails National Monument (MTNM) directly to the north and east of the MCAGCC and the adoption of the Desert Renewable Energy Conservation Plan (DRECP) on BLM lands. Lands managed by the BLM in both the MTNM and lands identified for conservation under the DRECP are now proposed to be recipient and control sites for most of the desert tortoise proposed to be translocated. The MTNM is currently undergoing management planning in order to assure that the monument objects, which include desert tortoise are properly conserved. Of particular concern is the SEIS' failure to include adequate information regarding the impacts to the MTNM resources and the resources in the newly established conservation areas adopted by the DRECP including an analysis of the proposed desert tortoise translocation as it relates to each of the Conservation Management Actions (CMAs). 2

In the sections that follow, the Center provides detailed comments on the ways in which the SEIS fails to adequately identify and analyze many of the impacts that could result from the proposed expansion, including but not limited to: impacts to biological resources, direct and indirect impacts, and cumulative impacts.

I. The SEIS Fails to Comply with NEPA.

NEPA is the "basic charter for protection of the environment." 40 C.F.R. § 1500.1(a). In NEPA, Congress declared a national policy of "creat[ing] and maintain[ing] conditions under which man and nature can exist in productive harmony." *Or. Natural Desert Ass'n v. Bureau of Land Mgmt.,* 531 F.3d 1114, 1120 (9th Cir. 2008) (quoting 42 U.S.C. § 4331(a)). NEPA is intended to "ensure that [federal agencies] … will have detailed information concerning significant environmental impacts" and "guarantee[] that the relevant information will be made available to the larger [public] audience." *Blue Mountains Biodiversity Project v. Blackwood,* 161 F.3d 1208, 1212 (9th Cir. 1998).

Under NEPA, before a federal agency takes a "'major [f]ederal action[] significantly affecting the quality' of the environment," the agency must prepare an environmental impact statement (EIS). *Kern v. U.S. Bureau of Land Mgmt.,* 284 F.3d 1062, 1067 (9th Cir. 2002) (quoting 43 U.S.C. § 4332(2)(C)). "An EIS is a thorough analysis of the potential environmental impact that 'provide[s] full and fair discussion of significant environmental impacts and … inform[s] decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.'" *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.,* 387 F.3d 989, 993 (9th Cir. 2004) (citing 40 C.F.R. § 1502.1). An EIS is NEPA's "chief tool" and is "designed as an 'action-forcing device to [e]nsure that the policies and goals defined in the Act are infused into the ongoing programs and actions of the Federal Government.'" *Or. Natural Desert Ass'n,* 531 F.3d at 1121 (quoting 40 C.F.R. § 1502.1).

Response to Comment

2. The SEIS evaluated impacts related to the Mojave Trails National Monument in Section 4.2, *Land Use*. Text has been added to the Final SEIS to evaluate implications of the DRECP, the ROD for which was released immediately prior to release of this Draft SEIS. DRECP Conservation and Management Actions would be applied as appropriate for any new ground disturbance.

Comment ID: W-33 (continued) **Received: November 14, 2016**

An EIS must identify and analyze the direct, indirect, and cumulative effects of the proposed action. This requires more than "general statements about possible effects and some risk" or simply conclusory statements regarding the impacts of a project. *Klamath Siskiyou Wildlands Center v. BLM,* 387 F.3d 989, 995 (9th Cir. 2004) (citation omitted); *Oregon Natural Resources Council v. BLM,* 470 F.3d 818, 822-23 (9th Cir. 2006). Conclusory statements alone "do not equip a decisionmaker to make an informed decision about alternative courses of action or a court to review the Secretary's reasoning." *NRDC v. Hodel*, 865 F.2d 288, 298 (D.C. Cir. 1988).

NEPA also requires the EIS to ensure the scientific integrity and accuracy of the information used in its decision-making. 40 CFR § 1502.24. The regulations specify that the agency "must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential." 40C.F.R. §1500.1(b). Where there is incomplete information that is relevant to the reasonably foreseeable impacts of a project and essential for a reasoned choice among alternatives, the Marines must obtain that information unless the costs of doing so would be exorbitant or the means of obtaining the information are unknown. 40 C.F.R. § 1502.22. Here the costs are reasonable to obtain information needed to complete the analysis and the EIS must provide additional information—through a supplement or revised EIS. Even in those instances where complete data is unavailable, the EIS also must contain an analysis of the worst-case scenario resulting from the proposed project. *Friends of Endangered Species v. Jantzen*, 760 F.3d 976, 988 (9th Cir. 1985) (NEPA requires a worst case analysis when information relevant to impacts is essential and not known and the costs of obtaining the information are exorbitant or the means of obtaining it are not known) *citing Save our Ecosystems v. Clark*, 747 F.2d 1240, 1243 (9th Cir. 1984); 40 C.F.R. § 1502.22.

A. Purpose And Need and Project Description are Too Narrowly Construed and Unlawfully Segment the Analysis

Agencies cannot narrow the purpose and need statement to fit only the proposed project and then shape their findings to approve that project without a "hard look" at the environmental consequences. To do so would allow an agency to circumvent environmental laws by simply "going-through-the-motions." It is well established that NEPA review cannot be "used to rationalize or justify decisions already made." 40 C.F.R. § 1502.5; *Metcalf v. Daley*, 214 F.3d 1135, 1141-42 (9th Cir. 2000) ("the comprehensive 'hard look' mandated by Congress and required by the statute must be timely, and it must be taken objectively and in good faith, not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made.") As Ninth Circuit noted an "agency cannot define its objectives in unreasonably narrow terms." *City of Carmel-by-the-Sea v. U.S. Dept. of Transportation*, 123 F.3d 1142, 1155 (9th Cir. 1997); *Muckleshot Indian Tribe v. U.S. Forest Service*, 177 F. 3d 900, 812 (9th Cir. 1999). The statement of purpose and alternatives are closely linked since "the stated goal of a project necessarily dictates the range of 'reasonable' alternatives." *City of Carmel*, 123 F.3d at 1155. The Ninth Circuit recently reaffirmed this point in *National Parks Conservation Assn v. BLM*, 586 F.3d 735, 746-48 (9th Cir. 2009) (holding that "[a]s a result of [an] unreasonably

Response to Comment

No comments/questions on this page.

Comment ID: W-33 (continued) **Received: November 14, 2016**

narrow purpose and need statement, the BLM necessarily considered an unreasonably narrow range of alternatives" in violation of NEPA).

The purpose behind the requirement that the purpose and need statement not be unreasonably narrow, and NEPA in general is, in large part, to "guarantee[ ] that the relevant information will be made available to the larger audience that may also play a role in both the decision-making process and the implementation of that decision." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). The agency cannot camouflage its analysis or avoid robust public input, because "the very purpose of a draft and the ensuing comment period is to elicit suggestions and criticisms to enhance the proposed project." *City of Carmel-by-the-Sea*, 123 F.3d at 1156. The agency cannot circumvent relevant public input by narrowing the purpose and need so that no alternatives can be meaningfully explored or by failing to review a reasonable range of alternatives.

The purpose and need that are relevant are the purpose and need *for the proposed project,* not the "need" or "purpose" for the SEIS. This SEIS is confused in that it states that its purpose is "to study alternative translocation plans in support of the project that was described in the 2012 Land Acquisition/Airspace Establishment EIS, selected in the 2013 ROD, and authorized by the Fiscal Year (FY) 2014 NDAA." (SEIS at 1-9). And similarly, the SEIS states that it is needed "to implement the proposed action to satisfy requirements identified in the 2012Final EIS and associated Land Acquisition BO." (SEIS at 1-9). Neither or these statements explain the purpose and need for the proposed project under review which is the proposal to translocate all tortoises out of the western expansion area. Furthermore, the because the DoN will need to consult with U.S. Fish and Wildlife Service on the newly proposed June 2016 Translocation Plan (Appendix A-4), the proposed project cannot solely rely on the 2010 Acquisition BO as the basis that the translocation is needed. 3

The SEIS muddies the purpose and need because it attempts to address the translocation as being required rather than proposed. The translocation was proposed as a mitigation measure to attempt to reduce animal mortality caused by human activities (military exercises in the expansion area), by relocating individuals away from area, other alternatives are possible and should be considered. Further, the SEIS attempts to conflate the "need" for translocation of the tortoise out of the expansion area which causes the "need" to relocate them elsewhere with a truly need-based strategy to augment or restore tortoise populations in other areas through conservation-driven translocations.[1] These are not the same thing and the DoN cannot properly obscure the actual purpose of the translocation behind a veil of conservation. 4

Even if the SEIS purpose and need were properly framed, they would still be far too narrowly construed and impermissibly narrow under NEPA for several reasons. Most importantly, the framing of the purpose and need in the SEIS is inadequate because it forecloses meaningful alternatives review in the SEIS that could reduce impacts to desert tortoise. Because the purpose and need and the alternatives analysis are at the "heart" of NEPA review and affect

[1] Germano et al. 2015. https://www.fws.gov/nevada/desert_tortoise/documents/publications/germano-et-al.2015.mitigation.pdf

CBD comment on MCAGCC Expansion SEIS
November 14, 2016
Page 4 of 21

Response to Comment

3. Section 1.4 of the SEIS defines the purpose and need for the proposed action that is the subject of this SEIS (tortoise translocation), and not the purpose and need for the SEIS itself. In full context, the referenced text is "The Marine Corps needs to implement the proposed action to satisfy requirements identified in the 2012 Final EIS and associated Land Acquisition BO." Also, as a point of clarification, the SEIS analyzes alternatives for translocating only tortoises from the training areas in the western and southern expansion areas that would experience high- to moderate-levels of impact from training activities, not all tortoises out of the western expansion area. Consultation with USFWS regarding the June 2016 Translocation Plan is in process and any resulting BO will be incorporated into the SEIS when it becomes available.

4. The comment regarding "other alternatives" seems to suggest either alternatives to training or alternatives to translocation. The former was fully explored in the 2012 Final EIS, and is outside the scope of this SEIS. Per the 2013 ROD, translocation was acknowledged as a Special Conservation Measure, not just mitigation, and was therefore part of the original proposed action that was evaluated in the 2012 EIS and committed to in the 2013 ROD. Since then, the Marine Corps has conducted additional detailed studies and worked cooperatively with the USFWS, the California Department of Fish and Wildlife, and the BLM to refine the translocation plan, as required in the 2012 BO issued by the USFWS. In light of new information gained from these efforts, the DON has elected to prepare the SEIS focusing on the evaluation of potential impacts from alternative tortoise translocation plans.

   The proposed action in the SEIS is focused on how to implement the required translocation program, not whether it should be or needs to be implemented. As discussed in Section 2.5.2 of the SEIS, an alternative involving training without translocation would result in a loss of tortoises and tortoise habitat that is not compatible with recovery of this threatened species and would not satisfy the measures outlined in the 2012 Land Acquisition BO or the 2013 ROD.

Comment ID: W-33 (continued) **Received: November 14, 2016**

nearly all other aspects of the EIS, on this basis and others, agency must revise and re-circulate the SEIS.

B. The SEIS Does Not Adequately Describe Environmental Baseline

An EIS is required to "describe the environment of the areas to be affected or created by the alternatives under consideration." 40 CFR § 1502.15. The establishment of the baseline conditions of the affected environment is a practical requirement of the NEPA process. In *Half Moon Bay Fisherman's Marketing Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988), the Ninth Circuit states that "without establishing . . . baseline conditions . . . there is simply no way to determine what effect [an action] will have on the environment, and consequently, no way to comply with NEPA." Similarly, without a clear understanding of the current status of the affected public lands neither DoN nor BLM can make a rational decision regarding proposed project. *See Center for Biological Diversity v. U.S. Bureau of Land Management, et al.*, 422 F. Supp. 2d 1115, 1166-68 (N.D. Cal. 2006) (holding that it was arbitrary and capricious for BLM to approve a project based on outdated and inaccurate information regarding biological resources found on public lands).

The SEIS focuses strictly on the impacts to the environment from the process of translocating desert tortoises. It fails to provide adequate baseline information and description of the environmental setting in many areas including in particular the status of the ongoing drought in the expansion area and proposed desert tortoise relocation sites on public lands. In fact, the areas have been in severe to extreme drought since 2012.[2] Mortality and injury data collected on desert tortoise during drought indicate high levels of mortality due to increased predation by meso-carnivores due to low population levels of their typical prey such as jackrabbits and other small mammals.[3] This same study found that predation rates were higher near human population concentrations, at lower elevation sites, and for smaller tortoises and females. The SEIS fails to provide information on the these background influencing factors at the recipient sites, or the size and gender of the desert tortoises proposed to be relocated as well as the host population. While the SEIS does state that predator control would be used (at 4-17), studies show that predator control of coyotes causes only a temporary reduction in numbers while removal occurs and increases reproductive output so that pre-removal population numbers quickly rebound.[4] Therefore, the proposed mitigation of predator control is of dubious benefit over the long-term for aiding tortoise survival on the landscape. 5

Further, the DRECP contains disturbance caps for many of the areas managed by BLM where tortoises are proposed to be relocated, and therefore before any new project is approved, the baseline data on the existing disturbance must be obtained in order to ensure that the proposal is consistent with the required disturbance caps. 6

[2] http://www.latimes.com/local/lanow/la-me-g-california-drought-map-htmlstory.html
[3] Esque et al. 2010. http://www.int-res.com/articles/esr2010/12/n012p167.pdf
[4] Gese 2005 http://www.fwspubs.org/doi/suppl/10.3996/072015-JFWM-063/suppl_file/10.3996_072015-jfwm-063.s3.pdf

CBD comment on MCAGCC Expansion SEIS
November 14, 2016
Page 5 of 21

Response to Comment

5. As a supplement to a completed EIS, an SEIS need only focus on what has changed in the affected environment (or baseline conditions, environmental setting, etc.) since the time of the original EIS, and can otherwise incorporate by reference the description of the environmental setting provided in the EIS. This is the approach that was taken with this SEIS. Given the duration of the drought, the environmental setting and, notably, the conditions under which the 2014 and 2015 clearance surveys and other studies were conducted, are representative of current actual drought conditions in the area. All of the new information generated in the project area since the 2012 EIS reflects the effects of drought on tortoise habitat and other baseline conditions, and therefore was also relevant during the site selection process for recipient sites for translocation and pairing with appropriate control sites (as described in Section 2.2.1 of the SEIS).

   Drought affects the habitat conditions in the areas from which tortoises will be translocated and in proposed recipient sites in the same way. The SEIS discusses the risks and impacts associated with the translocation and identifies measures (e.g., hydration of tortoises during translocation) that will be taken to reduce such risk factors. The SEIS also evaluates factors that increase the risk of predation during drought and describes measures that will be taken to reduce such risks. Size and gender characteristics of the translocated tortoises are also described in the SEIS, as well as in the specific translocation plan documents that are included in Appendix A. Predator control proposed as a mitigation measure would be ongoing, not a one-time occurrence from which predator population numbers might quickly rebound. Also, recent work indicates that controlling coyote populations can increase survivorship of prey species (Watine and Giuliano 2016).

6. The BLM has evaluated the proposed translocation action for consistency with the DRECP and text has been added or modified in the SEIS as appropriate as a result of that evaluation. With regard to this comment, DRECP Conservation and Management Actions would be applied as appropriate for any new ground disturbance.

Comment ID: W-33 (continued) **Received: November 14, 2016**

C. Failure to Identify and Analyze Direct and Indirect Impacts to Biological Resources

The SEIS fails to adequately analyze the direct, indirect, and cumulative impacts of the proposed project on the environment and specifically to the desert tortoise. The Ninth Circuit has made clear that NEPA requires agencies to take a "hard look" at the effects of proposed actions; a cursory review of environmental impacts will not stand. *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1150-52, 1154 (9th Cir. 1998). Where the SEIS has incomplete or insufficient information, NEPA requires the agency to do the necessary work to obtain it where possible. 40 C.F.R. §1502.22; *see National Parks & Conservation Ass'n v. Babbitt,* 241 F.3d 722, 733 (9th Cir. 2001) ("lack of knowledge does not excuse the preparation of an EIS; rather it requires [the agency] to do the necessary work to obtain it.") 7

Moreover, the SEIS must look at reasonable mitigation measures to avoid impacts but failed to do so here. Even in those cases where the extent of impacts may be somewhat uncertain due to the complexity of the issues, the SEIS is not relieved of its responsibility under NEPA to discuss mitigation of reasonably likely impacts at the outset. Even if the discussion may of necessity be tentative or contingent, NEPA requires that the SEIS provide some information regarding whether significant impacts could be avoided. *South Fork Band Council of Western Shoshone v. DOI* , 588 F.3d 718 , 727 (9th Cir. 2009).

While the SEIS incorporates additional information about the status of the desert tortoise population and the number of desert tortoises to be relocated, it now appears that *more* desert tortoises are proposed to be moved than contemplated in the FEIS. The SEIS now estimates that "estimated 1,105 adult tortoises and potentially 2,100 juveniles" will need to be relocated. (SEIS at 1-9), making the proposed effort the largest desert tortoise relocation project ever attempted. Further, the actual number of desert tortoise to be relocated is confusing because in Table 2.3-2 (at 2-31) the Planned Number of Translocatees is only 998. It is unclear what the status of the other 107 adults noted on pg. 1-9 is? Will they be moved? If yes, where? And what happens to the 2,100+ juveniles? 8

The potential for massive mortalities of desert tortoises (both relocated and resident animals) is very real and the proposed mitigation to offset those mortal impacts from various sources is totally inadequate. In the most recent monitoring report from USFWS, monitoring results in the Ord-Rodman Tortoise Conservation Area estimated 3,064 (SE 1001) desert tortoise in this area which overlaps with the some of the proposed translocation sites. Thus, it appears that the proposed translocation is estimated to move more desert tortoises than is estimated to currently live in the Ord-Rodman Tortoise Conservation Area – the long term impacts to the population if the number of translocated tortoises is more than the number of resident tortoise has not been addressed in the SEIS.

Data from typical translocations indicate a 45% mortality or loss of translocated desert tortoise after two years.[5] One project translocated 66 animals and the second 158 animals. These studies are not addressed in the SEIS at all. While the SEIS describes numerous studies on the 9

[5] Moapa Solar Project 2015, Gowan and Berry 2009

CBD comment on MCAGCC Expansion SEIS
November 14, 2016
Page 6 of 21

Response to Comment

7. The SEIS discusses direct and indirect impacts of the proposed translocation action in Chapter 4 and cumulative effects in Chapter 5. A substantial number of mitigation measures were identified in Section 2.6 as Special Conservation Measures, which are included as part of the proposed action. Other resource-specific potential mitigation measures have been identified in Chapter 4 for consideration by decision makers in the ROD.

8. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively (based on 2014 and 2015 clearance surveys in the two expansion areas). The text from Page 1-9 of the SEIS is referencing the 2011 General Translocation Plan and in full context the text refers to long-term take estimates if tortoises were not translocated. Expected take from the project was also described in the 2012 EIS; translocation alternatives described in this SEIS do not change the analysis of potential take from the 2012 EIS.

9. As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012).

   The Moapa Solar Project (2015) reference provided is not the most recent summary, and the 45% mortality may conflate adult and juvenile rates. While there is some internal inconsistency in the report, it indicates a 28% mortality for adults (i.e., 8.4% annual mortality), and 66.7% mortality for juveniles (approximately 25.4% annual mortality), during 3.75 years of drought. These are not unusual mortality rates during drought years. Although 21 resident and 12 control tortoises were monitored as part of the monitoring effort, this data is not included in the September 2016 report or the 2015 reference provided and therefore is not suitable for comparison. Results of the Moapa solar project have been added to Section 4.1.1.3 of the SEIS.

   The 2009 progress report prepared by Gowan and Berry (2009) on the Fort Irwin translocation has been superseded by Esque et al. (2010), which provided a retrospective analysis of the data from the 2008 Fort Irwin translocation. A summary of Esque et al. (2010) is provided in Section 4.1.1.3 of the SEIS. Continued monitoring reported in Mack and Berry (2015) are described in the same section.

   Regarding the numbers of tortoises to be translocated, please see the response to Comment 8 above.

Comment ID: W-33 (continued) **Received: November 14, 2016**

desert tortoise, it only cites to Field et al. 2007 which discusses translocation mortality. That study notes that of the 42 translocated animals, 32% of the either died or were lost during the two year study. The SEIS fails to provide data that support the conclusion in the SEIS that the translocation is not a significant impact to desert tortoise and ignores available scientific data on translocations that show that translocation does cause significant impacts to desert tortoise.

With regards to relocation, the Independent Science Advisors (ISA) for the DRECP state that "In general, moving organisms from one area to another—for example, out of an impact area into a reserve area—is not a successful conservation action and may do more harm than good to conserved populations by spreading diseases, stressing resident animals, increasing mortality, and decreasing reproduction and genetic diversity. Transplantation or translocations should be considered a *last recourse* for unavoidable impacts, should never be considered full mitigation for the impact, and in all cases must be treated as experiments subject to long-term monitoring and management." (at pg. Vii – Executive Summary; emphasis added). Additionally the Scientific Advisory Committee (SAC) of the Desert Tortoise Recovery Office (DTRO) of the U.S. Fish and Wildlife Service also recognizes that moving desert tortoise is "fraught with long-term uncertainties"[6]. Desert tortoise translocations have resulted in significant short-term mortality of 45% or greater[7] *and unknown long-term survivorship*. Unfortunately, our previous similar comments on this proposed translocation have not been addressed, the SEIS still fails to consider the impacts of moving desert tortoise from the expansion areas into other occupied habitat areas. As discussed below the SEIS fails to evaluate the impacts of any of the translocated tortoises on resident species and habitat and fails to address carrying capacity (the ability of the habitat to support species) of the landscape where species area proposed to be moved. These issues still need to be addressed before the proposed project can be approved. 10

Current data from USFWS indicate a continued decline in the Western Mojave Desert Recovery Unit of the desert tortoise[8] despite its protected status and recovery actions – with over 50% decline in the Ord-Rodman Tortoise Conservation Area between 2004 and 2014[9] which includes some of the proposed translocation sites. Despite this ongoing decline, the SEIS fails to examine and evaluate the cause of the ongoing declines in the Ord-Rodman Tortoise Conservation Area and the efficacy of relocating desert tortoise into an area where the species continues to decline. Absent identifying the reason(s) for the decline, no measures can be put in place to remedying the causes of that decline. 11

The SEIS narrows the focus of the proposed project to just those desert tortoise that are to be relocated, instead of evaluating the effects of the relocation on both the relocated and recipient site tortoises. No Biological Assessment is provided and the SEIS fails to analyze the "take" of desert tortoise based on the proposed action, and fails to explain or justify why even more desert tortoise are proposed to be moved than what was anticipated in the FEIS. 12

[6] USFWS – Desert Tortoise Science Advisory Committee 2009
http://www.fws.gov/nevada/desert_tortoise/documents/sac/20090313_SAC_meeting_summary.pdf
[7] Gowan and Berry 2009,
[8] USFWS 2015
https://www.fws.gov/nevada/desert_tortoise/documents/reports/2013/201314_rangewide_mojave_desert_tortoise_monitoring.pdf
[9] Ibid

CBD comment on MCAGCC Expansion SEIS
November 14, 2016
Page 7 of 21

Response to Comment

10. See response to Comment 9, above, regarding the multiple studies specific to desert tortoise translocation that have found no significant effect of translocation compared with resident or control populations on survivorship or mortality.

    The Marine Corps has committed to a 30-year monitoring program as described in Section 1.3.2 that should detect long-term effects of translocation. Text has been added to the beginning of Section 4.1.1.3 of the SEIS to state that past peer-reviewed studies described are short-term and that none have investigated the long-term effects of translocation.

    Impacts to resident tortoises and habitat are described in Sections 4.1.1.3 and 4.1.2.1, which include discussions and related analysis of home ranges, social considerations, disease, population viability, and genetic considerations, among other topics.
    Proposed recipient sites were carefully selected based on the site selection criteria outlined in SEIS Sections 2.1.1.1, 2.2.1.1, and 2.3 to ensure that they can support additional tortoises. Also, as described in the "Population Viability" sub-sections of Sections 4.1.2.1, 4.1.3.1, and 4.1.4.1, it is critical that the post-translocation density is above the minimum density necessary to support population viability.

11. Declines in desert tortoise populations are discussed in the "Current Tortoise Density and Population Trends" subsection of Section 3.1.4.3. Population decreases have been observed range-wide; no particular decline distinct from surrounding areas has been noted in the recipient sites. Recipient and control sites were identified based on criteria listed in Sections 2.1.1.1, 2.2.1.1 and 2.3.

12. Impacts to resident tortoises and habitat are described in Sections 4.1.1.3 and 4.1.2.1, and include discussion of home ranges, social considerations, disease, population viability, and genetic considerations, among other topics.
    Expected take of the project was described in the 2012 EIS and associated BO; translocation alternatives described in this SEIS do not change the analysis of potential take. Translocation methods and post-translocation monitoring and analyses are described in the Translocation Plans, in Appendix A of the SEIS.

Comment ID: W-33 (continued) **Received: November 14, 2016**

Further, the DoN has never explained why so many tortoises need to be moved. Indeed, the DoN used the expansion area successfully for training this summer with no apparent "take" of tortoises. Therefore, it is clear that training can be done in the expansion area without first clearing the lands of all desert tortoise. DoN must consider adopting this training strategy that still allows for MCAGCC's mission fulfillment but will avoid and minimize impacts to the desert tortoise and also save the expense of moving and monitoring the tortoises and mortalities due to the translocation. . These basic issues regarding impacts and alternatives need to be addressed in a revised and recirculated SEIS. 13

D. Translocation Sites Do Not Comply with USFWS translocation guidance

The SEIS lists a five points of USFWS translocation guidance for site selection criteria (at 2-27) including:

- The site has no detrimental rights-of-way or other encumbrances;
- The site will be managed compatibly with continued desert tortoise occupancy;

Of the five translocation site, three of them (Lucerne-Ord, Rodman-Sunshine Peak North and Broadwell) include detrimental rights-of-ways – Large transmission corridors (SEIS at Table 2.2-2). Of those translocation sites with the large transmission corridors, the Lucerne-Ord is proposed to have the greatest number of desert tortoise translocated into it (447 adults, unknown number of juveniles) and Rodman-Sunshine Peak North is proposed to have the second greatest number of desert tortoise translocated into it (341 adults, unknown number of juveniles) (SEIS at Table 2.3-2). Transmission lines are known to increase the presence of ravens, a known desert tortoise predator.[10] Pipelines result in both short- and long-term habitat destruction and could also significantly impact tortoise populations placed within designated transmission corridors as well. 14

Regarding the management of the proposed translocation sites for compatibility with continued desert tortoise occupancy, we have always advocated BLM needs to manage DWMAs (now also designated NCL lands) as preserves for desert tortoise. Unfortunately, the DWMAs/NCL where the translocations are proposed have not been managed as tortoise preserves. Berry et al 2014[11] surveyed lands under three different management strategies, including lands in a BLM-managed DWMA, all of them had low desert tortoise densities and high death rates compared to the Desert Tortoise Natural Area which is managed exclusively for desert tortoise conservation. BLM cannot commit to manage areas within transmission corridors exclusively for conservation and therefore these areas are inappropriate for 15

[10] Coates et al. 2014.
https://www.researchgate.net/profile/Peter_Coates3/publication/265644982_Common_raven_occurrence_in_relation_to_energy_transmission_line_corridors_transiting_human-altered_sagebrush_steppe/links/542999b50cf29bbc1267661a.pdf
[11] Berry et al. 2014
http://s3.amazonaws.com/academia.edu.documents/39134605/5500dc610cf2aee14b58e915.pdf?AWSAccessKeyId=AKIAJ56TQJRTWSMTNPEA&Expires=1479115757&Signature=fUdrgqfVGES%2BenOwg3CRDbaukwI%3D&response-content-disposition=inline%3B%20filename%3DProtection_Benefits_Desert_Tortoise_Goph.pdf

CBD comment on MCAGCC Expansion SEIS
November 14, 2016
Page 8 of 21

Response to Comment

13. The proposed action in the SEIS is intended to satisfy the requirements of the 2012 BO and 2013 ROD, which require translocation to mitigate potential significant effects to desert tortoise in the two expansion areas as a result of the 2012 EIS proposed action. As discussed in Section 2.5.2 of the SEIS, an alternative involving training without translocation would result in a loss of tortoises and tortoise habitat that is not compatible with recovery of this threatened species and would not satisfy the measures outlined in the 2012 Land Acquisition BO or the 2013 ROD.

    The Summer 2016 training was limited to on-road convoy and patrol operations, and did not meet the need for sustained, combined arms, live-fire and maneuver training for which the land was acquired.

    The SEIS provides the numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively (based on 2014 and 2015 clearance surveys in the two expansion areas). These translocatee numbers are not the same as long-term take estimates if tortoises are not translocated. Expected take from the land acquisition project was described in the 2012 EIS; translocation alternatives described in this SEIS do not change the analysis of potential take from the 2012 EIS.

14. Proposed recipient sites were carefully selected based on the site selection criteria outlined in SEIS Sections 2.1.1.1, 2.2.1.1, and 2.3 to ensure that they can support additional tortoises. These criteria include signs of predation. The recipient sites selected were those that best meet the various site selection criteria. Regarding the number of tortoises, please see the response to Comment #8 above.

15. Managing DWMAs (referred as ACECs in the SEIS)/NCL is a responsibility of the BLM and is therefore outside of the scope of this SEIS, which describes and analyzes a Marine Corps action to translocate desert tortoises as required by the 2013 Record of Decision and the 2012 Biological Opinion.

    The proposed recipient sites were selected based on site selection criteria derived from USFWS guidance on tortoise translocation. See also the response to Comment #14.

Comment ID: W-33 (continued) **Received: November 14, 2016**

translocation sites. For areas outside of the transmission corridors, BLM management is still subject to a multiple use mandate—DoN or BLM would need to make further commitments to reduce conflicting multiple uses in these areas and manage for conservation in order to honestly claim that the desert tortoise will be conserved in the translocation areas.

E. SEIS Fails to Identify Appropriate Mitigation

As stated above, the SEIS not only fails to provide adequate identification and analysis of impacts, inevitably, it also fails to identify adequate mitigation measures for the proposed translocation's environmental impacts. "Implicit in NEPA's demand that an agency prepare a detailed statement on 'any adverse environmental effects which cannot be avoided should the proposal be implemented,' 42 U.S.C. § 4332(C)(ii), is an understanding that an EIS will discuss the extent to which adverse effects can be avoided." *Methow Valley*, 490 U.S. at 351-52. Because the SEIS does not adequately assess the direct, indirect, and cumulative impacts of this unprecedented proposed large-scale translocation, its analysis of mitigation measures for those impacts is necessarily flawed. The SEIS must discuss mitigation in sufficient detail to ensure that environmental consequences have been fairly evaluated." *Methow Valley*, 490 U.S. at 352; *see also Idaho Sporting Congress*, 137 F.3d at 1151 ("[w]ithout analytical detail to support the proposed mitigation measures, we are not persuaded that they amount to anything more than a 'mere listing' of good management practices"). As the Supreme Court clarified in *Robertson*, 490 U.S. at 352, the "requirement that an EIS contain a detailed discussion of possible mitigation measures flows both from the language of [NEPA] and, more expressly, from CEQ's implementing regulations" and the "omission of a reasonably complete discussion of possible mitigation measures would undermine the 'action forcing' function of NEPA." 16

Although NEPA does not require that all harms identified actually be mitigated, NEPA does require that an EIS discuss mitigation measures, with "sufficient detail to ensure that environmental consequences have been fairly evaluated" and the purpose of the mitigation discussion is to evaluate whether anticipated environmental impacts *can be avoided*. *Methow Valley*, 490 U.S. at 351-52. As the Ninth Circuit recently noted: "[a] mitigation discussion without at least *some* evaluation of effectiveness is useless in making that determination." *South Fork Band Council of Western Shoshone v. DOI* , 588 F.3d 718 , 727 (9th Cir. 2009) (emphasis in original).

In addition, recent presidential directives require DoN and BLM to fully consider landscape level planning as part of its analysis of ways to avoid, minimize and mitigate impacts from the proposed translocation. In addition, Department of Interior directives regarding avoidance, minimization and mitigation for impacts to resources on public lands also apply to the BLM. The November 3, 2015, presidential memorandum provides policy direction for agencies including the BLM regarding avoidance, minimization and mitigation of impacts to lands, waters, wildlife and other ecological resources and emphasizes the importance of landscape level planning to support these goals. 80 Fed. Reg. 68743 (Nov. 6, 2015). The memorandum sets out policy direction:

> It shall be the policy of the Departments of Defense, the Interior, and Agriculture; the Environmental Protection Agency; and the National Oceanic and Atmospheric

Response to Comment

16. Mitigation measures were identified in Section 2.6 as Special Conservation Measures, which are included as part of the proposed action. Other resource-specific potential mitigation measures have been identified in Chapter 4 for consideration by decision makers in the Record of Decision. Actions that were already committed to in the 2013 ROD include Special Use Areas, headstarting and population augmentation, and long-term monitoring.

Comment ID: W-33 (continued) **Received: November 14, 2016**

Administration; and all bureaus or agencies within them (agencies); to avoid and then minimize harmful effects to land, water, wildlife, and other ecological resources (natural resources) caused by land- or water-disturbing activities, and to ensure that any remaining harmful effects are effectively addressed, consistent with existing mission and legal authorities. Agencies shall each adopt a clear and consistent approach for avoidance and minimization of, and compensatory mitigation for, the impacts of their activities and the projects they approve. That approach should also recognize that existing legal authorities contain additional protections for some resources that are of such irreplaceable character that minimization and compensation measures, while potentially practicable, may not be adequate or appropriate, and therefore agencies should design policies to promote avoidance of impacts to these resources.

Large-scale plans and analysis should inform the identification of areas where development may be most appropriate, where high natural resource values result in the best locations for protection and restoration, or where natural resource values are irreplaceable.

. . .

(d) "Irreplaceable natural resources" refers to resources recognized through existing legal authorities as requiring particular protection from impacts and that because of their high value or function and unique character, cannot be restored or replaced.
(e) "Large-scale plan" means any landscape- or watershed-scale planning document that addresses natural resource conditions and trends in an appropriate planning area, conservation objectives for those natural resources, or multiple stakeholder interests and land uses, or that identifies priority sites for resource restoration and protection, including irreplaceable natural resources.
(f) "Mitigation" means avoiding, minimizing, rectifying, reducing over time, and compensating for impacts on natural resources. As a practical matter, all of these actions are captured in the terms avoidance, minimization, and compensation. These three actions are generally applied sequentially, and therefore compensatory measures should normally not be considered until after all appropriate and practicable avoidance and minimization measures have been considered.

80 Fed. Reg. at 68743-45.

Both the California Desert Conservation Plan (as amended) and the DRECP are examples of the kinds of large-scale plans that are designed to minimize impacts to irreplaceable natural resources and the area that would be affected by the proposed large-scale translocation. (The CDCA plan applies if this were to be considered and "existing" proposed project because it was proposed before the DRECP ROD was issued.) For example, under the CDCA Plan. Multiple-use Class I. (Limited Use)

CBD comment on MCAGCC Expansion SFIS
November 14, 2016
Page 10 of 21

Response to Comment

No comments/questions on this page.

Comment ID: W-33 (continued) **Received: November 14, 2016**

> "protects sensitive, natural, scenic, ecological, and cultural resources values. Public lands designated as Class L are managed to provide for generally *lower-intensity, carefully controlled multiple use of resources, while ensuring that sensitive values are not significantly diminished*."

CDCA Plan at 13 (emphasis added). The CDCA Plan also provides that

> "All State and federal listed species and their critical habitat will be *fully protected*"

CDCA Plan at 20 (emphasis added). Because the proposed translocation would impact the federally threatened desert tortoise and its critical habitat as well as other special status it is likely inconsistent with the CDCA plan. The attempt to reframe the translocation as a recovery action does not avail—the purpose of the translocation is not for recovery of the tortoise it is for the use of the expansion area for training. That goal could be accomplished in a variety of alternative ways (including as shown this year, with training occurring leaving the resident desert tortoise in place) that must be fully considered with avoidance being the first consideration. 17

Secretarial Order No. 3330, issued on October 31, 2013, entitled "Improving Mitigation Policies and Practices of the Department of the Interior" set forth a policy regarding landscape level mitigation to be implemented by the Department and emphasized the need to protect public lands resources in the face of climate change. "As the Department continues to review development projects and identify associated mitigation, it must consider the effects of climate change and incorporate landscape-level strategies to address these impacts into any mitigation framework." 18

On October 23, 2015, the Department of the Interior issued a Departmental Manual 600 DM 6, implementing Secretarial Order No. 3330. The purpose of the DM is to provide:

> guidance to bureaus and offices to best implement mitigation measures associated with legal and regulatory responsibilities and the management of Federal lands, waters, and other natural and cultural resources under the jurisdiction of the Department of the Interior, including use of the best available science and landscape-scale approaches. This policy is intended to improve permitting processes and help achieve beneficial outcomes for project proponents, impacted communities, and the environment. In doing so, the Department will effectively avoid, minimize, and compensate for impacts to Department-managed resources and their values, services, and functions; provide project developers with added predictability, efficient, and timely environmental reviews; improve the resilience of our Nation's resources in the face of climate change; encourage strategic conservation investments in lands and other resources; increase compensatory mitigation effectiveness, durability, transparency, and consistency; and better utilize mitigation measures to help achieve Departmental goals.

BLM is required to "Utilize the policy (paragraph 6.5) and principles (paragraphs 6.6 and 6.7) of this chapter when developing and approving strategies or plans, reviewing projects, and issuing

Response to Comment

17. As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population. Section 3.1.3.5 discussed the impacts that would occur to special status species other than the desert tortoise, which would be negligible. Regarding accomplishing the goal of training in the expansion area, this was analyzed and determined in the 2012 EIS/2013 ROD. See also the response to Comment #12 above.

18. Project effects related to climate change were considered in Section 5.4.1 of the SEIS.

Comment ID: W-33 (continued) **Received: November 14, 2016**

permits that impact Departmental-managed resources and their values, services, and functions." Among those principles are 6.6 B, D, E and F:

> B. Avoidance and Minimization. To avoid and minimize impacts to resources and their values, services, and functions across landscapes and over time, apply best management practices as identified in regulation, policy, plans, strategies, and project-level NEPA analysis. Seek to avoid authorizing activities that adversely impact units of the National Park System, National Wildlife Refuge System, National Landscape Conservation System, Areas of Critical Environmental Concern, and other special status areas. Avoidance should also be sought for resources and their values, services, and functions with protective legal mandates and those considered important, scarce, sensitive, or otherwise suitable to achieve goals as identified through landscape-scale strategies, plans, and approaches.
>
> . . .
>
> D. Use of Landscape-Scale Approaches. Bureaus and offices should utilize landscape scale approaches when developing, approving, and implementing strategies and plans, reviewing projects, and issuing permits. In doing so, bureaus and offices should produce NEPA documents that implement the policy (paragraph 6.5) and principles (paragraph 6.6) in this chapter.
>
> E. Use of Landscape-Scale Strategies and Plans. Whenever possible, landscape-scale strategies and plans should be developed and utilized. When such strategies or plans are being developed, they should be established in coordination with Federal and state partners, tribes, and stakeholders, such as through Landscape Conservation Cooperatives and other multi-partied entities. Strategies and plans should be developed with meaningful, strategic, and deliberate engagement from stakeholders in advance of impacts, and wherever possible use existing plans, assessments, tools, models, and data.
>
> F. Addressing Climate Change Impacts and Resilience. Identify and promote mitigation measures that help address the effects of climate change and improve the resilience of our Nation's resources and their values, services, and functions. Such efforts include:
>
> (1) Protecting diversity of habitat, communities, and species, with specific consideration to conditions of topography and elevation;
>
> (2) Protecting and restoring core, unfragmented habitat areas, and the key habitat linkages among them;
>
> (3) Anticipating and preparing for shifting wildlife movement patterns;
>
> (4) Maintaining key ecosystem services;
>
> (5) Monitoring, preventing, and slowing the spread of invasive species (defined in Executive Order 13112 as alien species whose introduction does or is likely to cause economic, environmental or other harm to human health);
>
> (6) Focusing development activities in ecologically disturbed areas when possible, and avoiding ecologically sensitive landscapes, culturally sensitive areas, sensitive viewsheds, and crucial wildlife corridors.

CBD comment on MCAGCC Expansion SEIS
November 14, 2016
Page 12 of 21

Response to Comment

No comments/questions on this page.

Comment ID: W-33 (continued) **Received: November 14, 2016**

(7) Considering greenhouse gas emission in project design, analysis, and development of alternatives;

(8) Protecting and restoring habitats and ecosystems that store carbon; and

(9) Developing, analyzing, and using mitigation measures that account for uncertainty and risk, as needed, particularly when considering change agents such as climate change.

Taken together these measures clearly require the BLM to take into consideration all existing landscape level planning in the area, fully consider avoidance alternatives, and ensure any remaining impacts are minimized and fully mitigated. For the proposed translocation, existing landscape planning includes the CDCA and the DRECP, which terms must be fully considered in reviewing the proposed translocation. In order to implement the Department of the Interior policy, the BLM must fully consider alternatives and measures to avoid significant impacts to tortoise, bighorn, and other wildlife and plant resources, including by rejecting the proposed translocation onto BLM managed lands.

The SEIS does not provide a full analysis of possible mitigation measures to avoid or lessen the impacts of the proposed project and therefore the SEIS cannot properly assess the likelihood that such measures would actually avoid the impacts of the proposed project. 19

The SEIS also fails to address needed compensatory mitigation. For the desert tortoise, which the SEIS does admit will sustain impacts, the SEIS offers inadequate mitigation for impacts. Because the action will be impacting occupied desert tortoise habitat and "take" will occur of desert tortoise, the DoN should identify the amount and location of desert tortoise habitat that will be acquired and preserved in perpetuity as mitigation for the impacts that will occur to the desert tortoise within the expansion areas. All other projects that we are aware of in desert tortoise habitat in California have been required to acquire off-site mitigation at a 3:1 ratio, in addition to relocation, monitoring and best management practices. Off-site mitigation acquisitions have been implemented by other Department of Defense expansions (including Fort Irwin expansion) and should be required here as well.

In addition to acquisition, other strategies that benefit the conservation of desert tortoise should be adopted and implemented as identified in the Updated Desert Tortoise Recovery Plan[12] (2011). The SEIS is woefully inadequate with regards to this aspect of desert tortoise impact and mitigation. The EIS must include these important issues.Mitigation acquisition should include appropriate tortoise habitat (occupied or unoccupied) which is currently existing and providing benefits to the species, to off-set the elimination of the proposed expansion area. However, this strategy is still *a net loss of habitat* to the desert tortoise, as currently they are using or could use both the mitigation site and the expansion area. 20

1. Off-Road Vehicles

[12] USFWS 2011 https://www.fws.gov/nevada/desert_tortoise/documents/recovery_plan/RRP%20for%20the%20Mojave%20Desert%20Tortoise%20-%20May%202011.pdf

CBD comment on MCAGCC Expansion SEIS
November 14, 2016
Page 13 of 21

Response to Comment

19. Please see response to Comment 16 above.

20. The purpose of the Marine Corps' proposed action in this SEIS is to evaluate alternative approaches to translocating tortoises out of harm's way as required in the 2012 BO and the 2013 Record of Decision. Issues related to mitigating impacts of military training in the expansion area were previously addressed in the 2012 EIS, the associated 2012 BO, and the 2013 ROD, and are beyond the scope of this SEIS and appropriate mitigation measures. The Marine Corps has consulted with USFWS and coordinated with BLM and other agencies regarding this SEIS.

    Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

Comment ID: W-33 (continued) **Received: November 14, 2016**

The SEIS recognizes that the expansion displaced ORVs from Johnson Valley (at 2-16), but it fails to evaluate the potential off-site impacts to desert tortoise that will result or to provide any mitigation measures to off-set that impact. It is likely that ORV use will be concentrated in the remaining Johnson Valley ORV area (or other nearby ORV open areas) further impacting the existing desert tortoise populations in those areas. The DoN needs to offset some of the impact for example by providing increased law enforcement resources to land management agencies in the region to help enforce land management rules and regulations especially in Desert Wildlife Management Areas (DWMA)/NCL and wilderness areas, which are key in recovering desert tortoise populations. This type of "mitigation" was implemented to offset impacts of the Fort Irwin Expansion, where additional law enforcement was provided to the BLM. In that case however, the expansion was not in an ORV open area. The SEIS states "monitoring would be supplemented by regular Conservation Law Enforcement Officer patrols through the recipient and control sites." (SEIS at 2-25). The details of these proposed "patrols" are unclear and no further information on these patrols is provided in the SEIS nor any information that shows they would be fully funded. It is also unclear from the SEIS whether these patrols would be on MCAGCC only or include all sites including BLM-managed lands, or how often will they occur. If the SEIS relies on patrols that include BLM-managed lands, the DoN must consider whether that is realistic given the funding shortfalls BLM has seen over decades. In order to rely on actions on BLM lands to protect the desert tortoise DoN will need to ensure funding is available to the BLM for law enforcement. Further, for the recipient/control sites in wilderness, patrols must be on foot absent a minimum tools analysis. We believe that these patrols need to continue in perpetuity in order to protect the habitat, but at a minimum for the duration of the 30 years of monitoring.

2. Grazing Study is NOT Mitigation

The Lucerne-Ord and Rodman-Sunshine Peak North recipient sites and the Rodman-Sunshine Peak South control site are located within the Ord Mountain Grazing Allotment. (SEIS at Table 2.2-2) Unbelievably, the SEIS proposes "to study cattle grazing compatibility with desert tortoises" (SEIS at 2-25) for both Alternative 1 and 2 (SEIS at Table 2.4-1), although this has already been studied many times. The data on incompatibilities between cattle grazing and desert tortoise are well documented in the scientific literature.[13]. In addition to forage competition and habitat degradation, cattle grazing also increases the presence of ravens – a known desert tortoise predator.[14] Retirement of grazing allotments in the CDCA was used as part of the mitigation strategy by the Army for the Fort Irwin expansion into desert tortoise habitat. The Clark County Habitat Conservation Plan in Nevada similarly bought out and retired grazing allotments in desert tortoise habitat to "Minimize and Mitigate the Impacts of Take" of desert tortoise.[15]

21

13 Berry et al. 2016. http://pubs.usgs.gov/of/2016/1023/ofr20161023.pdf
14Coates et al. 2016. https://www.researchgate.net/profile/Kristy_Howe/publication/296483994_Landscape_characteristics_and_livestock_presence_influence_common_ravens_relevance_to_greater_sage-grouse_conservation/links/56d8becb08aebe4638b9381e.pdf
15http://www.clarkcountynv.gov/airquality/dcp/Documents/permit%20amend/Mitigation%20under%20the%20Current%20MSHCP.pdf

CBD comment on MCAGCC Expansion SEIS
November 14, 2016
Page 14 of 21

Response to Comment

21. The USFWS has agreed that studying the success of desert tortoises inside and outside the Ord Mountain Grazing Allotment could provide needed, rigorously evaluated information of potential grazing compatibility with desert tortoise populations, in this instance, translocatees relative to residents and controls. Evaluating these potential grazing practices (e.g., reducing grazing during periods when ephemeral forage is reduced) would be consistent with the recovery plan for Agassiz's Desert Tortoise (see Recovery Actions, USFWS 2011).

Comment ID: W-33 (continued) **Received: November 14, 2016**

The Consolidated Appropriations Act, 2012 (Public Law 112 -74) allows permanent retirement of grazing allotments within the CDCA as a mitigation strategy to offset impacts to desert tortoise from the development of renewable energy projects.[16] The SEIS failed to consider retiring grazing in the proposed tortoise relocation areas on BLM managed lands; a revised SEIS is needed to consider this important minimization and mitigation measure. The proposal to study cattle grazing compatibility is unnecessary and certainly will not provide any mitigation value for impacts from the proposed translocation. As part of the DoN's mitigation strategy, the DoN needs consider acquiring and permanently retiring the Ord Mountain Grazing Allotment to benefit the resident tortoise and any translocated tortoises moved there if the translocation goes forward.

In light of the fact that desert tortoise populations in the west Mojave DWMAs/NCL continue to decline, any further degradation that could occur due to the proposed translocation will be a significant impact to this population. This is even more concerning in light of other related activities including displaced ORV activities from the base expansion into DWMAs/NCL. The DWMAs/NCL, which were established for desert tortoise recovery (not just survival) and must be protected if the species is to recover.

3. Constrained Dispersal

The SEIS identifies that "four to six constrained dispersal pens on the Combat Center, each 640 acres (260 ha) in size" would be constructed but the "Precise locations for these sites have not been determined, but all sites would be located on the Combat Center within 2.5 miles (4 km) of an MSR" (SEIS at 2-9). However Appendix A-4 indicates that only the Cleghorn Recipient Site would be fenced for two years (at 19) in order to study the constrained dispersal. The SEIS does not evaluate the impacts to other species from fencing 2,321 acres. Other concerns about fencing are also detailed below. 22

4. Fencing

The SEIS fails to provide a map of where the tortoise proof fencing is proposed to be constructed and from the text alone, it is difficult to identify where the fencing would be constructed based on the description in the SEIS which states: 23

> "Tortoise exclusion fencing remains a protective measure that would be employed, as described for the No-Action Alternative. In addition, three-strand fencing would be used, primarily to prevent humans and OHVs from entering recipient/control sites and Special Use Areas."
> . . .
> "New recipient sites identified for Alternative 1 may require fencing in some areas." (at 2-21).

The SEIS contends that:

16 https://www.blm.gov/ca/dir/pdfs/2013/im/CAIM2013-006.pdf

CBD comment on MCAGCC Expansion SEIS
November 14, 2016
Page 15 of 21

Response to Comment

22. The reference to text on page 2-19 pertains to the No-Action Alternative while the Appendix A-4 reference pertains to Alternative 2. There is no discrepancy. Impacts to habitat from fencing are analyzed in Sections 4.1.2.1, 4.1.3.1, and 4.1.4.1 of the SEIS. Impacts to other species, including wildlife, are provided in Section 3.1.3 of the SEIS.

23. Representative fence locations for Alternatives 1 (March plan) and 2 (June plan) are shown in the translocation plans in Appendix A; for the No-Action Alternative (2011 GTP) approximate locations are discussed in Section 2.1.1.1 of the SEIS. Impacts to habitat from fencing are analyzed in Sections 4.1.2.1, 4.1.3.1, and 4.1.4.1 of the SEIS. Impacts to other species, including wildlife, are provided in Section 3.1.3 of the SEIS. The potential for fence-pacing is addressed in the SEIS; see, for example, text in Section 4.1.2.1.

Comment ID: W-33 (continued) **Received: November 14, 2016**

"Fencing only has the potential to impede mammals that are too large to fit through the fence, but too small to jump or climb over. However, impacts would be negligible due to the relatively limited extent of fencing around the Combat Center boundary; transiting mammals would be able to enter and exit the Combat Center through a multitude of alternate locations as necessary." (at 3-10).

While fences have been shown to be effective in keeping desert tortoise out of harm's way, they also can cause problems for desert tortoise and other animals. The fences that are proposed and described in the SEIS are miles long. One of the causes of mortality in translocated desert tortoise is "fence walking" when tortoises come upon a fence and continue to follow it. Mortality occurs when predators take advantage of the constrained tortoise or when environmental conditions cause mortality, typically from excessive heat. Many of the recent solar projects have been required to install "shelters" along the fence (often made out of PVC pipe) to allow tortoises (and other animals) to escape predators and/or find shade. These safeguards should be put it place here too alongside the fence. Of course monitoring of these fences and shelters is also required, as it should be here too.

In addition, large fenced areas have led to mortalities of other species including roadrunners which are similarly diverted along fences at solar projects and subject to higher levels of predation. These issues must be fully addressed in a revised SEIS.

F. ***SEIS Fails to Include Updated Analysis of Other Sensitive Species***

The Center submitted comments on both the DEIS and FEIS for the Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at Marine Corps Air Ground Combat Center Twentynine Palms, CA, and incorporate those comments in full here. In those comments we identified serious inadequacies in the environmental analyses for numerous sensitive species that were never addressed and many of them could also be affected by the translocation proposal both in the expansion areas and in the translocation areas due to increased human activity and fencing among other impacts. Unfortunately this SEIS also fails to address those sensitive species and the avoidance, minimization and mitigation measures to offset impacts to them. These species include: 24

- *Rare and Special Status Plants and Communities*
- *Avifauna including: Migratory Birds*, Burrowing Owls, Golden Eagles
- Badgers
- Desert kit fox
- Nelson's bighorn sheep

G. SEIS Fails to Include Updated Analysis of Other Sensitive Resources

The SEIS also fails to analyze the impacts of the proposed translocation in the expansion areas or on the recipient sites on BLM land due to: 25

- habitat fragmentation from large fenced areas;

CBD comment on MCAGCC Expansion SEIS
November 14, 2016
Page 16 of 21

Response to Comment

24. The SEIS analyzes impacts of tortoise translocation and not impacts from the proposed action in the 2012 EIS.

    See response to Comment 23, above, regarding impacts to other species from the proposed tortoise translocation. In some cases, impacts were evaluated by type or group of animals. Specific species were discussed as appropriate; for example, impacts to Nelson's bighorn sheep are described in Section 3.1.3.5. Moreover, SCM 6 (see Section 2.6.2 of the SEIS) requires an Authorized Biologist to "be present during all fence installation activities to ensure that placement of the fence would adaptively avoid protected and special status biological resources (e.g., flora and fauna species) and long-lived woody vegetation."

25. The potential for habitat fragmentation from fence construction is analyzed in the "Reptiles," "Birds," and "Mammals" subsections of SEIS Section 3.1.3.3.

    The "Regional Connectivity" subsection of Sections 4.1.2.1, 4.1.3.1, and 4.1.4.1 analyze impacts to regional connectivity under all three alternatives.

    Text in Section 3.1.4.2 of the SEIS has been revised to indicate that most of the invasive species of concern (e.g., storksbill [*Erodium cicutarium*] split grass [*Schismus barbatus*]) are already present in the proposed recipient and control sites at levels that are low enough to not preclude these sites from being considered "high quality habitat." SCMs have been added to Section 2.6.2 to reduce the likelihood of spreading invasive species and related analysis has been added to Section 4.1.2.1 of the SEIS.

    Text in Section 5.4.1 has been expanded to include (1) mention of rare plants in the analysis of cumulative impacts to vegetation as well as (2) analysis of cumulative impacts to other wildlife.

Comment ID: W-33 (continued) **Received: November 14, 2016**

- loss of connectivity for all terrestrial wildlife (only partially analyzing desert tortoise);
- invasive weed species associated with the increased human activity;
- cumulative impacts to all wildlife and rare plants from the proposed translocation and other projects;

We remain very concerned about these types of impacts and a revised SEIS needs to address them.

G. The Analysis of Cumulative Impacts in the DEIS Is Inadequate

A cumulative impact is "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 C.F.R. § 1508.7. The Ninth Circuit requires federal agencies to "catalogue" and provide useful analysis of past, present, and future projects. *City of Carmel-By-The-Sea v. U.S. Dept. of Transp.*, 123 F.3d 1142, 1160 (9th Cir. 1997); *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 809-810 (9th Cir. 1999).

"In determining whether a proposed action will significantly impact the human environment, the agency must consider '[w]hether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment.' 40 C.F.R. § 1508.27(b)(7)." *Oregon Natural Resources Council v. BLM,* 470 F.3d 818, 822-823 (9th Cir. 2006). NEPA requires that cumulative impacts analysis provide "some quantified or detailed information," because "[w]ithout such information, neither courts nor the public . . . can be assured that the Forest Service provided the hard look that it is required to provide." *Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372, 1379 (9th Cir. 1988); *see also id.* ("very general" cumulative impacts information was not hard look required by NEPA). The discussion of future foreseeable actions requires more than a list of the number of acres affected, which is a necessary but not sufficient component of a NEPA analysis; the agency must also consider the actual environmental effects that can be expected from the projects on those acres. *See Klamath-Siskiyou Wildlands Ctr. v. BLM*, 387 F.3d 989, 995-96 (9th Cir. 2004) (finding that the environmental review documents "do not sufficiently identify or discuss the incremental impact that can be expected from each [project], or how those individual impacts might combine or synergistically interact with each other to affect the [] environment. As a result, they do not satisfy the requirements of the NEPA.") Finally, cumulative analysis must be done as early in the environmental review process as possible, it is not appropriate to "defer consideration of cumulative impacts to a future date. 'NEPA requires consideration of the potential impacts of an action *before* the action takes place.'" *Neighbors*, 137 F.3d at 1380 *quoting City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1313 (9th Cir. 1990) (emphasis in original).

The SEIS identifies some of the cumulative projects but limits it to a 30-mile buffer around MCAGCC. This approach does not meaningfully analyze the cumulative impacts to resources in the California desert resources, including desert tortoise, from the many proposed 26

CBD comment on MCAGCC Expansion SEIS
November 14, 2016
Page 17 of 21

Response to Comment

26. The 30-mile buffer was used in identifying past, present, and reasonably foreseeable future projects in the region that may contribute to cumulative impacts, but the analysis of cumulative effects in Chapter 5 acknowledged (as appropriate) broader impacts that would not be contained solely within that area. This approach is consistent with that taken in the 2012 EIS.

    The SEIS addressed indirect effects as appropriate within Chapter 4 and 5. Changes in land use patterns or induced growth are not expected to occur as a result of translocating tortoises to areas inside, adjacent to, or nearby the Combat Center.

Comment ID: W-33 (continued) **Received: November 14, 2016**

projects (including renewable energy projects, transmission, and others). Moreover, because of this narrow view, the cumulative impacts analysis cannot be complete.

The SEIS also fails to consider all reasonably foreseeable impacts in the context of the cumulative impacts analysis. *See Native Ecosystems Council v. Dombek, et al,* 304 F.3d 886 (9th Cir. 2002) (finding future timber sales and related forest road restriction amendments were "reasonably foreseeable cumulative impacts"). The SEIS also fails to provide the needed analysis of how the impacts might combine or synergistically interact to affect the environment in this region. *See Klamath-Siskiyou Wildlands Ctr. v. BLM*, 387 F.3d 989, 995-96 (9th Cir. 2004).

The NEPA regulations also require that indirect effects including changes to land use patterns and induced growth be analyzed. "Indirect effects," include those that "are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include *growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems*." 40 C.F.R. s.1508.8(b) (emphasis added). *See TOMAC v. Norton*, 240 F. Supp.2d 45, 50-52 (D.D.C. 2003) (finding NEPA review lacking where the agency failed to address secondary growth as it pertained to impacts to groundwater, prime farmland, floodplains and stormwater run-off, wetlands and wildlife and vegetation); *Friends of the Earth v. United States Army Corps of Eng'rs*, 109 F. Supp.2d 30, 43 (D.D.C. 2000) (finding NEPA required analysis of inevitable secondary development that would result from casinos, and the agency failed to adequately consider the cumulative impact of casino construction in the area); *see also Mullin v. Skinner*, 756 F. Supp. 904, 925 (E.D.N.C. 1990) (Agency enjoined from proceeding with bridge project which induced growth in island community until it prepared an adequate EIS identifying and discussing in detail the direct, indirect, and cumulative impacts of and alternatives to the proposed Project); *City of Davis v. Coleman*, 521 F.2d 661 (9th Cir. 1975) (requiring agency to prepare an EIS on effects of proposed freeway interchange on a major interstate highway in an agricultural area and to include a full analysis of both the environmental effects of the exchange itself and of the development potential that it would create).

The cumulative impacts to the resources of the California deserts from the proposed translocation including the fencing proposal has not been fully identified or analyzed, and mitigation measures have also not been fully analyzed as.

H. The SEIS' Alternatives Analysis is Inadequate

NEPA requires that an EIS contain a discussion of the "alternatives to the proposed action." 42 U.S.C. §§ 4332(C)(iii),(E). The discussion of alternatives is at "the heart" of the NEPA process, and is intended to provide a "clear basis for choice among options by the decisionmaker and the public." 40 C.F.R. §1502.14; *Idaho Sporting Congress*, 222 F.3d at 567 (compliance with NEPA's procedures "is not an end in itself . . . [but] it is through NEPA's action forcing procedures that the sweeping policy goals announced in § 101 of NEPA are realized.") (internal citations omitted). NEPA's regulations and Ninth Circuit case law require the agency to "rigorously explore" and objectively evaluate "all reasonable alternatives." 40

CBD comment on MCAGCC Expansion SEIS
November 14, 2016
Page 18 of 21

Response to Comment

This is a continuation of Comment 26 and the response appears on the previous page.

Comment ID: W-33 (continued) **Received: November 14, 2016**

C.F.R. § 1502.14(a) (emphasis added); *Envtl. Prot. Info. Ctr. v. U.S. Forest Serv.*, 234 Fed. Appx. 440, 442 (9th Cir. 2007). "The purpose of NEPA's alternatives requirement is to ensure agencies do not undertake projects "without intense consideration of other more ecologically sound courses of action, including shelving the entire project, or of accomplishing the same result by entirely different means." *Envtl. Defense Fund, Inc. v. U.S. Army Corps of Engrs.*, 492 F.2d 1123, 1135 (5th Cir. 1974). An agency will be found in compliance with NEPA only when "all reasonable alternatives have been considered and an appropriate explanation is provided as to why an alternative was eliminated." *Native Ecosystems Council v. U.S. Forest Serv.,* 428 F.3d 1233, 1246 (9th Cir. 2005); *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228-1229 (9th Cir. 1988). The courts, in the Ninth Circuit as elsewhere, have consistently held that an agency's failure to consider a reasonable alternative is fatal to an agency's NEPA analysis. *See, e.g., Idaho Conserv. League v. Mumma*, 956 F.2d 1508, 1519-20 (9th Cir. 1992) ("The existence of a viable, but unexamined alternative renders an environmental impact statement inadequate.").

If the EIS rejects an alternative from consideration, it must explain why a particular option is not feasible and was therefore eliminated from further consideration. 40 C.F.R. § 1502.14(a). The courts will scrutinize this explanation to ensure that the reasons given are adequately supported by the record. *See Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 813-15 (9th Cir. 1999); *Idaho Conserv. League*, 956 F.2d at 1522 (while agencies can use criteria to determine which options to fully evaluate, those criteria are subject to judicial review); *Citizens for a Better Henderson*, 768 F.2d at 1057.

The SEIS not only too narrowly construes the project purpose and need, it wrongly identifies the "no-action" alternative as "implementation of the 2011 General Translocation Plan [GTP] that was considered in the 2012 BO and 2012 Final EIS". (SEIS at ES-1). Because this is a supplemental EIS, it should retain the FEIS' no-action alternative which states "the No-Action Alternative provides a baseline that enables decision-makers to evaluate the environmental consequences of the proposed action and alternatives. The CEQ regulations (40 CFR1502.14[d]) requires an EIS to analyze the No-Action Alternative. "No action" means that an action would not take place, and the resulting environmental effects from taking no action would be compared with the effects of allowing the proposed action to go forward." (FEIS at 2-83). This No-Action Alternative should serve as the baseline for comparison of impacts evaluated in the SEIS—not the earlier translocation plan. 27

The SEIS does not consider an adequate range of alternatives either. It only provides two alternatives in addition to the wrongly framed no-action alternative. Both of the action alternatives would undertake the translocation and move the same number of tortoises. The only difference between the two alternatives is that Alternative 2 does not include the moving tortoises to the Bullion Recipient site (as proposed in Alternative 1) and moves the Bullion Control Site inside MCAGCC to the former Bullion Recipient Release Site, which is not proposed for use under Alternative 2. The SEIS fails to include any feasible alternatives that would avoid or reduce impacts to occupied desert tortoise habitat, including using the expansion area as the DoN did this last summer for training (see discussion above), as well as alternatives that would reduce the number and extent of tortoises moved out of the expansion area. Without providing a range of feasible alternatives, the SEIS is inadequate. 28

CBD comment on MCAGCC Expansion SEIS
November 14, 2016
Page 19 of 21

Response to Comment

27. As described in Section 1.3 of the SEIS, the 2013 ROD committed the Marine Corps to implementing a tortoise translocation program (in addition to other resource-specific mitigations) as required in the 2012 BO issued by the USFWS. The 2011 General Transportation Plan (GTP) described the specifics of the translocation program that was proposed at the time, but the ROD also committed the Marine Corps to performing extensive pre-translocation surveys of potential recipient sites to provide information that may be used to modify the GTP. The GTP itself discussed an approach for further investigation of those factors that are important for implementing translocation and are likely to influence translocation success and tortoise recovery. The Combat Center has since conducted a 3-year program of surveys, literature review, and consultation with resource agencies, resulting in the preparation of two alternative translocation plans (Alternatives 1 and 2). As discussed in Section 2.5.2 of the SEIS, an alternative involving training without translocation would result in a loss of tortoises and tortoise habitat that is not compatible with recovery of this threatened species and would not satisfy the measures outlined in the 2012 Land Acquisition BO or the 2013 ROD.

28. The number of tortoises to be moved is determined by the results of clearance surveys in the affected portions of the two expansion areas (plus any additional tortoises that may be found during translocation or in post-translocation clearance surveys). Otherwise, the identified alternatives differ in various ways, including selection and pairing of recipient and control sites and post-translocation densities.

    The purpose of the Marine Corps' proposed action in this SEIS is to evaluate alternative approaches to translocating tortoises out of harm's way as required in the 2012 BO and the 2013 Record of Decision. Issues related to finding alternative locations or ways to conduct the required MEB training, or mitigating other impacts of the requisite training in the expansion areas, were previously addressed in the 2012 EIS, the associated 2012 BO, and the 2013 ROD, and are beyond the scope of this SEIS.

Comment ID: W-33 (continued) **Received: November 14, 2016**

II. Conclusion

Thank you for your consideration of these comments. In light of the many omissions in the environmental review to date, we urge the DoN to rethink moving so many desert tortoise out of the expansion area, and to consider alternatives that decrease or eliminate the need for translocation. This is the proposed to be the largest desert tortoise relocation ever attempted and should not be undertaken if feasible alternatives are possible. We urge the DoN to revise and re-circulate the SEIS before making any decision regarding the proposed translocation activities. In the event DoN chooses not to revise the SEIS and provide adequate analysis, the DoN should reject the translocation proposal and the BLM should likewise reject the proposal to move desert tortoises from the expansion area into occupied desert tortoise habitat on public lands that is intended to be managed for the survival and recovery of the species. Please feel free to contact us if you have any questions about these comments or the documents provided. 29

Sincerely,

Ileene Anderson
Senior Scientist/Desert Program Director
Center for Biological Diversity
8033 Sunset Blvd., #447
Los Angeles, CA 90046
(323) 654-5943
ianderson@biologicaldiversity.org

Lisa T. Belenky, Senior Attorney
Center for Biological Diversity
1212 Broadway, Suite 800
Oakland, CA 94612
Phone: 510-844-7107
lbelenky@biologicaldiversity.org

cc: (via email)
Brian Croft, USFWS, brian_croft@fws.gov
Kevin Hunting, CDFG, khunting@dfg.ca.gov
Tom Plenys, EPA, Plenys.Thomas@epa.gov

References: (Attached only where links are not provided)

Berry, K.H., L.M. Lyren, J.L.Yee, and T.Y.Bailey 2014. Protection Benefits Desert Tortoise (Gopherus agassizii) Abundance: The Influence of Three Management Strategies on a Threatened Species. Herpetological Monographs 28: 66–92
http://s3.amazonaws.com/academia.edu.documents/39134605/5500dc610cf2aee14b58e915.pdf?AWSAccessKeyId=

Response to Comment

29. Thank you for your comments.

Comment ID: W-33 (continued) **Received: November 14, 2016**

Response to Comment

AKIAJ56TQJRTWSMTNPEA&Expires=1479115757&Signature=fUdrgqfVGES%2BenOwg3CRDbaukwI%3D&response-content-disposition=inline%3B%20filename%3DProtection_Benefits_Desert_Tortoise_Goph.pdf

Berry, K.H., Lyren, L.M., Mack, J.S., Brand, L.A., and Wood, D.A., 2016, Desert tortoise annotated bibliography, 1991–2015: U.S. Geological Survey Open-File Report 2016-1023, 312 p., http://pubs.usgs.gov/of/2016/1023/ofr20161023.pdf

Coates,P.S., B.E Brussee, K.B.Howe, K.B.Gustafson, M.L.Casazza, and D.J. Delehanty 2016. Landscape characteristics and livestock presence influence common ravens: relevance to greater sage-grouse conservation. Ecosphere 7(2): 1-20 Article e01203 https://www.researchgate.net/profile/Kristy_Howe/publication/296483994_Landscape_characteristics_and_livestock_presence_influence_common_ravens_relevance_to_greater_sage-grouse_conservation/links/56d8becb08aebe4638b9381e.pdf

Coates, P.S., K.B. Howe, M.L. Casazza, D.J. Delehanty 2014. Common raven occurrence in relation to energy transmission line corridors transiting human-altered sagebrush steppe. Journal of Arid Environments 111: 68-78. https://www.researchgate.net/profile/Peter_Coates3/publication/265644982_Common_raven_occurrence_in_relation_to_energy_transmission_line_corridors_transiting_human-altered_sagebrush_steppe/links/542999b50cf29bbc1267661a.pdf

Esque, T.C., K.E. Nussear, K.K. Drake, A.D. Walde, K.H. Berry, R.C. Averill-Murray, A.P. Woodman, W.I. Boarman, P.A. Medica, J. Mack, J.S. Heaton. 2010. Effects of subsidized predators, resource variability, and human population density on desert tortoise populations in the Mojave Desert, USA. Endangered Species Research 12: 167–177, 2010 http://www.int-res.com/articles/esr2010/12/n012p167.pdf

Germano, J.M., K.J. Field, R.A.Griffith, S. Clulows, J. Foster G. Harding and R.R. Swaisgood. 2015. Mitigation-driven translocations: are we moving wildlife in the right direction? Front Ecol Environ doi:10.1890/140137. https://www.fws.gov/nevada/desert_tortoise/documents/publications/germano-et-al.2015.mitigation.pdf

Gese, e. 2005 Demographic and Spatial Responses of Coyotes to Changes in Food and Exploitation. Wildlife Damage Management Conferences -- Proceedings. Paper 131. http://www.fwspubs.org/doi/suppl/10.3996/072015-JFWM-063/suppl_file/10.3996_072015-jfwm-063.s3.pdf

Gowan, T. and K.H. Berry. 2009. Progress Report on the Health Status of Translocated Tortoises in the Southern Expansion Area. USGS report to Commander National Training Center and Fort Irwin ATTN: AFZJ-PW-EV, Mr. Clarence Everly. Pgs 27.

Moapa Solar Project Report 2015

U. S. Fish and Wildlife Service (USFWS)

2009 Desert Tortoise Science Advisory Committee
http://www.fws.gov/nevada/desert_tortoise/documents/sac/20090313_SAC_meeting_summary.pdf

2011 Revised Recovery Plan for the Desert Tortoise.
https://www.fws.gov/nevada/desert_tortoise/documents/recovery_plan/RRP%20for%20the%20Mojave%20Desert%20Tortoise%20-%20May%202011.pdf

2015
https://www.fws.gov/nevada/desert_tortoise/documents/reports/2013/201314_rangewide_mojave_desert_tortoise_monitoring.pdf

Comment ID: W-33 (continued) **Received: November 14, 2016**

Response to Comment

PROGRESS REPORT FOR 2009

The Health Status of Translocated Desert Tortoises (*Gopherus agassizii*) in the Fort Irwin Translocation Area and Surrounding Release Plots, San Bernardino County, California: Year 2

Timothy Gowan and Kristin H. Berry (Principal Investigator)
U. S. Geological Survey
Western Ecological Research Center
22835 Calle San Juan de Los Lagos
Moreno Valley, California 92553

for

Commander National Training Center and Fort Irwin
ATTN: AFZJ-PW-EV, Mr. Clarence Everly
P.O. Box 105097
Fort Irwin, CA 92310-5097

Comment ID: W-33 (continued) **Received: November 14, 2016**

The Health Status of Translocated Desert Tortoises (*Gopherus agassizii*) in the Fort Irwin Translocation Area and Surrounding Release Plots, San Bernardino County, California

Abstract. In spring of 2008, we translocated 158 adult and subadult tortoises (82 females and 76 males) from the Southern Expansion Area (SEA) to four plots located in the Superior-Cronese Desert Wildlife Management Area (DWMA) as part of the Desert Tortoise Health and Disease Research Project for the Ft. Irwin Expansion. Long-term objectives include modeling and predicting effects of translocation on survival of tortoises by health status, presence of infectious diseases and trauma, size and age class, and sex. Tortoises were placed in 4 health categories: 1) healthy or control tortoises, 2) tortoises with moderate to severe clinical signs of past trauma, 3) tortoises with moderate to severe clinical signs of shell disease, and 4) tortoises with moderate to severe clinical signs of upper respiratory tract disease but with no evidence of nasal discharge and negative laboratory tests.

As of December 2008, 43 of the initial 158 translocated tortoises had been found dead or had been salvaged for necropsy, and an additional 15 tortoises were missing. We started Year 2 in January 2009, with 100 live tortoises and 15 missing tortoises in the project. During 2009, we conducted health evaluations for clinical signs of health, disease, and trauma for 81 tortoises in the spring and 65 tortoises in the fall. In the spring 4 (4.9%) and 2 (2.5%) tortoises had positive or suspect ELISA tests for *Mycoplasma agassizii* and *M. testudineum,* respectively. In the fall 6 of 65 (9.2%) tortoises tested positive or suspect for *M. agassizii*; none had positive or suspect tests for *M. testudineum*. Overall during 2009, 9 of 81 individual tortoises (11.1%) had ELISA test results that were positive or suspect for *Mycoplasma* species. When weights of tortoises were compared for 2008 and 2009, spring weights were significantly higher than fall weights. In addition, weights in fall 2009 were significantly lower than weights in fall 2008.

Between January and December of 2009, 27 (23.5%) of the remaining 115 live and missing tortoises were found dead. Of the 27, 24 were probably killed by coyotes or other canids, one was killed by a vehicle, and 2 died of unknown causes. Overall, since the translocation began in March of 2008, 44.3% of tortoises have been found dead or were salvaged for necropsy. Combining data from 2008 and 2009, death rates were significantly higher on two plots, plots 3 and 5, than on plots 1.5 and 8. In contrast to 2008, in 2009 the size of a tortoise was not related to risk of death; the average carapace length did not differ from those still alive. Likewise, in contrast to 2008, in 2009 death rates did not differ between sexes. Death rates also did not differ significantly among the four health categories. At the end of 2009, an additional 20 tortoises (17.4%, 20/115) were missing.

We analyzed movement patterns for live tortoises between the time of initial release in spring 2008 and December 2009 (N = 68). Overall, the mean dispersal distance for males was twice that of females; likewise, males moved twice the total distances compared to females. Total distances moved were higher on plots 3 and 5 than

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

on plots 1.5 and 8 but were not significantly different. However, the minimum total distances moved in 2009 were significantly less than in 2008. Females were more likely to use the same cover sites between 2008 and 2009 than males, a potential indication of settling.

INTRODUCTION

The desert tortoise (*Gopherus agassizii*) is a Federally- and State-listed threatened species. Critical habitat for the species occurs north and west of the Colorado River/Grand Canyon complex, including habitat on and adjacent to the National Training Center, Ft. Irwin, in the central Mojave Desert (U.S. Fish and Wildlife Service 1990, 1994). As part of the Ft. Irwin Translocation Project, an estimated 600 to 1000 tortoises have been or are planned to be translocated from the southern and western parts of the expanded Ft. Irwin base to areas outside the Ft. Irwin boundary (Esque et al. 2005).

The primary goal of this research project is to monitor the health and disease status of the translocated tortoises, with an emphasis on the spread of infectious disease. Because infectious diseases have been linked to declining desert tortoise populations (Jacobson et al. 1991; Brown et al. 1994, 1999; Homer et al. 1998; Christopher et al. 2003), the incidence of disease is a critical factor in determining success of translocation. We designed our project to measure the success of translocation, depending on health status of translocated tortoises. Specifically, the translocated tortoises were grouped into one of four health categories: 1) healthy or control tortoises, without moderate to severe clinical signs of infectious disease, trauma, or shell disease; 2) tortoises with moderate to severe clinical signs of past trauma; 3) tortoises with moderate to severe clinical signs of shell disease; and 4) tortoises with moderate to severe clinical signs of upper respiratory tract disease (URTD), but with no evidence of nasal discharge and negative laboratory tests.

Several long-term objectives are to be addressed during the life of the multi-year project. First, we are tracking and sampling tortoises for several years to model and predict the effects of translocation on survival by health status, size and age class, and sex. More specifically, we hope to determine whether or not translocatees in each of the four health categories develop new disease, more severe clinical signs of URTD, more severe cases of shell disease, or new trauma post-translocation. To better understand the epidemiology and distribution of mycoplasmosis or URTD in the Ft. Irwin Translocation Project area, the health status of tortoises and locations of tortoises that have previously tested positive or suspect for mycoplasmosis are being continuously monitored. As part of these analyses, we are also examining differences in survivorship and causes of death among health status categories; differences in survivorship among size and age classes, sexes, and translocation release sites; and differences in the pathogenesis of mycoplasmosis among size and age classes, sexes, and levels of anthropogenic impacts.

Second, the anthropogenic factors most likely to influence translocation success need to be identified and modeled. Anthropogenic factors include but are not limited to

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

roads, military maneuver areas, and rural or urban areas. Third, ecological factors, including landscape and topography, are other variables in the analysis. Both anthropogenic and ecological factors have the potential of affecting health status and degree of trauma of translocated tortoises. We will also explore differences in survivorship among size and age classes and sexes by comparing habitat conditions between initial capture sites and translocation release sites, including levels of anthropogenic disturbance at original home sites and release sites.

This report is a progress report summarizing the status of 158 tortoises that were translocated in the spring of 2008 and were subsequently monitored for health and disease (Berry et al. 2009). Briefly, in spring of 2008, a total of 82 females and 76 males were translocated from the Southern Expansion Area (SEA) to four plots located in the Superior-Cronese Desert Wildlife Management Area (DWMA). As of December 2008, 43 of the initial 158 translocated tortoises had been found dead (41) or salvaged for necropsy (2), and an additional 15 tortoises were unable to be located and were considered missing. We started the 2009 field season in January with 100 remaining tortoises. In addressing the previously stated objectives, we tracked the remaining translocated tortoises monthly, continued to search for missing tortoises, conducted health evaluations on the tortoises during spring and fall, analyzed movement patterns and use of cover sites, and determined causes of death for dead individuals. Our preliminary findings for 2009 are summarized below.

METHODS

Translocation

Between March 26 and April 8, 2008, 158 desert tortoises were translocated from the SEA to one of four designated plots (plots 1.5, 3, 5, and 8; see Fig. 1). These translocation plots, each about one square mile in size, are located outside the Ft. Irwin boundary and are within or bordering the Superior-Cronese DWMA. Prior to translocation, tortoises located in the SEA were fitted with radiotransmitters and were assigned to one of the following four health status categories based on previous health evaluations: 1) healthy tortoises, without moderate to severe clinical signs of infectious disease, trauma, or shell disease; 2) tortoises with moderate to severe clinical signs of past trauma; 3) tortoises with moderate to severe clinical signs of shell disease; and 4) tortoises with moderate to severe clinical signs of URTD, but with no evidence of nasal discharge and negative laboratory tests. Approximately 20 adult males and 20 adult females in each of the four health status categories were selected to be translocated (Berry et al. 2009). Tortoises that had previously tested positive for mycoplasmosis or had signs of nasal discharge were not considered for translocation.

Tortoises were tracked daily, then weekly, and finally at least once per month after translocation using radio telemetry (Berry et al. 2009). Beginning in July 2008, all translocated tortoises were tracked on a monthly basis, unless behavioral or health reasons dictated more frequent checks. Upon locating tortoises during monthly tracking, critical data were recorded, including, but not limited to: date, weather conditions, time

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

observed, location in UTMs (NAD 83), behavioral observations, specific location of the tortoise (e.g., inside cover site, in open, under shrub), interactions with other tortoises, and general condition of the tortoise (e.g. appearing ill, stressed, lethargic, or healthy). When tortoises were located and found to be dead, the location, position, and condition of remains, along with evidence for cause of death were recorded and the remains were photographed.

Health Evaluations

Periodically, comprehensive health evaluations of each tortoise were conducted. In general, the health status of each tortoise was evaluated once in the spring (April 27 to May 4) and once in the fall (October 7 to October 27) in 2009, but these evaluations were more frequent for tortoises showing indications of illness or stress. The evaluations included recording data regarding posture, behavior, activity, recent trauma, and clinical signs of disease, such as URTD and cutaneous dyskeratosis, on the eyes, beak, nares, integument, and shell on a standardized seven-page form modified from an appendix in Berry and Christopher (2001). Length at the carapace midline (MCL) and weight of each tortoise were measured during evaluations, and digital photographs were taken of the eyes, beak, nares, plastron, carapace, and any unusual trauma or lesions. Blood and nasal lavage samples were also collected during health evaluations.

Samples of blood were drawn either by brachial venipuncture or from the subcarapacial site using standard protocols (Hernandez-Divers et al. 2002, Berry et al. 2006). Samples of blood that contained 15% or more of lymph were considered to be suboptimal because of the potential negative impact of dilution (e.g., Gottdenker and Jacobson 1995). Where possible, such samples were repeated with an objective of obtaining 90–100% blood with no lymph or only a trace of lymph (Berry et al. 2005). A nasal lavage was taken using standard protocols (Berry et al. 2006). Blood plasma and nasal samples were shipped to the Mycoplasma Laboratory at the University of Florida to determine the presence of antibodies to *Mycoplasma agassizii* or *M. testudineum* using enzyme-linked immunoassay (ELISA) tests (Schumacher et al. 1993; Brown et al. 1994, 2004; Wendland et al. 2007). Cultures and polymerase chain reaction tests (Brown et al. 2002) were also used. The laboratory procedures are summarized in Berry (2006).

Three primary databases were constructed for each calendar year. One database is the monthly monitoring with dates and locations in UTMs. The second database summarizes tissue samples obtained and includes data on type of samples obtained (blood plasma, plasma/lymph, and nasal lavage), date of collection, volume of samples, results of ELISA tests for *M. agassizii* and *M. testudineum*, and results of polymerase chain reaction tests for positive or suspect cultures. The first two databases are being transmitted separately to Clarence Everly, permit holder, for the federal U.S. Fish and Wildlife Service permit. They contain all Ft. Irwin-related data sets. The third database contains the data collected from health evaluations, including clinical signs of disease and trauma. This database is still in the process of receiving quality assurance and control and will be provided at a later time.

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

Movement Patterns

Two variables relating to movement patterns were calculated for the translocated tortoises. The first variable, dispersal distance, was calculated as the straight-line distance between the point of release and the location furthest from the release point at which the tortoise was located. The second variable, minimum total distance, was calculated as the summation of the straight-line distances between consecutive locations. Both of these measurements were calculated with straight-line distances and, as such, should be considered conservative estimates. Only live tortoises with known locations (i.e., those not dead or missing) as of December 2009 were used in these analyses (n = 68).

To determine the degree of settlement of translocated tortoises, the minimum total distance moved in 2008 was compared to that in 2009 for the 68 tortoises described above. Fidelity to cover sites was also examined (n = 68) by comparing summer (July and August) and winter (December and January) cover site locations for 2008 and 2009. The distance moved each month by these 68 tortoises was also plotted to examine seasonal and annual variation in movements patterns and differences between sexes. Finally, the number of tortoises still remaining on each plot (i.e. within the one square mile boundary of the initial release plots) was compared to the number of tortoises that have dispersed from the plot.

Data Analysis

We used repeated measures ANOVA to examine changes in weight within individual tortoises across seasons after translocation. A post hoc test was used to determine which seasons differed. Only tortoises with weight data for all four seasons (spring 2008, fall 2008, spring 2009, and fall 2009) were used in this analysis (n = 64).

One-way ANOVAs were used to compare movement variables (dispersal distance and minimum total distance) between sexes and among plots. A paired t-test was used to compare minimum total distances between 2008 and 2009. Because tortoises were released at translocation sites in March-early April 2008, we analyzed and compared movements from March-December of 2008 with movements from March-December 2009.

Fisher's exact tests were used to compare cover site fidelity between sexes, as well as death rates between translocation plots, between sexes, and between health categories (healthy, shell disease, URTD, or trauma). Fisher's exact tests were also used to compare the proportion of tortoises still remaining within plot boundaries among translocation sites and among sexes. One-way ANOVAs were used to compare the sizes (MCL) of tortoises that died to those still alive. All statistical tests were conducting using SYSTAT Software version 12.0 (SYSTAT Software Inc. 2007).

RESULTS

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

Summary of 2008

A total of 82 females and 76 males were translocated from the SEA to plots located in the DWMA. Of the 158 translocated tortoises, 21 females and 17 males were translocated to Plot 1.5, 21 females and 19 males were translocated to Plot 3, 19 females and 20 males were translocated to Plot 5, and 21 females and 20 males were translocated to Plot 8. As of December 2008, 43 of the initial 158 translocated tortoises were found dead (41) or salvaged for necropsy (2), and an additional 15 tortoises were unable to be located at the time and were considered missing. As of December 2008, the locations of 100 live tortoises were known. The sex ratio of these tortoises was 44 females and 56 males.

Health Evaluations

In January 2009, 44 females and 56 males were known to be alive; in December 2009, 32 females and 36 males were known to be alive. Comprehensive health evaluations were conducted on 81 translocated tortoises in the spring of 2009 (April 27 to May 4). Blood plasma and nasal lavage samples were also collected from each of these 81 tortoises. Three of these blood samples (3.7%) were a blood/lymph mixture, with at least 90% of the sample composed of blood; the remaining samples were composed of 100% blood. As of the end of spring of 2009, 55 tortoises had been found dead or salvaged for necropsy and 22 were unable to be located.

Comprehensive health evaluations were conducted on 65 translocated tortoises in the fall of 2009 (October 7 to October 27). Blood plasma and nasal lavage samples were also collected from each of these 65 tortoises. Eight of these blood samples were a blood/lymph mixture, with at least 95% of the sample composed of blood; one sample (from 4499F) was a blood/lymph mixture with 50% of the sample composed of blood; the remaining samples were composed of 100% blood. As of the fall of 2009, 69 tortoises had been found dead or salvaged for necropsy, 20 were unable to be located, and four were unable to be extracted from their cover sites for health evaluations.

Tests for Mycoplasmosis

In the spring of 2009, four (4.9%) of 81 tortoises had positive or suspect ELISA tests for *Mycoplasma agassizii* (Table 1). Three tortoises had suspect tests and one tortoise had a positive ELISA test for *M. agassizii*. Of the four tortoises with positive or suspect ELISA tests for *M. agassizii*, two were located on plot 8, one was on plot 1.5, and one was on plot 3 (Fig. 2). Additionally, two tortoises (2.5%) had positive or suspect ELISA tests for *M. testudineum*. One tortoise had a positive test and the other a suspect ELISA test for *M. testudineum*; both were located on plot 1.5 (Fig. 3). Of the 81 nasal lavage samples collected in the spring, all cultures were negative for both *M. agassizii* and *M. testudineum*.

In the fall of 2009, six (9.2%) of 65 tortoises tested for *M. agassizii* had positive or suspect ELISA tests (Table 1). Three tortoises had positive tests and three tortoises

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

had suspect ELISA tests for *M. agassizii*. All six tortoises were located on plots 1.5 or 8 (Fig. 4). Five of these tortoises had previous positive or suspect tests for mycoplasmosis (Table 1). All 65 tortoises tested for *M. testudineum* in the fall had negative ELISA tests (Fig. 5). Two tortoises (4024M and 4257F) which had previously tested positive and suspect, respectively, for *M. testudineum* in spring, were not available to be tested because they had been killed by predators. Results are not yet available for cultures from the 65 nasal lavage samples.

Weight

There was a significant effect of season on measured weight ($F_{3,189} = 132.0$, $p < 0.001$). The post-hoc test revealed weight was greatest in spring 2008 just after translocation, fell in fall 2008, increased back to initial levels in spring 2009, and fell again in fall 2009 (Fig. 6). Weight was not significantly different among the two spring seasons ($p = 0.964$), however it was significantly lower in fall 2009 compared to fall 2008 ($p = 0.001$).

Movements and Fidelity to Cover Sites

Summary statistics for dispersal distance and minimum total distance are reported in Table 2. The tortoise which has moved the most, 4143M translocated to plot 8, has been located on multiple dates just outside the Ft. Irwin boundary fence in the SEA, 12.6 km from its initial release location, and has moved a total distance of at least 18.8 km since its release. Overall, males have dispersed further from their release locations compared to females (means = 3256.4 m for males, 1517.9 m for females; $F_{1, 66} = 12.3$, $p = 0.001$). Males also had greater total distances moved compared to females (means = 6858.4 m for males, 3492.0 m for females; $F_{1, 66} = 23.9$, $p < 0.001$). Although the total distances that remaining live tortoises moved was greater on plots 5 (mean = 7403.3 m) and 3 (6020.8 m) compared to plots 1.5 (4899.8 m) and 8 (4778.4 m), these differences were not statistically significant ($F_{3, 64} = 1.5$, $p = 0.224$). Similarly, dispersal distance did not vary among translocations plots ($F_{3, 64} = 1.1$, $p = 0.351$).

The minimum total distance moved in 2009 (mean = 1854 m) was significantly less than that in 2008 (mean = 3222 m; $t_{67} = 4.837$, $p < 0.001$). Regarding use of cover sites, five of 68 (7.4%) tortoises have used the same cover site every season (summer and winter of 2008 and summer and winter of 2009), and an additional 36 (52.9%) tortoises have used the same cover site in at least two of these seasons. In contrast, 27 (39.7%) of 68 tortoises had minimal fidelity to sites and used a different cover site for each season examined. Females were more likely to use the same cover sites than males (Fisher's exact test, $p < 0.001$); 22 of 38 males used different cover sites for each season compared to just 5 of 30 females.

Eighteen tortoises still remain within the boundaries of their initial release plots. On plot 1.5, six tortoises still remain on the plot, compared to two on plot 3, one on plot 5, and nine on plot 8 (Table 3). However, when considering the total number of tortoises alive at each translocation site, the proportion of tortoises on plot to those off plot is not

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

significantly different among translocation plots (Fisher's exact test, p = 0.801). Additionally, the number of females remaining on the plots does not differ from the number of males (Fisher's exact test, p = 1.00).

There has been marked seasonal variation in movement. Tortoises moved the greatest distances in the spring months immediately following translocation (Fig. 7). Tortoises travelled large distances in the spring of 2009 and, to a lesser extent, in the fall seasons of 2008 and 2009. Tortoises were least active during summer and winter months. The distances moved in 2009 were noticeably less than those in 2008 for both the spring and fall seasons, respectively (Fig. 7). Corroborative with the previous analyses, in general males moved more than females in each month.

Mortality

As of December 2009, 70 (44.3%) of the initial 158 tortoises had been found dead (68) or had been salvaged for necropsy (2). For 2009, the death rate of the 115 remaining tortoises (27 of 115), was similar (23.5%) but slightly lower than that of 2008, the year in which tortoises were first translocated (43 of 158, 27.2%). In 2009, 24 tortoises were probably killed by coyotes or other canids, and the causes of death were unable to be conclusively determined for three tortoises (Table 4). One of these tortoises, 4644F, had been missing for six months before its remains were located. When located, the carcass was crushed, the head and limbs were still remaining and intact, and there were no obvious signs of scavenging or predation (tooth marks, gnashes, tears). A relatively well-used, Bureau of Land Management-designated dirt road was approximately 300 m from where the carcass was located. The most likely cause of death, based on the condition of remains, was crushing by a vehicle. The tortoise was probably transported to the site by a person to conceal the death. The other two tortoises, 4548F and 4441M, were found dead in the open, with no evidence of predation; the head and limbs were still intact. Both tortoises moved large distances during the summer months prior to their deaths, and the expenditures of energy may have contributed to the causes of death.

Combining data for both sexes and both years, death rates varied significantly among translocation plots (Fisher's exact test, $p < 0.001$); 12 of the tortoises that died were located on plot 1.5, 24 were located on plot 3, 26 were located on plot 5, and eight were located on plot 8. More dead tortoises were females (42) than males (28), but the difference was not statistically significant (Fisher's exact test, p = 0.126). Death rates did not differ among health categories (i.e. groups to which tortoises were assigned prior to translocation; Fisher's exact test, p = 0.7918); 21 tortoises with clinical signs of shell disease died, followed by 17 tortoises with clinical signs of trauma, 16 healthy tortoises, and 16 tortoises with clinical signs of URTD. The size of a tortoise was not related to risk of death, as the average carapace length of tortoises that died did not differ from those still alive ($F_{1,137}$ = 1.719, p = 0.192). However, tortoises that died in 2009 were larger than those that died in 2008 (mean MCL ± SE = 246.5 ± 4.7 mm vs. 231.7 ± 3.7; $F_{1,68}$ =6.05, p = 0.016). Males were driving the statistical difference between years. Males dying in 2009 were significantly larger than those dying in 2008 (MCL = 262.5 ± 7.5 mm vs. 226.3 ± 8.1 mm; $F_{1,26}$ = 10.67, p = 0.003), whereas sizes of females were not

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

significantly different between years (MCL = 226.5 ± 4.5 mm in 2009 vs. 234.0 ± 2.8 mm in 2008; $F_{1,40} = 1.98$, $p = 0.167$).

For data from 2009 alone, there was a significant effect of translocation plot on death rates (Fisher's exact test, $p = 0.005$; see Table 4), with again the highest rates on plots 3 and 5. Seven of the remaining 32 tortoises on plot 1.5 died in 2009, compared to six of the remaining 16 on plot 3, ten of the remaining 15 on plot 5, and four of the remaining 31 on plot 8. In 2009 alone, there was no difference in death rates among the sexes (Fisher's exact test, $p = 0.501$); 11 of the remaining 45 females died compared to 16 of the 51 remaining males.

Three of the 43 tortoises found dead in 2008 (4014F, 4720F, 4011F) previously had suspect ELISA tests for mycoplasmosis. In 2009, eleven of the 27 tortoises found dead had previous positive or suspect tests for *M. testudineum* (2533M positive in spring 2009; 4024M suspect in spring 2009; 4136F, 2023M, 2557F, 4179F, 4644F, 4085F, 4106M, 4361M, and 4442M suspect in fall 2008). Several of these tortoises had suspect ELISA tests for *M. testudineum* from fall 2008, a season with an unexpectedly high number of suspect tests for this species (Berry et al. 2009).

Of the initial 158 translocated tortoises, 20 tortoises (17.4%, 20/115) were unable to be located in December 2009 and are considered missing. Of the 20 currently missing tortoises, six had their radiotransmitters detached by a predator or otherwise, and the radiotransmitter signals of the remaining 14 are inaudible at previously known locations. As of December 2009, the locations of 68 live tortoises were known. The sex ratio of these tortoises (32 females and 36 males) is not significantly different than the sex ratio in December 2008 ($X^2 = 0.05$, df = 1, $p = 0.82$).

DISCUSSION

The results for the second year of the SEA translocation project reveal that the death rate of translocated tortoises is still high. In January 2009, 115 tortoises were known to be alive or missing. By the end of 2009, 23.5% of the tortoises had died and an additional 17.4% either remained missing or were newly missing. Overall, in December 2009, 40.9% had either been found dead or were still missing. Combining the data from 2008 and 2009, from the time of initial translocation of 158 tortoises in March-April of 2008, 70 (44.3%) tortoises have died and an additional 20 (12.7%) are missing.

As in the first year, predation by coyote continues to be the primary cause of deaths (Table 4). Overall, death rates were highest in the months immediately following translocation in 2008 and in the spring and fall of 2009 (Fig. 8). These time frames correspond to when tortoises were active and spending more time above-ground (i.e., just after translocation to a novel location, foraging in spring, and seeking mating opportunities in late summer/fall; see Fig. 7). Correspondingly, death rates were lowest in the winter of 2008 and summer of 2009 when tortoises spent more time in well-developed cover sites. While death rates were higher among females and smaller tortoises in 2008 (Berry et al. 2009), this was not the case in 2009. There is an apparent

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

trend that predation was initially highest among small females, but now larger males are also targets of predation (Fig. 9). This pattern may be an artifact of fewer females on the study plots after the initial wave of predation, or it may signify that coyotes have increased their abilities to successfully prey upon the larger male tortoises.

Disease may be an important factor in predation. A substantial portion of the tortoises that died in 2009 (40.7%) had previously tested positive or suspect for mycoplasmosis after being translocated. This figure includes all tortoises in the project, regardless of health group. We need to conduct further research and analysis on effects of health and disease on survival.

Between 2008 and 2009, the proportion of tortoises with suspect or positive ELISA tests increased for *M. agassizii* but decreased for *M. testudineum*. In the spring and fall of 2009, 4.9% and 9.2% of tortoises had positive or suspect ELISA tests for *M. agassizii*. These proportions of ELISA suspect and positive tortoises for *M agassizii* are higher than in 2008 (Berry et al. 2009) and higher than reported for 669 tortoises sampled in and around the SEA in 2007 (Berry and Mack 2008). Similar to findings in 2008 (Berry et al. 2009), tortoises with positive or suspect tests for *M. agassizii* are concentrated on or near plots 1.5 and 8 (Figs. 2 and 4). Three individuals had multiple positive or suspect tests for *M agassizii* during 2008 and 2009 (Table 1).

In the spring of 2009, two tortoises (2.5%) had positive or suspect ELISA tests for *M. testudineum*. These two tortoises were killed by predators during summer and thus could not be sampled in fall. All remaining tortoises had negative tests for *M. testudineum* in the fall. While the proportion of tortoises with positive or suspect tests in spring of 2008 and 2009 are similar, there is a notable discrepancy when comparing rates from the fall seasons of the same years, 31.5% in 2008 vs. 0% in 2009 (Berry et al. 2009). Shifts from positive or suspect ELISA tests for *M. testudineum* to negative status may be due to the quality of blood samples and dilution with lymph, the virulence of *Mycoplasma* spp., timing of sampling in fall, variations in the tests, or other factors.

Weight can be an important indicator of overall health (Henen et al. 1998; Christopher et al. 1999, 2003; Berry et al. 2002). Weight may reflect hydration status, expenditures of energy, availability of food and water, ability of a tortoise to find food and water, and health status. The seasonal differences in weight between spring, summer, and fall observed in the SEA tortoises are comparable to previous studies of desert tortoise populations; weight is generally higher in the spring than in fall (Christopher et al. 1999). However, the decrease in weight between the 2008 and 2009 fall seasons is of concern, and weight should continue to be monitored in conjunction with health assessments or more frequently.

The data on movement patterns of translocated tortoises will be useful for determining the appropriate size for future translocation release sites, the effects of translocation on behavior, and potentially, the effects of habitat type and quality on behavior. Our preliminary results show that translocated tortoises may disperse up to 13 km from their release location within the first two years. Therefore future managers and

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

scientists responsible for designing and managing translocations should consider translocation sites with a buffer zone of suitable habitat at least this large in each direction. Additionally, only 18 of the initial 158 tortoises have not dispersed from the one square mile release plots, indicating the need for translocation sites with much larger areas of quality habitat. In some regards, the translocated tortoises in this study have exhibited movement patterns similar to those reported in previous studies. Differences exist between sexes, with males moving more than females (Berry 1986, O'Connor et al. 1994), and differences exist between seasons, with higher activity levels in the spring and fall compared to the summer and winter when temperature extremes and/or lack of water limit above ground activity (see Fig. 7; Henen 1997, Henen et al. 1998, Nagy and Medica 1986). Tortoises moved less in 2009 compared to 2008, the year in which tortoises were first translocated, and some tortoises have repeatedly used the same cover sites. These results suggest that some translocated tortoises have begun to "settle" into the new sites and may be establishing home ranges, a first step in assimilating with the resident population. Also of note is that movements were greater (statistically in 2008 [Berry et al. 2009], but not for both years combined) on plots 3 and 5 compared to plots 1.5 and 8. Plots 3 and 5 also had higher death rates, and the possible relationship between increased movement and risk of mortality deserves further attention.

Continued work on this project will be directed at addressing the previously stated objectives. Health, including prevalence of mycoplasmosis and other diseases, weight, and general condition, of translocated tortoises will continue to be monitored at regular intervals by incorporating clinical signs of disease recorded during health evaluations with ELSIA test results. Signs of trauma and shell disease, along with signs of URTD, will be analyzed to determine the effects of translocation and anthropogenic impacts on these variables and whether or not incidences of disease and trauma have increased since translocation. The survival and movement patterns of translocated tortoises will continue to be monitored to assess the success of translocation. Finally, habitat characteristics, including topography, foraging and cover site availability, and levels of anthropogenic impacts, will be compared between initial capture sites and translocation release sites as well as among the four translocation plots.

RECOMMENDATIONS

1. This report does not contain a complete analysis of all health data for the translocated tortoises, between the time of translocation and December 2009, e.g., the analysis of changes in clinical signs between seasons and years. This analysis will be conducted as time permits.

2. The abnormally high death rates that began shortly after the initial translocation in March and April of 2008 have continued, and have again risen to high levels in the fall of 2009. The high death rates are primarily the result of canid (coyote) predation. The result has been loss of a significant portion of the sample population. Scientists have reported high death rates of tortoises from predators in other Ft. Irwin studies and in other research projects in California and Nevada during the last few years, and have summarized findings in a draft manuscript for the open literature (Esque et al.,

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

Response to Comment

unpublished paper). Little or no action has been taken (depending on the site) by managing agencies to mitigate the impact to tortoise populations. In our study, which is in critical habitat, we designed the health and disease project to provide valuable information for recovery efforts and to mitigate some impacts of the translocation. Unfortunately, the high death rates have compromised the quality and quantity of data, as well as our ability to achieve many of the initial research objectives. Many elements of the research project will need to be repeated in future translocation efforts using a more robust sample if we are to achieve our initial goals.

3. Based on the unpublished manuscript by Esque et al. on predation, the high death rate from translocatees appears to be influenced by proximity to urban/rural areas and topographical features. There may be other local factors that contribute to elevated populations of coyotes and other predators of tortoises, including proximity to old agricultural fields, roads, trails, and recreation. The younger and smaller subadult and adult tortoises are probably more vulnerable than larger, older tortoises. We need to explore and analyze any and all factors that may affect predation of tortoises and the success of the future translocation of tortoises from the Western Expansion Area to the Western Expansion Translocation Area prior to moving tortoises.

4. Based on unexplained deaths of two tortoises during 2009 (4548F in September 2009, 4441M in August 2009), we may need to increase the health sampling of tortoises from twice per year to three or four times per year or once per season. Additional sampling may be limited to weighing the tortoises and conducting an abbreviated health evaluation (no drawing of blood or taking a nasal lavage).

5. The ELISA test for *M. testudineum* needs to be validated for *G. agassizii*. (This recommendation is repeated from Berry et al. [2009]). This research project is a very high priority, is essential to resolving questions about translocation, and should be undertaken with appropriate financial support as soon as possible. Until the test is validated, we will have continuing questions about the test and cut-off points for suspect and positive titers. We will be able to make better decisions about translocatees if the validation research has been completed.

6. Quality of Habitat (a recommendation repeated from Berry et al. [2009]). The quality of habitat where translocated tortoises were placed is a topic that needs to be addressed as soon as possible. Were the locations appropriate and if not, why not? As we can see from our data, death rates were highest on plots 3 and 5 and movements of tortoises from their original release points were highest on plot 3 and lower on plots 1.5. The soils, surficial geology, vegetative cover and composition of shrubs, elevation, and potential food sources should be evaluated retrospectively for each release site and for the original home sites as soon as possible to reveal critical factors essential to improving the chances for successful translocations. We plan to initiate such a study in 2010.

Acknowledgements. Dr. Mary Brown and Dr. Lori Wendland of the University of Florida are collaborators on this project. They provided valuable advice on interpretations and will be co-authors on any future publications for the open literature. Dr. Elliott Jacobson, also of

Comment ID: W-33 (continued) **Received: November 14, 2016**

the University of Florida at Gainesville, is the pathologist. For tracking, monitoring, and conducting health evaluations of tortoises, we thank Marcella Waggoner, Jeremy Mack, Nate Newman, Kemp Anderson, Rafe McGuire, Sally Boisvert, Tim Hockin, Jessica Kayser, Cynthia Furman, Kevin Walsh, Tonya Rasmussen, Sara Hanner, Al DeMartini, John Boswell, Kevin Lucas, Aaron Keller, Irene Alexakos, Ben Kirkpatrick, Chris Hatton, and John Hillman, Kristina Drake coordinated fieldwork with USGS scientists at the Las Vegas Field Station. Thanks are due to K. Phillips for review and to C. Everly for advice. The National Training Center, Ft. Irwin, provided financial support.

REFERENCES

Berry, K.H. 1986. Desert Tortoise (*Gopherus agassizii*) Relocation: Implications of social behavior and movements. Herpetologica 42(1):113-125.

Berry, K.H. 2006. Progress Report for 2005. The Health Status of Resident Desert Tortoises (*Gopherus agassizii*) in the Fort Irwin Translocation Area, San Bernardino County, California. U.S. Geological Survey, Western Ecological Research Center, Moreno Valley, California. Final Report to National Training Center and Ft. Irwin, California. 15pp with appendices.

Berry, K.H. and M.M. Christopher. 2001. Guidelines for the field evaluation of desert tortoise health and disease. Journal of Wildlife Diseases 37(3): 427-450.

Berry, K.H., and J. Mack. 2008. Progress Report for 2007. The Health Status of Resident Desert Tortoises (*Gopherus agassizii*) in the Fort Irwin Translocation Area, San Bernardino County, California. U.S. Geological Survey, Western Ecological Research Center, Moreno Valley, California. Final Report to National Training Center and Ft. Irwin, California.

Berry, K.H., E. K. Spangenberg, B. L. Homer, and E.R. Jacobson. 2002. Deaths of desert tortoises following periods of drought and research manipulation. Chelonian Conservation and Biology 4:436-448.

Berry, K.H., L.D. Wendland, A. Demmon, and M.B. Brown. 2005. A comparison of lymph and plasma sample results from ELISA tests for *Mycoplasma agassizii* in desert tortoises. Presentation and Abstract from the 30th Annual Desert Tortoise Council Symposium, held in Tucson, Arizona. February 2005.

Berry, K.H., A. Demmon, T. Bailey, and J. Mack. 2006. Protocols for drawing blood from the brachial plexus and subcarapacial site of desert tortoises: Instructions for Ordering Equipment and Culture Media; Summary of How to Draw Blood and Information on How to Contract for Laboratory Analysis and Shipping Laboratory Samples. Appendix on New Technique for Conducting Nasal Lavages by L. Wendland. U.S. Geological Survey, Moreno Valley, CA. 14 p.

Berry, K.H., T.A. Gowan, and J.S. Mack. 2009. Progress Report for 2008. The health status, survival, and movements of 158 translocated Desert Tortoises (*Gopherus*

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

agassizii) in the Southern Expansion Area of the Fort Irwin Translocation Area, San Bernardino County, California: Year 1. U. S. Geological Survey, Moreno Valley, CA. Final Report to National Training Center and Ft. Irwin, California.

Brown, M.B., I.M. Shumacher, P.A. Klein, K. Harris, T. Correll, and E.R. Jacobson. 1994. *Mycoplasma agassizii* causes upper respiratory tract disease in the desert tortoise. Infection and Immunity 62(10):4580-4586.

Brown, M.B., K.H. Berry, I.M. Schumacher, K.A. Nagy, M.M. Christopher, and P.A. Klein. 1999. Seroepidemiology of upper respiratory tract disease in the desert tortoise in the western Mojave Desert of California. Journal of Wildlife Diseases 35(4):716-727.

Brown, D.R., I.M. Schumacher, G.S. McLaughlin, L.D. Wendland, M.B. Brown, P.A. Klein, and E. R. Jacobson. 2002. Application of diagnostic tests for mycoplasmal infections of desert and gopher tortoises, with management recommendations. Chelonian Conservation Biology 4(2):497-507.

Brown, D.R., J.L. Merritt, E. R. Jacobson, P.A. Klein, J.G. Tully, and M.B. Brown. 2004. *Mycoplasma testudineum* sp. nov., from a desert tortoise (*Gopherus agassizii*) with upper respiratory tract disease. International Journal of Systematic and Evolutionary Microbiology 45(5):1527-1529.

Christopher, M.M., K.H. Berry, I.R Wallis, K.A. Nagy, B.T. Henen, and C.C. Peterson. 1999. Reference intervals and physiologic alterations in hematologic and biochemical values of free-ranging desert tortoises in the Mojave Desert. Journal of Wildlife Diseases 35:212-238.

Christopher, M.M., K.H. Berry, B.T. Henen, and K.A. Nagy. 2003. Clinical disease and laboratory abnormalities in free-ranging desert tortoises in California (1990-1995). Journal of Wildlife Diseases 39:35-56.

Esque, T.C., K.E. Nussear, and P.A. Medica. 2005. Desert tortoise translocation plan for Fort Irwin's Land Expansion Program at the U.S. Army National Training Center (NTC) & Fort Irwin. U.S. Geological Survey, Henderson, Nevada. 24 June 2005.

Gottdenker, N.L., and E.R. Jacobson. 1995. Effect of venipuncture sites on hematologic and clinical biochemical values in desert tortoises (*Gopherus agassizii*). American Journal of Veterinary Research 56(1):19-21.

Henen, B.T. 1997. Seasonal and annual energy budgets of female desert tortoises (*Gopherus agassizii*). Ecology 78(1):283-296.

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

Henen, B.T., C.C. Peterson, I.R. Wallis, K.H. Berry, and K.A. Nagy. 1998. Effects of climate variation on field metabolism and water relations of desert tortoises. Oecologia 117:365-373.

Hernandez-Divers, S.M., S.J. Hernandez-Divers, and J. Wyneken. 2002. Angiographic, anatomic and clinical technique descriptions of a subcarapacial venipuncture site for chelonians. Journal of Herpetological Medicine and Surgery 12(2):32-37.

Homer, B.L., K.H. Berry M.B. Brown, G. Ellis, and E.R. Jacobson. 1998. Pathology of diseases in desert tortoises from California. Journal of Wildlife Diseases 34(3):508-523.

Jacobson, E.R., J.M. Gaskin, M.B. Brown, R.K. Harris, C.H. Gardiner, J.L. LaPointe, H.P. Adams, and C. Reggiardo. 1991. Chronic upper respiratory tract disease of free-ranging desert tortoises (*Xerobates agassizii*). Journal of Wildlife Diseases 27:296-316.

Nagy, K.A. and P.A Medica. 1986. Physiological ecology of desert tortoises in Southern Nevada. Herpetologica 42(1):73-92.

O'Connor, M.P., L.C. Zimmerman, D. E. Ruby, S.J. Bulova, and J.R. Spotila. 1994. Home range size and movements by desert tortoises, *Gopherus agassizii*, in the Eastern Mojave Desert. Herpetological Monographs 8:60-71.

Schumacher, I.M., M.B. Brown, E.R. Jacobson, B.R. Collins, and P.A. Klein. 1993. Detection of antibodies to a pathogenic mycoplasma in desert tortoises (*Gopherus agassizii*) with upper respiratory tract disease. Journal of Clinical Microbiology 31:1454-1460.

SYSTAT Software Inc. 2007. SYSTAT 12.0 Statistics. SYSTAT Software Inc., Richmond, California.

U.S. Fish and Wildlife Service. 1990. Endangered and threatened wildlife and plants; determination of threatened status for the Mojave population of the desert tortoise. Federal Register 55(63):12178-12191.

U.S. Fish and Wildlife Service. 1994. The Desert Tortoise (Mojave Population) Recovery Plan. U. S. Fish and Wildlife Service, Portland, Oregon. 73 pp and appendices.

Wendland, L., L.A. Zacher, P.A. Klein, D.R. Brown, D. Demcovitz, R. Littell, and M.B. Brown. 2007. Improved Enzyme-Linked Immunosorbent Assay to reveal *Mycoplasma agassizii* exposure: A valuable tool in the management of environmentally sensitive tortoise populations. Clinical and Vaccine Immunology 14:1190-1195.

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

Table 1. Previous ELISA test results for desert tortoises with positive or suspect tests in 2009. Green cells represent negative status, orange cells represent suspect, and red cells represents positive.

			M. agassizii				***M. testudineum***			
ID	**Sex**	**Plot**	**Sp08**	**Fa08**	**Sp09**	**Fa09**	**Sp08**	**Fa08**	**Sp09**	**Fa09**
4410	M	8								
2040	M	8								
4166	F	1.5								
4423	F	3								
2533	M	1.5				N/A				N/A
4024	M	1.5				N/A				N/A
4257	F	1.5								
4300	M	1.5								
4611	F	8								

Table 2. Summary statistics for movement variables of translocated desert tortoises from March 2008 through December 2009.

	Maximum (m)	Minimum (m)	Mean (m)	SD	N
Dispersal distance	12,567.3	275.2	2,438.3	2,203.6	68
Minimum total distance	18,814.4	1,070.7	5,274.2	3,280.7	68

Table 3. Counts of translocated desert tortoises that are still remaining (On Plot) or that have dispersed (Off Plot) from the boundaries of their initial release plots.

	On Plot		Off Plot		
Plot	M	F	M	F	Total
1.5	5	1	8	10	24
3	1	1	5	3	10
5	0	1	5	1	7
8	4	5	8	10	27

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

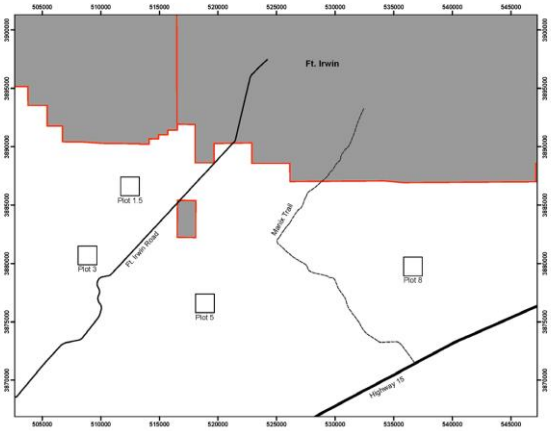
Table 4. Summary of translocated desert tortoises found dead in 2009.

ID	Sex	Plot	MCL	Date Located	Notes
2038	F	1.5	214	22-Sep-09	Likely predation by coyote
4136	F	1.5	201	20-Oct-09	Likely predation by coyote
4162	F	1.5	227	22-Sep-09	Likely predation by coyote
4554	F	1.5	211	4-May-09	Likely predation by canid
2533	M	1.5	260	13-Aug-09	Likely predation by coyote
4024	M	1.5	255	22-Sep-09	Likely predation by coyote
4060	M	1.5	275	22-Oct-09	Likely predation by coyote
2557	F	3	206	4-May-09	Likely predation by coyote
4179	F	3	240	24-Feb-09	Likely predation by coyote
2023	M	3	267	22-Apr-09	Likely predation by coyote
4158	M	3	266	22-Apr-09	Likely predation by coyote
4239	M	3	274	22-Apr-09	Likely predation by coyote
4640	M	3	263	4-May-09	Likely predation by coyote
2550	F	5	211	23-Sep-09	Likely predation by coyote
4288	F	5	229	18-Mar-09	Likely predation by coyote
4548	F	5	227	23-Sep-09	Cause of death unknown; no signs of predation
4556	F	5	280	21-Oct-09	Likely predation by coyote
4644	F	5	232	23-Apr-09	Crushed shell, probable vehicle kill
4073	M	5	262	14-Aug-09	Likely predation by coyote
4108	M	5	266	14-Apr-09	Likely predation by coyote
4129	M	5	284	23-Sep-09	Likely predation by coyote
4291	M	5	262	21-Oct-09	Likely predation by coyote
4442	M	5	273	08-Dec-09	Likely predation by coyote
4085	F	8	223	15-Apr-09	Likely predation by coyote
4106	M	8	265	16-Apr-09	Likely predation by coyote
4361	M	8	211	15-Apr-09	Likely predation by coyote
4441	M	8	246	18-Aug-09	Cause of death unknown; no signs of predation

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

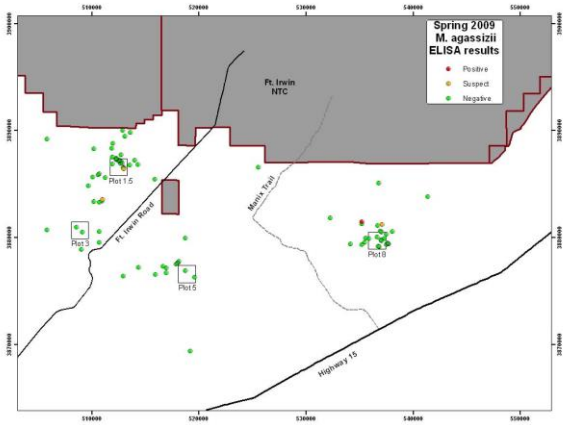
Fig 1. Overview map of the Ft. Irwin Southern Expansion Area and translocation plots.



Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

Fig 2. Results of ELISA tests for *Mycoplasma agassizii* from desert tortoises sampled in spring of 2009.

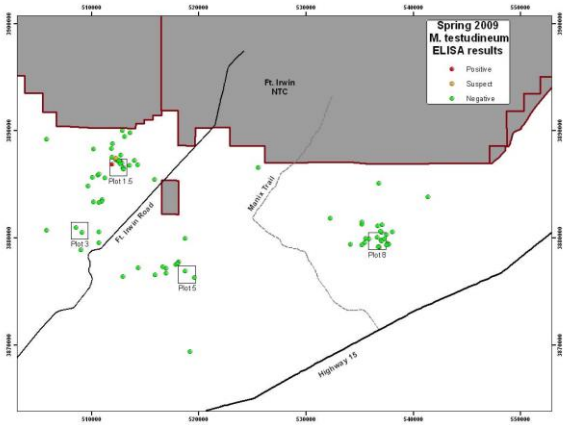


Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

Gowan and Berry. 2009. Progress Report on the Health Status of Translocated Tortoises in the Southern Expansion Area. 21

Fig 3. Results of ELISA tests for *Mycoplasma testudineum* from desert tortoises sampled in spring of 2009.

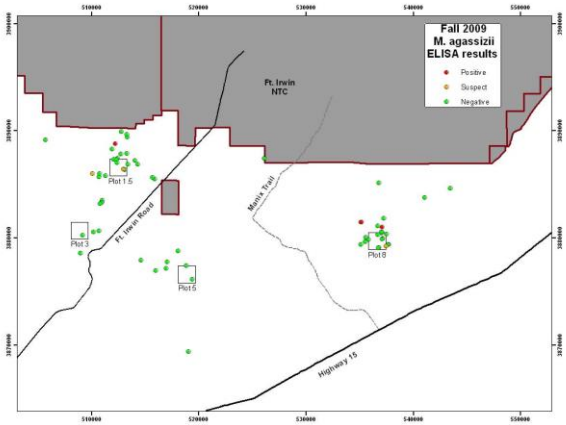


21

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

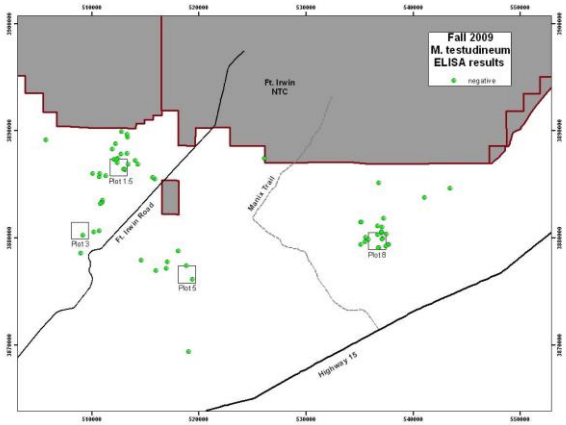
Fig 4. Results of ELISA tests for *Mycoplasma agassizii* from desert tortoises sampled in fall of 2009.



Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

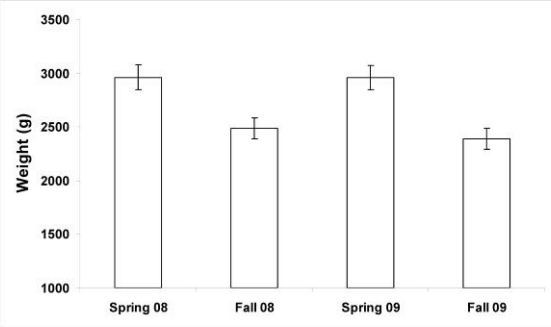
Fig 5. Results of ELISA tests for *Mycoplasma testudineum* from desert tortoises sampled in fall of 2009.



Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

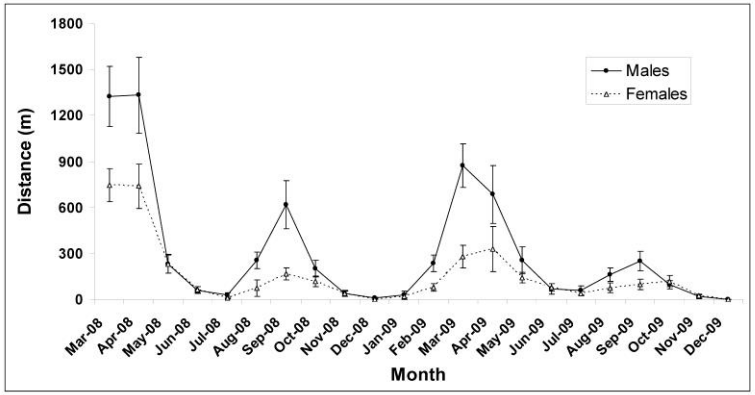
Fig 6. Mean (± SE) weight of desert tortoises (n=64) in four seasons post-translocation.



Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

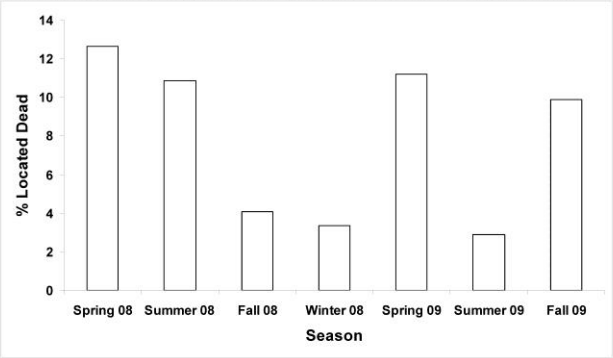
Fig 7. Mean (± SE) distances moved by desert tortoises for each month after translocation.



Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

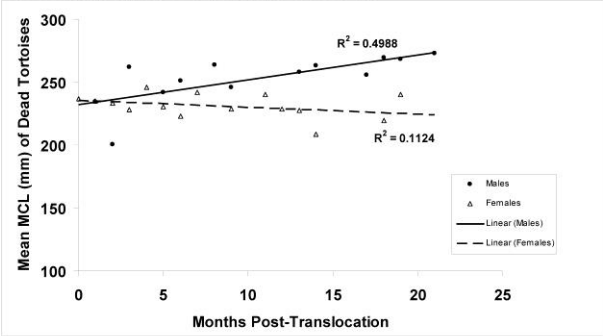
Fig 8. Percent of desert tortoises found dead (# dead/# remaining) by season for the first 20 months after translocation.



Response to Comment

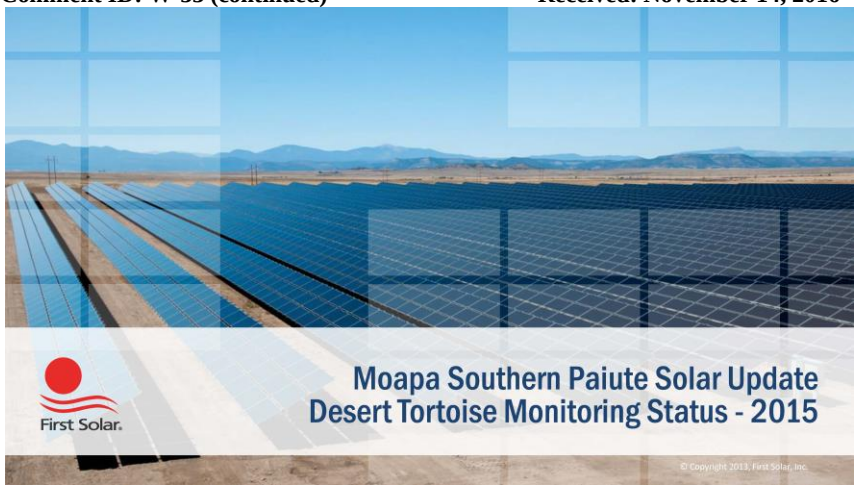
Comment ID: W-33 (continued) **Received: November 14, 2016**

Fig 9. Mean MCL (carapace length at midline, mm) of desert tortoises located dead for each month after translocation. Note the increase in size of males found dead over time and the decrease in size of females.



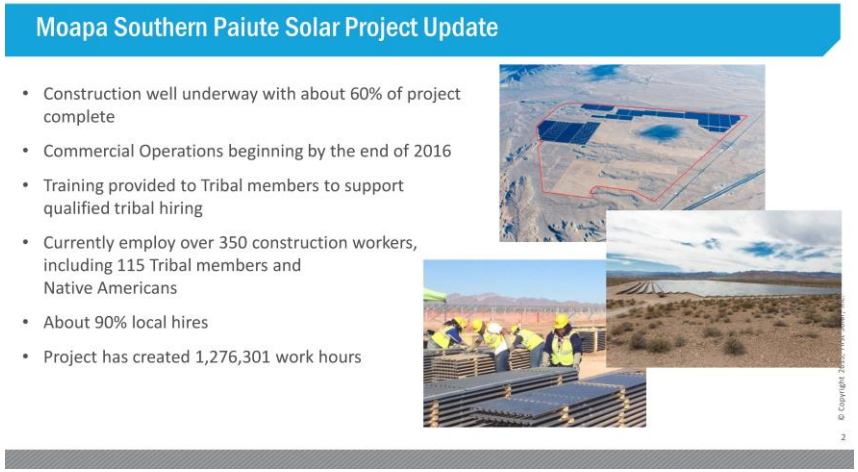
Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**



Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**



Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

Required Impact Minimization and Mitigation Measures

- Worker Environmental Awareness Program (WEAP) training continues to be provided to all personnel prior to performing any work
- Monitoring of desert tortoise in recipient and control site continues to be performed
- Reports continue to be submitted to USFWS as required
- Coordination with USFWS is ongoing to ensure protection of the desert tortoise
- Compensatory mitigation has been paid to the Tribe and BLM in accordance with the Biological Opinion (BO) prior to start of construction

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

Translocation – Spring 2013

- Translocation was done by previous project owner, K Road, in Spring of 2013 prior to project acquisition by First Solar
- A total of 156 desert tortoise were located on site (107 adults and 49 juveniles)
- Of that total, 65 tortoises were translocated. Health assessments were performed, radio transmitters were attached and they were moved to recipient site
- Other tortoises were within limits to move outside of the Project boundary

5

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

Additional Tortoises Within the Site

- A total of 13 additional tortoises, 7 adults and 6 juveniles, have been found since the original translocation
  - **2014**
    - 4 desert tortoise were found on site
      - 2 Adults
      - 2 Juvenile
  - **2015**
    - 9 desert tortoise were found on site
      - 4 desert tortoises have been found within the original fence line
        - 1 adult
        - 3 juveniles (one desert tortoise currently in the pen awaiting translocation in spring 2016)
      - 5 desert tortoises were relocated from an area where fence line was expanded on May 25, 2015
        - 4 adults
        - 1 juvenile

6

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

Current Desert Tortoise Take Compared to Established Take Limits

Death or Injury Within Fenced Boundary	Death or Injury Outside Fenced Perimeter	Capture (Tortoises Translocated or Relocated)
Subadults & Adults Take Limit - 3 Actual – 1 (Summer 2013) **Hatchlings & Juvenile** Actual - 0	**Subadults & Adults** Take Limit – 1 Actual – 0 **Hatchlings & Juveniles** Take Limit – 2 Actual – 0	**Subadults & Adults** Take Limit – 120 Actual – 114 **Hatchlings & Juveniles** Take Limit – 83 Actual – 55

7

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

Translocation Status

Status	Number as of 2014	Current Number 2015
Total number of translocated desert tortoise	66	66
Current confirmed mortality or presumed deceased translocated desert tortoise	18	22
Desert tortoise location not verified	15	9
Successfully located desert tortoise	33	35

- Mortalities are documented and cause is investigated as thoroughly as possible and reported to USFWS as required
- Evidence has indicated that depredation was the primary cause of mortalities among the translocated tortoise

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

Ongoing Desert Tortoise Monitoring

Monitoring of desert tortoises has been performed as follows:

- Translocated Desert Tortoises:
  - Once within 24 hours of release
  - Monitoring of translocated tortoises was performed twice a week for first two weeks after release
  - A minimum of once a week from March through early November for 5 year monitoring period
  - Once every other week from November through February for 5 year monitoring period
- Resident and Control Site Desert Tortoises:
  - A minimum of once a week from March through early November
  - A minimum of once every other week from November through February

Health assessments are conducted prior to and subsequent to over-wintering to observe any health problems.

Response to Comment

Comment ID: W-33 (continued) **Received: November 14, 2016**

Additional Measures Implemented

- Traffic on access road is monitored to ensure that all Project personnel are WEAP trained or escorted to site and other traffic is documented
- Delivery vehicles are escorted to Project site and handout of basic WEAP requirements is provided to drivers that are not WEAP trained
- In addition to the surveys performed, all work areas within and outside fenced boundary are checked for desert tortoise by a biological monitor prior to any work
- Biological monitors accompany and monitor work activities, both within and outside the Project boundary
- Project perimeter is checked daily to ensure the exclusionary fence is intact and tortoises that were relocated outside of the fence are not in distress. (BO only requires a monthly inspection)
- During months of high temperatures, Project perimeter is checked more frequently, and during weekend and days when work is not occurring to ensure that tortoises are not distressed along or near the fence
- Desert Tortoise shade structures have been placed approximately every 700 feet on the outside of the exclusionary fence

10

Response to Comment

Comment ID: W-34 **Received: November 14, 2016**

Desert Tortoise Preserve Committee, Inc.
4067 Mission Inn Avenue • Riverside • CA 92501
Phone • (951) 683-3872 • Fax • (951) 633-6949
E-mail: • dtpc@pacbell.net
www.tortoise-tracks.org

November 9, 2016

To Whom it May Concern,

On behalf of the Desert Tortoise Preserve Committee, Inc. I am submitting the following observations and comments in regards to the Supplementary Environmental Impact Statement for the Marine Corps Air Ground Combat Center tortoise relocation project. Of course our main concern is for the well-being of the desert tortoises involved in the project, and there are several things mentioned in the SEIS that are a cause for concern.

The Desert Tortoise Preserve Committee, Inc. is a nonprofit charitable organization established in 1974 to promote the welfare of the desert tortoise (*Gopherus agassizii)* in the wild through land acquisition and management, scientific research, and educational outreach. The DTPC Inc. currently owns and manages over 7,000 acres of habitat for the desert tortoise and other sensitive species in the Mojave and Colorado Deserts. In collaboration with the Bureau of Land Management and other state and federal agencies, the DTPC Inc. helped establish the Desert Tortoise Research Natural Area (DTRNA) in Kern County, California and to this day, the DTPC Inc. helps manage the DTRNA under a cooperative agreement with the BLM Ridgecrest Field office.

As a state- and federally-listed species, desert tortoise populations are suffering at the hand of numerous threats to them and their ecosystem. In the past decade alone, the population of desert tortoises in the western Mojave Desert has declined by 50%.[1] Adding the stressors of handling and being introduced to unfamiliar habitat may have a much greater affect than is expected. The proposed project would disrupt the already difficult lives of a critical population of tortoises in the Mojave Desert.

Our primary concern is the intention to remove and relocate more than 1,000 desert tortoises. Past translocation projects have proven to be unsuccessful, and with little more information about the tortoise relocation process, there is not much evidence that this relocation project would be any more successful [2,3].

Not only would the act of relocating the tortoises pose a threat to their survival, but the locations to which they will be relocated also cause concern. According to the SEIS, some of the relocation areas are within grazing allotments. Introducing tortoises to habitat that has been and will continue to be heavily grazed on by cattle is not an ideal way to ensure that their relocation is successful. Several studies have demonstrated the negative effects of grazing on desert tortoises and their habitat. [4,5] 1

We first request that the move to relocate tortoises is reconsidered. Tortoise populations have suffered enough and will only continue to decline if we do not cease altering their habitat. Second, we request that

Response to Comment

Thank you for your comments.

1. Section 4.1.1.3 of the SEIS provides extensive discussion of studies that have found no significant effect of translocation on desert tortoises compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012).

   The USFWS has agreed that studying the success of desert tortoises inside and outside the Ord Grazing Allotment could provide needed, rigorously evaluated information of potential grazing compatibility with desert tortoise populations, in this instance, translocatees relative to residents and controls. Evaluating these potential grazing practices (e.g., reducing grazing during periods when ephemeral forage is reduced) would be consistent with the recovery plan for Agassiz's Desert Tortoise (see Recovery Actions, USFWS 2011).

   The tortoise translocation proposed in the SEIS is intended to satisfy the requirements of the 2012 Biological Opinion (BO), which required translocation to mitigate effects of military training on the desert tortoise. Since then, the Marine Corps has conducted additional detailed studies and worked cooperatively with the USFWS, the California Department of Fish and Wildlife, and the BLM on refined translocation plans, as required in the 2012 BO. As discussed in Section 2.5.1 of the SEIS, foregoing training in the expansion area would not meet the purpose and need for the proposed action in this SEIS. The implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

Comment ID: W-34 (continued) **Received: November 14, 2016**

if the relocation of desert tortoises cannot be altogether stopped, revisions be made as to the relocation sites as well as the procedure used to relocate the tortoises. If any fraction of the tortoises to be relocated is to survive, great detail must be recorded as to their status throughout the relocation and acclimation processes. 2

We hope that you will consider our comments and reconsider at least portions of the proposed project. We thank you for the opportunity to submit our comments and concerns.

Sincerely,

Jillian Estrada
Preserve Manager & Conservation Coordinator
Desert Tortoise Preserve Committee, Inc.

[1] U.S. Fish and Wildlife Service. 2015. Range-wide Monitoring of the Mojave Desert Tortoise (Gopherus agassizii): 2013 and 2014 Annual Reports. Report by the Desert Tortoise Recovery Office. U.S. Fish and Wildlife Service. Reno, Nevada.

[2] Mack, J.S., and K.H. Berry (Principal Investigator). 2016. Progress Report for 2015:The status of translocated desert tortoises (Gopherus agassizii) in the Fort Irwin Translocation area and Surrounding Release Plots, San Bernardino County, California: Year 8. Report for U.S. Fish and WIldlife Service Permit No. TE 006556-17 and California Dept. of Fish and Wildlife, California Endangered Species Memorandum of Understanding from K.H. Berry, U.S. Geological Survey, Riverside, CA.)

[3] Mullen, E.B., and P. Ross. 1997. Survival of relocated tortoises: Feasibility of relocating tortoises as a successful mitigation tool. Pages 140-145 in J. Van Abbema (ed.). Proceedings: Conservation, Restoration, and Management of Tortoises and Turtles—An International Conference. N.Y. Turtle and Tortoise Society and WCS Turtle Recovery Program, USA.

[4] Berry, K.H. 1978. Livestock grazihng and the desert tortoise. Forty-third North American Wildlife Conference, pp. 505-519.

[5] Berry, K.H., L.L. Lyren, J.L. Yee, T.Y. Bailey. 2014. Protection benefits the desert tortoise (Gopherus agassizii) abundance: The influence of three management strategies on a threatened species. Herpetological Monographs 28:66-92.

Response to Comment

2. Site selection criteria used to identify recipient sites for translocation included consideration of measures of habitat quality. Identified recipient sites include a variety of habitat factors (vegetation, soils, etc.). In addition, individual tortoises will be placed in locations within recipient sites that most closely match the area from which they were removed, as discussed in Section 2.1.2.3. In consultation with USFWS, and as described in Section 2.1.2 of the SEIS, the Marine Corps proposes a variety of translocation methods (including handling procedures, exclusion fencing, translocation procedures, and clearance surveys) to enhance the success of the translocation program. A monitoring program is also proposed to determine the effectiveness of the translocation.

Comment ID: W-35 **Received: November 14, 2016**

Irene Fisher

November 14, 2016

29 Palms SEIS Project Team
c/o Cardno Government Services
3888 State Street, Suite 201
Santa Barbara, CA 93103

Re: Draft Supplemental EIS for Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at the Twentynine Palms Marine Corp Air Ground Combat Center

Dear Sir or Madam:

As a cattle rancher and owner of the Shield F Ranch in the California Mojave Desert, I have reviewed and commented on a multitude of planning and project documents prepared for the Mojave Desert. These documents include the Marine Corps' land acquisition and airspace establishment proposal and this Draft Supplemental EIS (SEIS). My family and I are proud supporters of the Marines and the base at Twentynine Palms.

The Shield F is a historic cattle ranch located in the West Mojave Desert southeast of Barstow, California. Cattle grazing has occurred on these lands for well over 150 years; my family has been ranching these lands for over 40 years. We own 3,146 acres of land in fee and we hold the lease to the Ord Mountain Allotment, which is a 150,000-acre BLM Cattle Grazing Allotment.

I have read the Marine Corps' findings and I'm glad to see that the Marines have concurred that cattle grazing and desert tortoise are not incompatible uses on BLM lands. I am looking forward to working together with the Marines on this. Thank you for the opportunity to comment on the Draft SEIS.

Sincerely,

Irene Fisher
Shield F. Ranch

Response to Comment

Thank you for your comment.

Comment ID: W-36 **Received: November 14, 2016**

G | D | B Gatzke Dillon & Ballance LLP
LAWYERS

November 14, 2016 *By Electronic Submission and U.S. Mail*

29Palms SEIS Project Team
c/o Cardno Government Services
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Re: Comments on Supplemental Environmental Impact Statement for Land Acquisition and Airspace Establishment, USMC Air Ground Combat Center, Twentynine Palms, CA.

Dear SEIS Project Team:

This firm represents EcoLogic Partners, Inc. (EcoLogic), a consortium of outdoor recreation groups that fights for public access to public lands throughout the United States. EcoLogic's members include the American Sand Association (ASA), the Off-Road Business Association (ORBA), and the American Motorcyclists Association District 37 (AMA D37). EcoLogic and its members represent thousands of families who routinely visit Johnson Valley and nearby areas for purposes of engaging in camping, hiking, off-highway vehicle (OHV) recreation, rock hounding, hunting, photography, other related activities.

EcoLogic has actively participated in each aspect of the United States Marine Corps (USMC) effort to acquire and use portions of the Johnson Valley recreation area for multi-level live-fire military training. We are acutely aware of the role that desert tortoises play within the ecosystem of the Western Mojave Desert, which includes the proposed military expansion zone. Like many others, we were concerned that the proposed live-fire exercises would further deplete desert tortoise populations in areas that have suffered sharp declines in tortoise numbers over the last 20 years, due mostly to predation and disease.

The USMC has proposed to capture as many tortoises as it can find in the live-fire training zones and move them to various "recipient" sites, in hopes of saving these tortoises and propping up the depleted tortoise population in these recipient areas. The draft Supplemental Environmental Impact Statement (SEIR) professes to analyze the relocation plan's potential impacts on tortoises and other resources. EcoLogic does not oppose translocation of threatened or endangered species, provided the technical evidence shows a high likelihood of success. In this case, however, the proposed translocation plan – and the SEIS analysis of that plan – fails to give the technical assurances necessary.

2762 Gateway Road
Carlsbad, California 92009
T 760.431.9501
F 760.431.9512
gdandb.com

Response to Comment

Note: This letter was submitted twice, once via the website and then by mail.

No comments/questions on this page.

Comment ID: W-36 (continued) **Received: November 14, 2016**

G | D | B Gatzke Dillon & Ballance LLP
LAWYERS

29Palms SEIS Project Team
September 25, 2012
Page 2

The proposed translocation plan suffers from a host of deficiencies, including but not limited to:

- The plan includes no habitat characterization study to determine whether conditions at the recipient sites sufficiently mirror those at the capture site(s) from which a particular cohort of tortoises is derived. 1
- Many of the recipient sites are located too far away from the capture sites. Data discussed in the SEIR demonstrates that tortoises moved more than 3 or 4 miles (4.8 km or 6.5 km) often fail to survive. 2
- The plan fails to mandate that translocation occur only after drought conditions abate. 3
- The plan evinces no effort to determine the predation threat at each of the recipient sites. Nor does the plan consider whether the relocated tortoises will attract predators and thereby put the existing tortoise population in jeopardy. 4
- The plan fails to include a detailed program for minimizing predation threats to the translocated tortoises or to the existing tortoise population at the recipient site. Coyotes, for example, can easily jump over and/or tunnel under the fencing as proposed. 5
- The plan does not provide adequate guidance regarding the proper time of year, time of day, amount of daylight (often affected by mountain shadow), temperature, and soil conditions for safely conducting the translocation of tortoises. 6
- The plan does not discuss or provide guidance regarding the amount of time it takes for a translocated tortoise to find or create a burrow deep enough to protect it from predators and extreme temperatures. 7
- The plan fails to discuss how captured tortoises will be tested for upper respiratory tract disease (URTD) before being translocated. This is critical because tortoises infected with URTD can remain asymptomatic for extended periods of time. 8
- The monitoring plan is too short in duration, given the lifespan of the typical desert tortoise. 9
- The monitoring plan includes no action-forcing measures in the event tortoise mortality reaches dangerous levels. The SEIS mentions the need for an adaptive management plan (SEIS, p. 2-8) but provides no details as to the content of such a plan. 10

With respect to the SEIS, it considers only three alternatives, one of which is mis-named the "No Action" alternative. The other two are barely distinguishable. This is not the range of alternatives that NEPA requires, especially when the so-called "No Action" alternative actually proposes a tortoise relocation plan like the other two. To assist the Marine Corps in meeting its legal obligation to consider a reasonable range of alternatives, EcoLogic has suggested that the Marines forego live-fire operations in those areas with average to above-average tortoise densities and return them to their former uses under BLM's applicable land plans (the CDCA and West Mojave Plan). This move would protect the tortoises, eliminate the adverse effect of translocating them, and further the shared-use ethos that informs the National Defense 11

Response to Comment

Thank you for your comments.

1. Site selection criteria discussed in Sections 2.1.1.1, 2.2.1.1, and 2.3 include measures of habitat quality. Identified recipient sites include a variety of habitat factors (vegetation, soils, etc.). Text in Section 2.1.2.3 of the Final SEIS has been updated to indicate that individual tortoises would be placed "in an area similar to that from which they were collected."

2. Site selection criteria discussed in Sections 2.1.1.1, 2.2.1.1, and 2.3 include consideration of translocation distance. The conclusion stated in this comment is not found in the SEIS. Section 4.1.1.3 of the SEIS provides extensive discussion of studies that have found no significant effect of translocation on desert tortoises compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012).

3. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought.

4. Site selection criteria described in Section 2.2.1.1 include consideration of threats from predators. Furthermore, site-specific data on predator presence is provided in Tables 3.1-3 and 3.1-4 and analyzed under the "Predation" subsection in Sections 4.1.2.1 and 4.1.3.1. Translocation methods include measures to reduce predator attraction (e.g., rinsing tortoises that void during translocation) as described in Section 2.1.2.1 of the SEIS.

5. The SEIS includes predator control (Section 2.2.3), provides a description of measures to address offending ravens (Section 2.2.3), and addresses coyote subsidization on the Combat Center (Section 4.1.3.1). The fencing proposed is not designed or intended to restrict predator movement.

6. Sections 2.1.2.3 and 2.2.2.3 in the SEIS and the translocation plans provided in Appendix A provide details on the time of year and weather conditions (per USFWS 2010 guidance) that would be followed for translocation.

7. The summary of Field et al. (2007) in Section 4.1.1.3 has been expanded to state that half of the translocated tortoises were observed digging on the day

of their release and that, while most of these tortoises did not construct complete burrows during the four-hour observation period on the day of their release, one male successfully completed a burrow in a sandy wash in less than 1.2 hours.

8. Section 2.1.2 of the SEIS has been modified to make it clear that standard health assessments contemplated in this SEIS include blood work with ELISA testing for *Mycoplasma* spp. The Combat Center has agreed not to translocate ELISA-positive tortoises into desert tortoise critical habitat.

9. As discussed in Section 1.3.2, the Marine Corps has committed to a 30-year monitoring program that should detect long-term effects of translocation.

10. The BO identified incidental take limits associated with translocation. As indicated in Section 1.3.2 of the SEIS, "If monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population, the Marine Corps must request re-initiation of consultation on the proposed action." This re-initiation of consultation with the USFWS would allow the Marine Corps to adapt resulting management actions to circumstances at the time of consultation.

11. As discussed in Section 1.1 of the SEIS, translocation was part of the original proposed action that was evaluated in the 2012 EIS and committed to in the 2013 ROD. Since then, the Marine Corps has conducted additional detailed studies and worked cooperatively with the USFWS, the California Department of Fish and Wildlife, and the BLM on refined translocation plans, as required in the 2012 BO issued by the USFWS. The DON has elected to prepare the SEIS evaluating potential impacts from alternative tortoise translocation plans.

    As discussed in Section 2.5.1 of the SEIS, foregoing training in the expansion area would not meet the purpose and need for the proposed action in this SEIS. The implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

Comment ID: W-36 (continued) **Received: November 14, 2016**

G | D | B Gatzke Dillon & Ballance LLP
LAWYERS

29Palms SEIS Project Team
September 25, 2012
Page 3

Authorization Act (NDAA). EcoLogic also suggests that the SEIS be modified to include a true No Project alternative.

In addition, the SEIS includes the following defects:

- It fails to provide the tortoise densities at the sites threatened by military training activities, i.e., the "capture" sites. 12
- It fails to include a "carrying capacity" analysis for each of the recipient sites. 13
- It fails to include a predator threat assessment for each of the recipient sites. 14
- It fails to evaluate whether the proposed fencing around the recipient sites will be high enough or installed deeply enough to prevent coyotes from preying on tortoises. 15
- It fails to assess whether tortoises will be able to burrow under the protective fencing. 16
- It fails to address all eleven (11) relocation criteria set forth in the 2011 USFWS draft guidance on desert tortoise relocation. 17
- It does not fully assess the potential problems associated with long-distance translocation. This omission is especially significant given that, as the SEIS admits, "[u]nder the proposed action (all alternatives), most of the tortoise would be translocated long distances," defined as more 5 miles (8 km) or greater (SEIS 4-16—4-17.) 18
- It fails to explain how it has incorporated the scientific studies summarized on pages 4-3 through 4-10 to inform and develop the translocation plan. These studies demonstrate that long-distance translocation, such as that being proposed, creates significant short-term and long-term risks for tortoises. 19

One other global theme must be stated here. The live-fire impact on desert tortoises would not exist *but for* the Marine Corps' desire to expand its military training operations into this part of Johnson Valley. Thus, the impact is a Marine Corps problem. The Marines cannot simply relocate that problem to someone else's doorstep or backyard. Existing uses at or near the proposed recipient sites should not be affected by the translocation plan and the insertion of confused, highly-mobile tortoises into areas near human activity. For example, all existing and/or planned recreational uses, including those that support OHV recreation, should remain undisturbed by the translocation project, even if the project begins to fail due to recreation-related effects on translocated desert tortoises. The responsibility for such effects rests with the Marine Corps – not BLM and not the recreating public. Accordingly, in the event the relocation plan falters, the Marine Corps must devise a corrective fix that does not disrupt existing uses. 20

With the need to protect existing uses in mind, we recommend that the USMC focus on recipient sites well removed from areas where OHV use and other recreational activities take place, and reject those sites that are near human uses. Lucerne-Ord, for example, is located adjacent to the Johnson Valley OHV area and is nearly ten miles from any tortoise capture site. These two criteria alone should disqualify it as a recipient site. The recipient site at Rodman-Sunshine Peak South should be eliminated from consideration for similar reasons (see SEIS, p. 2-19). 21

Response to Comment

12. Desert tortoise densities in impacted areas are provided in Figure 1.3-1 of the SEIS.
13. Proposed recipient sites were carefully selected based on the site selection criteria outlined in SEIS Sections 2.1.1.1, 2.2.1.1, and 2.3 to ensure that they can support additional tortoises. Also, as described in the "Population Viability" sub-sections of Sections 4.1.2.1, 4.1.3.1, and 4.1.4.1, it is critical that the post-translocation density is above the minimum density necessary to support population viability.
14. See response to Comment #4.
15. See response to Comment #5.
16. As described in Section 2.1.2.2 of the SEIS, tortoise exclusion fencing would be constructed based on USFWS guidance.
17. The SEIS addresses USFWS guidance on desert tortoise in Section 4.1.1.2 and includes relevant measures in the site selection criteria discussed in Sections 2.1.1.1, 2.2.1.1, and 2.3.
18. See response to Comment #2 above.
19. The proposed action incorporates lessons learned from past translocation efforts and scientific studies (e.g., selection of recipient sites with low predation rates was learned from previous scientific studies, for example Esque et al. 2010). See also the response to Comment #2 above.
20. The Marine Corps has worked with the BLM to identify recipient and control site locations that would be compatible with existing land uses. Impacts to land use under Alternatives 1 and 2, including recreation, were analyzed in Section 4.2 and found to be less than significant. BLM is a cooperating agency for this SEIS.
21. Recipient and control sites were identified based on criteria listed in Sections 2.1.1.1, 2.2.1.1 and 2.3. Under Alternatives 1 and 2, Rodman-Sunshine Peak South would be a control site and would not receive translocated tortoises. In addition, the description of this control site has been corrected in the Final SEIS to not include Johnson Valley OHV area north of the WEA. A fence along the west side of Camp Rock Road in the Cinnamon Hills and Anderson Dry Lake areas will be added as a potential mitigation measure in the Final SEIS for consideration in the ROD; this should reduce illegal OHV use that could pose additional impacts to translocated desert tortoises and their habitat.

Comment ID: W-36 (continued) **Received: November 14, 2016**

Response to Comment

G | D | B Gatzke Dillon & Ballance LLP
LAWYERS

29Palms SEIS Project Team
September 25, 2012
Page 4

We appreciate this opportunity to comment on the SEIS. If you have any questions regarding the information contained in this letter, please do not hesitate to call me.

Very truly yours,

David P. Hubbard
of
Gatzke Dillon & Ballance LLP

DPH/rlf

Comment ID: W-37 **Received: November 14, 2016**

From: Myles B. Traphagen- Solar Biology LLC

Date: November 14, 2016

Public comment submitted regarding:

"Supplemental Environmental Impact Statement (SEIS) for Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at Marine Corps Air Ground Combat Center Twentynine Palms, California"

Introduction

The translocation plan, while highly detailed in regard to animal tracking and disease monitoring, does not adequately address weather, drought, vegetation quality, and predation. These factors are known to have a strong affect on desert tortoise survivorship. I will provide an overview of each of the above, including related and relevant translocation studies, and offer recommendations on how to address the above factors.

Predation by Canids

The translocation study most relevant to this one would be the Fort Irwin 2008 desert tortoise translocation. Both involve military readiness and expansion into public lands. There are valuable lessons to be learned from this analogous project that are well described in a publication resulted from the Ft. Irwin translocation, *"Effects of subsidized predators, resource variability, and human population density on desert tortoise populations in the Mojave Desert, USA."* Esque et al. (2010).

Predation, largely by coyotes (*Canis latrans*), was a major theme of the paper in both the results and the discussion. Furthermore, the authors discuss predation on desert tortoises at length and summarize previous observations dating back to 1948. The result is that virtually all studies the cited hypothesized about the effects of predation in the context of drought and prey base. It is worth quoting a portion of this discussion here: 1

> "Although no temporal prey base data are available for analysis from our study sites, we hypothesize that high predation rates by coyotes on desert tortoises were strongly influenced by low population levels of normal prey bases for coyotes (Rogers 1965, MacCracken & Hansen 1987, Ortega 1987). Small mammals, such as lagomorphs (Clark 1972, Saethre 1995) and rodents, may be particularly vulnerable to drought and are known to decrease to densities as low as 1 ha–1 when drought conditions prevail for 1yr or more (Chew & Butterworth 1964,Whitford 1976, Brown & Harney 1993). In our study areas, drought occurred in the year prior to the majority of predation events. Similar observations of predation have been made by those conducting desert tortoise research, beginning with the seminal work of Woodbury & Hardy (1948), who observed

1

Response to Comment

Note: This letter was submitted twice.

Thank you for your comments.

1. Consideration of predation was included in the site selection criteria derived from USFWS guidance on tortoise translocation. Accordingly, recipient sites for Alternatives 1 and 2 were selected partially based on low predation potential.
   The proposed action includes predator control measures, particularly focused on canids, and monitoring of predators at all sites (Appendix A).

   Section 4.1.1.3 of the SEIS provides extensive discussion of studies that have found no significant effect of translocation on desert tortoises compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012).

Comment ID: W-37 (continued) **Received: November 14, 2016**

that predation on desert tortoises increased in 1945 and 1946 when the numbers of rabbits and rodents were low. Similar observations continued across decades of field research, and each time a low prey base was invoked – although in none of these cases was the prey base actually quantified (Turner et al. 1984, Peterson 1994, Nussear 2004, Field et al. 2007). Bridging this gap in ecological information would be an excellent way to test this hypothesis;"

The evidence is quite strong that the effects of canid predators on desert tortoises as a result of drought and the ensuing low prey base of lagomorphs, is largely neglected and needs to be quantified if we are to obtain an accurate assessment of its effects on tortoise mortality.

Vegetation attributes of resident and proposed translocation sites

The translocation plan is overly broad in its description of habitat types and lacks fine detail regarding vegetation that is know n to be advantageous to desert tortoise survival and health, namely PEP plants (Potassium Excretion Potential). The use of Southwestern GAP analysis to quantify habitat may be inappropriate for the scale of the translocation for it relies on remotely sensed vegetation classification that does not have the ability to detect annual plant diversity . Finer scale on-the-ground vegetation inventory and analysis may be more appropriate in order to ensure a greater likelihood of translocation success, i.e. low mortality.

Many species of annual plants are seasonally very important to desert tortoises. Potassium Excreting Potential (PEP) plants are plant species that are known to have low potassium levels (Oftedal 2002). In order to excrete excess potassium, which can be toxic to desert tortoises, they need adequate water and protein in the form of nitrogen from their diet in order to bind it in uric acid crystals to excrete. Desert tortoises have evolved, or adapted, to exist on a high fiber, low carbohydrate diet that is usually high in protein in the early spring when new growth of annuals is available (Oftedal et al., 2002). Observations and studies of their plant selection in the wild has shown that they will select the majority of their diet from plants that may only constitute a very small percentage of the available plant biomass of their area (Jennings 2002). Common species of PEP plants that occur throughout the Mojave Desert are: *Camissonia claviformis, Chaenactis fremontii, Descurainia pinnata, Erodium cicutarium, Euphorbia albomarginata, Lepidium lasiocarpum, Menzelia albicaulis, Opuntia basilaris, O. ramosissima, Plantago ovata, P. patagonica*. There can also be considerable variation of within genera of PEP. For example, *Cryptantha angustifolia* and *C. circumscissa* are ranked low in PEP index while *Cryptantha micarantha* & *C. nevadensis* rank high. It is also worth noting that certain annual grasses, such as *Aristida adscensionis* and *Bouteloua barbata,* can be highly nutritious and possess abundant PEP and have the ability to persist late in the season long after most annuals have completed their growing seasons.

2

The germination and production of many desert annual plants is highly variable in time and space according to moisture conditions, and thus exhibit higher cover, species diversity and biomass only in years of high winter rainfall and relatively cool springs (Oftedal 2003). Beatly (1974) concluded that rainfall that occurs from late September to mid-December is the most important for desert plants and other organisms. Therefore, the presence or absence of annual plants in any given year or season does

2

Response to Comment

2. Vegetation was an important component of the habitat quality considerations that went into site selection of potential translocation recipient sites. GAP analysis was used in the SEIS analysis only to calculate total vegetation acreage impacts, but the detailed field studies and surveys conducted in 2014 and 2015, which informed the application of site selection criteria and habitat analysis to identify recipient sites, included consideration of vegetation types and availability as observed in the field. Additional discussion of forage plants and other habitat conditions have been added to the "Population Viability" subsection of Section 4.1.2.1 as well as Section 4.1.1.3 of the SEIS. A comparison of plant communities within recipient sites has been added as Table 3.1-3.

Comment ID: W-37 (continued) **Received: November 14, 2016**

not preclude them from occurring during other times of the year or decade. Vegetation monitoring can provide site specific information as to whether certain sites provide better forage resources than others in most years.

Weather, drought and tortoise survivorship

Drought is one of the most significant factors that affects desert tortoise mortality. Numerous studies in the Mojave desert have noted this. The ultimate consequence of drought is low annual biomass production, or in extreme events, the failure of annual vegetation to emerge at all. Study plots in the West Mojave show increased mortality of tortoises due to predation in drought years (Berry 1974, Peterson 1994, Esque 2010), yet studies in the East Mojave show mortality in drought years occurring from lack of forage, but not predation (Peterson 1994, Longshore et al., 2003, Field et al., 2007. However, with increased population growth in the East Mojave this may not prove to hold true over time. Careful monitoring of weather and vegetation can help to ensure a higher likelihood of survivorship for translocated tortoises. 3

- Turner et al., 1984- This study was done in the Ivanpah Valley. In 1980 mortality was 4.7% in males and 4.2% females. In 1981, following a drought year, mortality increased to 16.7% in males and 19.2% in females. Grass and forb production was 8.7 g/m2 in 1980 and 0.07 g/m2 in 1981.
- Peterson 1994- Two populations of adult tortoises were radio telemetered and tracked for three years. One was in the Ivanpah Valley, the other at the Desert Tortoise Natural Area (DTNA). In 1988-89 no tortoises died at either site. In 1990, a drought year, 41% of the tortoises in the study died and all carcasses were located. Every animal at the DTNA (west Mojave) showed signs of predation. None of the Ivanpah tortoises showed signs of predation. Peterson also performed blood pathology work, using blood plasma osmolality (POSM) and blood urea nitrogen (BUN) to look for evidence of physiological stress. He also measured Condition Index (CI) and found that CI was not a good predictor of survivorship. POSM and BUN predicted mortality far more accurately than CI.
- Longshore et al., 2003- Two populations in Lake Mead NRA were studied and radio tracked over a nine year period from 1992 to 2001. In 1994 and 1995 survivorship at both sites was 96% and 100%. The Cottonwood site experienced severe drought in 1996 and there was a complete failure of annual vegetation production and survivorship dropped to 68.6% while the Grapevine site held steady at 100% survival. 30% of telemetered animals died in a single year of drought. Drought effects continued for three more years at Cottonwood and mortality continued, while Grapevine had no tortoise deaths. Annual biomass production at Cottonwood was absent to minimal from 1996 to 1999. Grapevine experienced low biomass in 1996 and 1999, but not nearly as low as the Cottonwood site.
- Field et al., 2007- This study took place at the Large-Scale Translocation Study (LSTS) site located near Jean, NV. 32 adult and 10 juvenile tortoises were translocated during a drought year in 1997 and experienced 21.4% mortality that year. No tortoises died in 1998, which was one of the top five years on record for Las Vegas rainfall. Tortoises translocated to the LSTS site grew

3

Response to Comment

3. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Recipient sites were also selected based on overall habitat quality; relatively better quality habitat is in part a function of long-term rainfall patterns. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought.

Comment ID: W-37 (continued) **Received: November 14, 2016**

about 25 times faster in carapace length during 1998 than they did during 1997. This project was testing translocation as a tool for conservation, yet did to track any wild animals as a control.

- Field et al., 2003- This project released tortoises into the LSTS to test seasonality of translocation. In spring 1998,14 females, 16 males, and 10 juveniles were released. In fall 1998, 16 females, 14 males, and 10 juveniles were released. In winter 1999, 9 females, 21 males, and 10 juveniles were released. No spring release adult tortoises died, but 22% of fall (n=6) and 21% of winter (n=6) released tortoises died. 22% (2/9) of juveniles released in spring died, while 42% (3/7) of juveniles released in fall perished, and none (0/6) from the winter group found dead. Distances of tortoise movements were also measured. The study suffered from a small sample size for juveniles, and did not incorporate any control/resident animals in the study.
- Beatly 1974- This paper quantified a rainfall threshold for spring annuals, that being a rainfall event of >25mm occurring between late September and mid December as the most important moisture that matters biologically to desert organisms, namely the spring bloom of annual plants. Total annual rain matters less than timing and event size. Rainfall effect is also contingent on temperature, and the first fall rain needs to occur after summer temperatures have subsided. The paper was published in 1974, and growing seasons have expanded, therefore rains that begin in October may be more accurate. Summer rains were deemed to have little effect on the biota due to most organisms being dormant in the hot season.

Recommendations:

1. Implement canid prey base surveys. Lagomorphs are the primary prey base for coyotes. Knowing their relative densities would add a very relevant covariate in to use in analyzing factors influencing tortoise mortality.
2. Implement predator surveys. This is related the point above. Should include surveys of all known land based predators. 4
3. Perform a vegetation inventory with annual monitoring on translocation and control sites. The need to quantify annual plant diversity and abundance from year to year is crucial.
4. Establish a network of weather monitoring stations and/or rain gauges to accurately measure precipitation variability would assist in describing the points mentioned above.

References

J. C. Beatley, "Phenological Events and Their Environmental Triggers in Mojave Desert Ecosystems," Ecology, vol. 55, no. 4, pp. 856–863, Jul. 1974.

K. H. Berry and California. Division of Highways. District 9, The desert tortoise relocation project : status report for 1974. Ridgecrest, Calif.; Bishop, Calif: The author ; Division of Highways, District 09], 1975.

4

Response to Comment

4. Regarding Recommendations:

4.1. The Combat Center has decided to proactively implement predator control measures without waiting for prey base triggers.

4.2. See response to Comment #1 above.

4.3. The Combat Center will be performing long-term vegetation monitoring, as described in Appendix A.

4.4. Establishing a network of rain gauges throughout the recipient and control sites has been added to the SEIS as a potential mitigation measure.

Comment ID: W-37 (continued) **Received: November 14, 2016**

T. C. Esque, K. E. Nussear, K. K. Drake, A. D. Walde, K. H. Berry, R. C. Averill-Murray, A. P. Woodman, W. I. Boarman, P. A. Medica, and J. Mack, "Effects of subsidized predators, resource variability, and human population density on desert tortoise populations in the Mojave Desert, USA," Endangered Species Research, vol. 12, no. 2, pp. 167–177, 2010.

K. J. Field, C. R. Tracy, P. A. Medica, R. W. Marlow, and P. S. Corn, "Return to the wild: Translocation as a tool in conservation of the Desert Tortoise (Gopherus agassizii)," Biological Conservation Biological Conservation, vol. 136, no. 2, pp. 232–245, 2007.

K. M. Longshore, J. R. Jaeger, and J. M. Sappington, "Desert tortoise (Gopherus agassizii) survival at two eastern Mojave desert sites: death by short-term drought?," Journal of Herpetology, vol. 37, no. 1, pp. 169–177, 2003.

Oftedal, O. 2002. Nutritional ecology of the desert tortoise in the Mohave and sonoran Deserts. In: T. Van Devender (Ed.) The Sonoran Desert Tortoise. University of Arizona Press. Tucson, Arizona. pp. 194-241.

Oftedal, O. 2002 S. Hillard, and D. J. Morafka. "Selective spring foraging by juvenile desert tortoises (Gopherus agassizii) in the Mojave Desert: Evidence of an adaptive nutritional strategy." Chelonian Conservation and Biology 4.2 (2002): 341-352.

Oftedal, O. 2003. Are Desert tortoises nutritionally constrained by a shortage of high PEP plants, and if so, what do we do? 28th Annual meeting and symposium of the desert tortoise council, Feb. 21-23, 2003. Abstract. http://www.deserttortoise.org/abstract/abstracts2003/2003abs47.html

C. C. Peterson, "Different rates and causes of high mortality in two populations of the threatened desert tortoise Gopherus agassizii," Biological Conservation Biological Conservation, vol. 70, no. 2, pp. 101–108, 1994.

F. B. Turner, P. A. Medica, and C. L. Lyons. "Reproduction and survival of the desert tortoise (Scaptochelys agassizii) in Ivanpah Valley, California," Copeia, pp. 811–820, 1984.

5

Response to Comment

Comment ID: W-38 **Received: November 14, 2016**

Comment ID: 17
Name: Cybele Knowles
Email Address: cknowles@biologicaldiversity.org
Comment: Please see attached PDF, which contains 4,696 comments from supporters with the Center for Biological Diversity. Many of these letters were personalized so we appreciate your close review.Thank you,Cybele KnowlesCommunications AssociateCenter for Biological Diversitywww.biologicaldiversity.org
Organization: Center for Biological Diversity
Address 1:
Address 2:
City:
State:
Postal Code:
Mailing List? No
Attachment: Yes
Don't use name? No
Date Received: 11/14/2016 4:48:06 PM CT
Prefer Email: No
Prefer: Mail: No
Sensitive Info: No

Response to Comment

Comment ID: W-38 (continued) **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

I am writing to urge you to rethink your training strategy within the Twentynine Palms expansion area to look at alternative ways to practice that are compatible with desert tortoise conservation. 1

The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during drought. Such a move could doom 50 percent of both the relocated and resident tortoises to death. This is unacceptable. This is a federally and state-protected species. 2

If you do go forward with the relocation at all, any impacts to desert tortoise populations on the base or BLM-managed public lands must be fully offset by acquiring, protecting and managing additional desert tortoise habitat in the western Mojave desert. I urge you to join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction spiral. 3

Sincerely,

cybele knowles

Response to Comment

Note: This is a sample of the form letters. Personalized letters are included separately.

Thank you for your comments.

1. As discussed in Section 2.5.1 of the SEIS, foregoing training in the expansion area would not meet the purpose and need for the proposed action in this SEIS. The implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

2. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought.
   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

3. The proposed action in the SEIS is intended to satisfy the requirements of the 2012 Biological Opinion and 2013 Record of Decision, which require translocation to mitigate significant effects on the desert tortoise from the 2012 EIS proposed action. Regarding impacts from translocation, see the response to Comment 2 above. As discussed in Section 2.5.2 of the SEIS, an alternative involving training without translocation would result in a loss of tortoises and tortoise habitat that is not compatible with recovery of this threatened species.

Comment ID: W-39 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

These animals live long lives and require their own territories. The sparse resources available in the relocation areas are insufficient to sustain additional tortoises. The effect of the move will be to pit the tortoises against each other and the environment and will result in the death of many of these creatures. 1

I am writing to urge you to rethink your training strategy within the Twentynine Palms expansion area to look at alternative ways to train that are compatible with desert tortoise conservation. 2 The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during drought. Such a move could doom 50 percent of both the relocated and resident tortoises to death. This is unacceptable. This is a federally and state-protected species. 3

If you do go forward with the relocation at all, any impacts to desert tortoise populations on the base or BLM-managed public lands must be fully offset by acquiring, protecting and managing additional desert tortoise habitat in the western Mojave desert. I urge you to join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction spiral. 4

Sincerely,

Elissa Pekrul

Response to Comment

Thank you for your comments.

1. Proposed recipient sites were carefully selected based on the site selection criteria outlined in SEIS Sections 2.1.1.1, 2.2.1.1, and 2.3 to ensure that they can support additional tortoises, as well as continue to support resident tortoises.
2. As discussed in Section 2.5.1 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.
3. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively.

   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.
4. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

Comment ID: W-40 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

Please leave the desert tortoises where they are.

The last time the BLM moved them en masse, the long-term survival rate of the transplants was about 50 percent. 1

In other words, the tortoises stand a far better chance of survival in the middle of a live-fire battlefield than they do under the government's tender care—a tank would have to drive over them one by one in order to kill them, and due to their solitary nature even a well-placed bomb wouldn't take out more than a couple of individuals. But you guys can do it wholesale. 2

This is a classic example of a well-meaning but poorly thought out solution exacerbating a problem instead of fixing it.

Thanks,

Sincerely,

Douglas Smith

Response to Comment

Thank you for your comment.

1. As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012).
2. As discussed in Section 2.5.2 of the SEIS, and determined by the USFWS in their 2012 Biological Opinion, conducting the training approved in the 2013 Record of Decision without translocation would result in a loss of tortoises and tortoise habitat that is not compatible with recovery of this threatened species.

Comment ID: W-41 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

Another expansion??? Didn't the tragedy of Fort Irwin killing thousands of translocated tortoises teach you? You need to rethink bombs and weapons and instead hire psychologists to fight the real war in the minds of those who hate our world wide aggression to support corporate takeover of natural resources in sovereign countries. Stop destroying biodiversity to train our citizens to kill. 1

I am writing to urge you to rethink your training strategy within the Twentynine Palms expansion area to look at alternative ways to train that are compatible with desert tortoise conservation. The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during drought. Such a move could doom 50 percent of both the relocated and resident tortoises to death. This is unacceptable. This is a federally and state-protected species. 2

If you do go forward with the relocation at all, any impacts to desert tortoise populations on the base or BLM-managed public lands must be fully offset by acquiring, protecting and managing additional desert tortoise habitat in the western Mojave desert. I urge you to join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction spiral. 3

Sincerely,

naturalist Alison Sheehey

Response to Comment

Thank you for your comments.

1. The acquisition of lands and the implementation of training on acquired lands is not reevaluated in this SEIS because they were already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

2. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively.

   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

3. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

Comment ID: W-42 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

Is this move illegal? It will ultimately kill large populations of tortoises which are a "protected" species! 1

I'm writing to urge you to rethink your training strategy within the Twentynine Palms expansion area to look at alternative ways to train that are compatible with desert tortoise conservation. 2 The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during drought. Such a move could doom 50 percent of both the relocated and resident tortoises to death. This is unacceptable. This is a federally and state-protected species. 3

If you do go forward with the relocation at all, any impacts to desert tortoise populations on the base or BLM-managed public lands must be fully offset by acquiring, protecting and managing additional desert tortoise habitat in the western Mojave desert. I urge you to join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction spiral. 4

Sincerely,

Cyndi Myatt

Response to Comment

Thank you for your comments.

1. The proposed action in this SEIS is to translocate tortoises out of harm's way as required in a 2012 Biological Opinion issued by the U.S. Fish and Wildlife Service and the 2013 Record of Decision, which require translocation to mitigate significant effects on the desert tortoise from the 2012 EIS proposed action. The proposed translocation would follow a Translocation Plan approved by the USFWS and would comply with all applicable regulations.

2. As discussed in Section 2.5.1 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

3. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively.

   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

4. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

Comment ID: W-43 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

I am writing to urge you to rethink your training strategy within the Twentynine Palms expansion area to look at alternative ways to train that are compatible with desert tortoise conservation. The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during drought. Such a move could doom 50 percent of both the relocated and resident tortoises to death. This is unacceptable. This is a federally and state-protected species. 1 2

Desert tortoises are not like cattle to be rounded up and transported somewhere else. And the current residents in the relocation zone won't welcome the new comers, they will fight to protect their burrows. And also the burrows can be 10 to 12 feet in the ground to protect them from the sun's heat and provide insulated protection in winter for hibernation. 3

I urge you to join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction spiral. 4

Sincerely,

Sharon Ford

Response to Comment

Thank you for your comments.

1. As discussed in Section 2.5.1 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

2. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively.

   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

3. Proposed recipient sites were carefully selected based on the site selection criteria outlined in SEIS Sections 2.1.1.1, 2.1.1.2, 2.2.1.1, and 2.3 to ensure that (1) they can support additional tortoises, as well as continue to support resident tortoises; (2) there are adequate soils for construction of new burrows and water catchments, and a native seed bank to provide forage; and (3) sites are located away from busy roadways.

4. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

Comment ID: W-44 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

Wild species are now known to have sufficient memory to have become adapted to the habitats in which they developed as young.
In a species like tortoise, their "imprinting"of their individual habitat has been shown to be necessary for survival as adults.
Since over 50% do NOT survive translocation, this method of protecting desert tortoises is inneffectual and should not be the management tool to apply to the tortoises on federal or military land. 1

Since the Twentynine Palms expansion area contains a highly important population critical to the long-term survival of the Desert Tortoise, alternative ways to train allowing desert tortoise survival on this critical habitat must be found. 2

The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during drought. Since this species naturally disperses in a slow and limited manner, the proposed dumping of these individuals into already occupied habitat will overly stress the food plant supply; Unless unoccupied historic habitat can bee found upon which to place the tortoises, there would seem no other option than to continue to protect the tortoise over other uses. 3

effectively eradicating 50 percent of both the relocated and resident tortoises must not be the solution to planning use. 4

If you do go forward with the relocation at all, any impacts to desert tortoise populations on the base or BLM-managed public lands must be fully offset by acquiring, protecting and managing additional desert tortoise habitat in the western Mojave desert. I urge you to join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction. 5

Sincerely,

Michael McLaughlin

Response to Comment

Thank you for your comments.

1. As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

2. As discussed in Section 2.5.1 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

3. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought. Proposed recipient sites were carefully selected based on the site selection criteria outlined in SEIS Sections 2.1.1.1, 2.1.1.2, 2.2.1.1, and 2.3 to ensure that (1) they can support additional tortoises, as well as continue to support resident tortoises; (2) there are adequate soils for construction of new burrows and water catchments, and a native seed bank to provide forage; and (3) sites are located away from busy roadways.

4. See response to Comment #1 above.

5. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

Comment ID: W-45 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

The Marine Corps already conducts desert war games overseas. No war games in desert tortoise habitat or the Mojave desert. 1

I am writing to urge you to rethink your training strategy within the Twentynine Palms expansion area to look at alternative ways to train that are compatible with desert tortoise conservation. The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during drought. Such a move could doom 50 percent of both the relocated and resident tortoises to death. This is unacceptable. This is a federally and state-protected species. 2

If you do go forward with the relocation at all, any impacts to desert tortoise populations on the base or BLM-managed public lands must be fully offset by acquiring, protecting and managing additional desert tortoise habitat in the western Mojave desert. I urge you to join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction spiral. 3

Sincerely,

Dennis Therry

Response to Comment

Thank you for your comments.

1. As discussed in Section 2.5.1 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

2. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively.

   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

3. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

Comment ID: W-46 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

I am writing to urge you to rethink your training strategy within the Twentynine Palms expansion area to look at alternative ways to train that are compatible with desert tortoise conservation. The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during drought. Such a move could doom 50 percent of both the relocated and resident tortoises to death. This is unacceptable. This is a federally and state-protected species. 1 2

I disagree completely that more acreage is even necessary. The bases's 932 square miles is ENOUGH! they need to make more efficient use of what they have. 3

If you do go forward with the relocation at all, any impacts to desert tortoise populations on the base or BLM-managed public lands must be fully offset by acquiring, protecting and managing additional desert tortoise habitat in the western Mojave desert. I urge you to join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction spiral. 4

Sincerely,

Craig Marshall

Response to Comment

Thank you for your comments.

1. As discussed in Section 2.5.1 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

2. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively.

   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

3. The acquisition of lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

4. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

Comment ID: W-47 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

As a taxpayer and veteran, I don't want you to do this. War games and training can be done anywhere and this can not be undone.

I urge you to redirect your training strategy. Please do NOT expand within the Twentynine Palms area; and please do look at alternative ways to train that are compatible with desert tortoise conservation. The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during drought. Such a move could doom 50 percent of both the relocated and resident tortoises to death. This is totally unacceptable. The tortoises are a federal and state-protected species.

Any relocation, impacts to desert tortoise populations on the base or BLM-managed public lands must be fully offset by acquiring, protecting and managing additional desert tortoise habitat in the western Mojave desert. Join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction spiral. It may seem inconsequential to you. Most people think their assholes are the center of the universe. But it is not and we as a species are not. Please protect the environment.

As a veteran, I am aware of what kinds of mayhem and damage is done inadvertently. Take your kids and go hiking out in that "desert"...it will change your mind.

Holly Peters

Response to Comment

Thank you for your comments.

1. As discussed in Section 2.5.1 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

2. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively.

   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

3. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

Comment ID: W-48 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

I'm urging you to rethink your training strategy within the Twentynine Palms expansion area to look at alternative ways to train that are compatible with desert tortoise conservation. 1 The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during drought. 2 Such a move could doom 50 percent of both the relocated and resident tortoises to death. This is unacceptable. This is a federally and state-protected species. Relocation is proven to NOT work! Why not relocate your training and make protected "islands" in your lands so the tortoises have a chance to live. 3

If you do go forward with the relocation at all, any impacts to desert tortoise populations on the base or BLM-managed public lands must be fully offset by acquiring, protecting and managing additional desert tortoise habitat in the western Mojave desert. But the best lands are already inhabited by tortoises, and putting more animals in that area means either the immigrant or the inhabitant will die. Land can only support so many tortoises. I urge you to join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction spiral by translocating them. 4

Sincerely,

Janet Westbrook

Response to Comment

Thank you for your comments.

1. As discussed in Section 2.5.1 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

2. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively.

   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

3. Protected Special Use Areas already exist within the Combat Center, as shown in Figure 1.1-1 of the SEIS. See also the response to Comment #1 above.

4. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

   Proposed recipient sites were carefully selected based on the site selection criteria outlined in SEIS Sections 2.1.1.1, 2.2.1.1, and 2.3 to ensure that they can support additional tortoises, as well as continue to support resident tortoises.

Comment ID: W-49 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

I am writing to urge you to rethink your training strategy within the Twentynine Palms expansion area to look at alternative ways to train that are compatible with desert tortoise conservation. 1 There is an inherent problem that exists with the Tortoise population, that is not noted in the public comments. Each animal carries a bacterial strain, that is not compatible with animals from different areas. This is well known, and the reason that so many Tortoises perish when removed to new locations. These pathogens do exist and must be embodied in any future conversation about the proposed Tortoise removal plan. 2 We've spent the last 14 years teaching death, perhaps we can deliberate a few more minutes on sparing the lives of these non combatants.The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during drought. Such a move could doom 50 percent of both the relocated and resident tortoises to death. This is unacceptable. This is a federally and state-protected species. 3

If you do go forward with the relocation at all, any impacts to desert tortoise populations on the base or BLM-managed public lands must be fully offset by acquiring, protecting and managing additional desert tortoise habitat in the western Mojave desert. I urge you to join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction spiral. 4

Sincerely,

Irvin Tiessen

Response to Comment

Thank you for your comments.

1. As discussed in Section 2.5.1 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

2. Section 2.1.2 of the SEIS has been modified to make it clear that standard health assessments contemplated in this SEIS include blood work with ELISA testing for *Mycoplasma* spp. The Combat Center has agreed not to translocate ELISA-positive tortoises into desert tortoise critical habitat.

3. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively.

   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

4. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

Comment ID: W-50 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

Hello,

Please rethink translocation of desert tortoises. 1

Sincerely,

Sarah Diaz

Response to Comment

Thank you for your comments.

1. As discussed in Section 2.5.2 of the SEIS, an alternative involving training without translocation would result in a loss of tortoises and tortoise habitat that is not compatible with recovery of this threatened species and would not satisfy the measures outlined in the 2012 Land Acquisition BO or the 2013 ROD. The proposed action in the SEIS is intended to satisfy the requirements of the 2012 Biological Opinion and 2013 Record of Decision, which require translocation to mitigate significant effects on the desert tortoise from the 2012 EIS proposed action.

Comment ID: W-51 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

I urge you to re-design/re-imagine your training strategy within the Twentynine Palms expansion area. I ask you to look at alternative ways to train that are compatible with desert tortoise conservation. This sort of tortoise relocation failed in 2008. The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during the current ongoing drought. Such a move could doom 50 percent of both the relocated and resident tortoises to death. This is unacceptable. This is a federally and state-protected species. 1 2

If you do go forward with the relocation at all, any impacts to desert tortoise populations on the base or BLM-managed public lands must be fully offset by acquiring, protecting and managing additional desert tortoise habitat in the western Mojave desert. I urge you to join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction spiral. 3

Sincerely,

Susan Williams

Response to Comment

Thank you for your comments.

1. As discussed in Section 2.5.1 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

2. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively.

   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

3. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

Comment ID: W-52 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

I am writing to urge you to rethink your training strategy within the Twentynine Palms expansion area to look at alternative ways to train that are compatible with desert tortoise conservation. The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during drought. Such a move could doom 50 percent of both the relocated and resident tortoises to death. This is unacceptable. This is a federally and state-protected species. 1 2

A major contributing factor in the decline of this species has been the presence of an upper respiratory tract disease (URTD) caused by a microorganism called a mycoplasm. Relocation will stress the animals, and if they survive the move, the combination of stress effects on the immune system with the effects of high density on disease transmission, your actions will put the individuals you move at risk of infection with the mycoplasm. In addition you will be threatening the receiving populations. This plan has the potential to be doubly disastrous. 3

If you do go forward with the relocation at all, any impacts to desert tortoise populations on the base or BLM-managed public lands must be fully offset by acquiring, protecting and managing additional desert tortoise habitat in the western Mojave desert. I urge you to join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction spiral. 4

Sincerely,

Sarah Kupferberg

Response to Comment

Thank you for your comments.

1. As discussed in Section 2.5.1 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

2. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively.

   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

3. Section 2.1.2 of the SEIS has been modified to make it clear that standard health assessments contemplated in this SEIS include blood work with ELISA testing for *Mycoplasma* spp. The health of potential translocatees, plus tortoises at control and recipient sites, have been assessed according to USFWS health assessment protocols, including the ELISA tests for *M. agassizii* and *M. testudineum*. The Combat Center has agreed not to translocate ELISA-positive tortoises into desert tortoise critical habitat. However, the incidence of ELISA-positive tortoises is low and only one individual showed a slight nasal discharge during health assessments. Thus, none of the translocatees qualified for retention in holding pens per USFWS translocation guidance.

4. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

Comment ID: W-53 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

I am writing to urge you to rethink your training strategy within the Twentynine Palms expansion area to look at alternative ways to train that are compatible with desert tortoise conservation. 1

The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during drought. Such a move could doom 50 percent of both the relocated and resident tortoises to death. This is unacceptable. This is a federally and state-protected species. 2

All options considered Base Expansion becomes unnecessary. Tortoises do not understand unfamiliar areas, most die attempting to find familiar ground.
New technologies make massive areas minute as previous needs have been offset by technology.
They were there first!
Wasting Tax Dollars seems to result in Cash Kickbacks to Select Individuals, while USA Military Dies for Profits in the Military Industrial Consortium. 3

If you do go forward with the relocation at all, any impacts to desert tortoise populations on the base or BLM-managed public lands must be fully offset by acquiring, protecting and managing additional desert tortoise habitat in the western Mojave desert. I urge you to join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction spiral. 4

Sincerely,

Richard Nielson

Response to Comment

Thank you for your comments.

1. As discussed in Section 2.5.1 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

2. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively.

   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

3. Commented noted.

4. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

Comment ID: W-54 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

I am writing to urge you to rethink your training strategy within the Twentynine Palms expansion area to look at alternative ways to train that are compatible with desert tortoise conservation. 1 The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during drought. 2 Such a move could doom 50 percent of both the relocated and resident tortoises to death. This is unacceptable. This is a federally and state-protected species. You can figure out a better plan. IF you can figure out how to extracate Bin Laden and civilians in trouble you can figure out a better plan. Have you contacted zoos and other professional organizations that do this without harm to animals or humans. 3

If you do go forward with the relocation at all, any impacts to desert tortoise populations on the base or BLM-managed public lands must be fully offset by acquiring, protecting and managing additional desert tortoise habitat in the western Mojave desert. I urge you to join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction spiral. 4

Sincerely,

Charlotte Lukezich

Response to Comment

Thank you for your comments.

1. As discussed in Section 2.5.1 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

2. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively.

   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

3. The proposed tortoise translocation plans have been developed as a requirement of and in consultation with the U.S. Fish and Wildlife Service. As discussed in Section 2.1.2.1, all tortoise handling would be done by USFWS Authorized Biologists following techniques approved by USFWS.

4. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

Comment ID: W-55 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

I am writing to urge you to rethink your training strategy within the Twentynine Palms expansion area to look at alternative ways to train that are compatible with desert tortoise conservation. 1 The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during drought. Such a move could doom 50 percent of both the relocated and resident tortoises to death. 2 This is unacceptable. This is a federally and state-protected species.

If you do go forward with the relocation at all, any impacts to desert tortoise populations on the base or BLM-managed public lands must be fully offset by acquiring, protecting and managing additional desert tortoise habitat in the western Mojave desert. I urge you to join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction spiral. 3

Concentrated solar a major BLM mistake, only rooftop solar is viable, leave desert tortoises as necessary. 4

Sincerely,

maureen roche

Response to Comment

Thank you for your comments.

1. As discussed in Section 2.5.1 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

2. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively.

   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

3. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

4. Comment noted.

Comment ID: W-56 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

I am a retired US Forest Service wildlife biologist where I retired from the Inyo National Forest out of Bishop. I have not worked specifically with desert tortosies but I believe the proposal to relocate this species is highly suspect and my professional opinion is it will cause mass mortality of the relocated tortoises. You just cannot put that many tortoises in already occupied habitat that has been in drought conditions now for 5 years with no end in sight without mass mortality. 1

The tortoise is on its way to the endangered species list with actions such as this that continue along with solar and and wind power development in that area and highly questionable water use proposals around Joshua Tree to shrink amd fragment the species habitat. Its just a matter of time and this project will contribute to moving the species from threatened toward endangered status. 2

So please rethink your training strategy within the Twentynine Palms expansion area to look at alternative ways to train that are compatible with desert tortoise conservation. 3 The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during drought. Such a move could doom 50 percent of both the relocated and resident tortoises to death. This is unacceptable. This is a federally and state-protected species. 4

If you do go forward with the relocation at all, any impacts to desert tortoise populations on the base or BLM-managed public lands must be fully offset by acquiring, protecting and managing additional desert tortoise habitat in the western Mojave desert. I urge you to join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction spiral. 5

Sincerely,

gary milano

Response to Comment

Thank you for your comments.

1. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought.

2. The desert tortoise is currently listed as a threatened species under the ESA and this translocation action was required by and developed through consultation with the USFWS. Cumulative impacts in the vicinity of the proposed action are analyzed in Chapter 5 of the SEIS and were identified as significant. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

3. As discussed in Section 2.5.1 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

4. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively.

   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and

recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

5. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

Comment ID: W-57 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

I am writing to urge you to rethink your training strategy within the Twentynine Palms expansion area to look at alternative ways to train that are compatible with desert tortoise conservation. The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during drought. Such a move could doom 50 percent of both the relocated and resident tortoises to death. This is unacceptable. This is a federally and state-protected species. 1 2

You have NO idea of the chaos you will cause. These animals small as they may be,are extremely territorial... They WILL FIGHT. they will die. We cannot afford to loose these animals. They are so important to the ecosystems. Please think again. Just because they're not horse or big cat/wolf size it is imperative to protect them. Without the "tinys" the "biggies" cannot survive. ???? 3

If you do go forward with the relocation at all, any impacts to desert tortoise populations on the base or BLM-managed public lands must be fully offset by acquiring, protecting and managing additional desert tortoise habitat in the western Mojave desert. I urge you to join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction spiral. 4

Sincerely,

Ruth Morgan-Bieber

Response to Comment

Thank you for your comments.

1. As discussed in Section 2.5.1 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

2. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively.

   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

3. Proposed recipient sites were carefully selected based on the site selection criteria outlined in SEIS Sections 2.1.1.1, 2.1.1.2, 2.2.1.1, and 2.3 to ensure that (1) they can support additional tortoises, as well as continue to support resident tortoises; (2) there are adequate soils for construction of new burrows and water catchments, and a native seed bank to provide forage; and (3) sites are located away from busy roadways.

4. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

Comment ID: W-58 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

I am writing to urge you to rethink your training strategy within the Twentynine Palms expansion area to look at alternative ways to train that are compatible with desert tortoise conservation. 1 The proposed relocation estimates moving 1,105 adult tortoises and potentially 2,100 juveniles from the expansion area onto other public lands where other desert tortoises already live during drought. 2 Such a move could doom 50 percent of both the relocated and resident tortoises to death. This is unacceptable. This is a federally and state-protected species. Is there just no other way?!! I thought the military's size, not might, was decreasing. 3 Why is so much space needed?

If you do go forward with the relocation at all, any impacts to desert tortoise populations on the base or BLM-managed public lands must be fully offset by acquiring, protecting and managing additional desert tortoise habitat in the western Mojave desert. I urge you to join efforts to put this species on a path to recovery and find a solution that doesn't contribute to its extinction spiral. 4

Sincerely,

F.w. Bishop

Response to Comment

Thank you for your comments.

1. As discussed in Section 2.5.1 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

2. Desert tortoise translocation would occur during the first active season (spring or fall) following approval of the Translocation Plan, regardless of the status of the drought. This is because drought would affect both the medium- and high-impact areas as well as the proposed recipient sites, meaning that tortoises would be subject to these drought pressures whether or not they are translocated. Furthermore, hydrating all tortoises during translocation mitigates at least one factor during a drought. The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively.

   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

3. The land acquisition and implementation of training on acquired lands are not reevaluated in this SEIS because they were already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

4. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

Comment ID: W-59 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

Bad idea..I guess the Marines didn't think realistically!!

Sincerely,

Damian LOPEZ

Response to Comment

Thank you for your comment.

Comment ID: W-60 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

I have lived in and owned property in Joshua Tree for over a quarter of a century. My cousins homesteaded on Whitefeather Road in the early 1950s. My cousins Revena and Gwendolyn had Mojave turtles as friends. The pioneers raced turtles on Turtle Festival days. When I came in 1968, there were scads of turtles. Now there are practically none and I live directly on the Joshua Tree National Park boundary with Bighorn sheep and bobcats on my property.
The Marine Corps idea of moving these turtles and expecting a good result is wishful thinking and terribly damaging. All of my friends in this area are opposed to this turtle removal which will prove to be an environmental disaster. It is paramount that the U. S. Marine Corps find a better way of proceeding. 1
Dale Allan Pelton, Joshua Tree, California.

Sincerely,

Dal Pelton

Response to Comment

Thank you for your comment.

1. The proposed action in this SEIS is to translocate tortoises out of harm's way as required in a 2012 Biological Opinion issued by the U.S. Fish and Wildlife Service and the 2013 Record of Decision, which require translocation to mitigate significant effects on the desert tortoise from the 2012 EIS proposed action. The proposed translocation would follow a Translocation Plan approved by the USFWS and would comply with all applicable regulations.

   The SEIS provides numbers of desert tortoise proposed for translocation to each of the No-Action Alternative recipient sites in Table 7 of the 2011 GTP (Appendix A in the SEIS) and to each of the Alternative 1 and 2 recipient sites in Tables 2.2-3 and 2.3-2, respectively. As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

Comment ID: W-61 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

I am writing you to express my concern for base expansion and the consequent relocation of native desert tortoises. I realize that our military's needs trump environmental concerns. Having said that I think there must be a better solution to relocating the existing population and adding it to an existing population else where. I think some kind of equivalent habitat should be added in the Western Mojave that would have protected status. 1

I also understand that the U.S. Military has done a very superior job protecting both environmental and archeological resources of our military bases. Maybe one solution would be to expand the 29 Palms Base and include an equivalent population of tortoises?

I taught math and science at Twentynine Palms High School for 3 years and still have a cabin in town up on the Park boundary. Also my dad served in the USMC in WWII as a Captain in the First Division so I have more than a little affinity for the USMC and the high desert. 2

Thank you for your service to our country and your best efforts in ameliorating the displacement of these Gopherus agassizi tortoises.

Sincerely,

William Hunt

William Hunt

Response to Comment

Thank you for your comments.

1. Regarding base expansion: As discussed in Section 2.5.1 of the SEIS, the land acquisition and implementation of training on acquired lands are not reevaluated in this SEIS because they were already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

   Regarding relocation: The proposed action in this SEIS is to translocate tortoises out of harm's way as required in a 2012 Biological Opinion issued by the U.S. Fish and Wildlife Service and the 2013 Record of Decision, which require translocation to mitigate significant effects on the desert tortoise from the 2012 EIS proposed action. The proposed translocation would follow a Translocation Plan approved by the USFWS and would comply with all applicable regulations. Proposed recipient sites were carefully selected based on habitat considerations and the site selection criteria outlined in SEIS Sections 2.1.1.1, 2.1.1.2, 2.2.1.1, and 2.3 to ensure that (1) they can support additional tortoises, as well as continue to support resident tortoises; (2) there are adequate soils for construction of new burrows and water catchments, and a native seed bank to provide forage; and (3) sites are located away from busy roadways.

2. Comment noted.

Comment ID: W-62 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

PLEASE don't move these beautiful, sweet creatures from their homes !
They so deserve to be left alone. Moving them will cause them terrible tress--up to half could perish. 1

Sincerely,

Eva Hass

Response to Comment

Thank you for your comments.

1. The proposed action in this SEIS is to translocate tortoises out of harm's way as required in a 2012 Biological Opinion issued by the U.S. Fish and Wildlife Service and the 2013 Record of Decision, which require translocation to mitigate significant effects on the desert tortoise from the 2012 EIS proposed action. The proposed translocation would follow a Translocation Plan approved by the USFWS and would comply with all applicable regulations. Proposed recipient sites were carefully selected based on habitat considerations and the site selection criteria outlined in SEIS Sections 2.1.1.1, 2.1.1.2, 2.2.1.1, and 2.3 to ensure that (1) they can support additional tortoises, as well as continue to support resident tortoises; (2) there are adequate soils for construction of new burrows and water catchments, and a native seed bank to provide forage; and (3) sites are located away from busy roadways.

   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

Comment ID: W-63 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

PLEASE SET AN EXAMPLE OF MILITARY FORWARD THINKING and find a way to train within the Twentynine Palms expansion area that is compatible with desert tortoise conservation. This is a federally and state-protected species. Undeniably, Marines are clear thinkers and driven by LOVE OF COUNTRY... please demonstrate that love of country by designing an alternative training approach that does not put our endangered natural wildlife in peril. Given your role to defend us and what we stand for, YOU CAN BE EVEN BIGGER HEROES when you defend our voiceless wildlife. Please exercise your power to do that and we will all respectfully salute you. 1

Sincerely,

Karen Asbelle

Response to Comment

Thank you for your comments.

1. As discussed in Section 2.5.1 of the SEIS, the implementation of training on acquired lands is not reevaluated in this SEIS because it was already evaluated and decided upon in the 2012 EIS, the 2013 ROD, and the Congressional action taken in the FY2014 National Defense Authorization Act.

   The proposed action in the SEIS is intended to satisfy the requirements of the 2012 Biological Opinion and 2013 Record of Decision, which require translocation to mitigate significant effects on the desert tortoise from the 2012 EIS proposed action.

Comment ID: W-64 **Received: November 14, 2016**

Twentynine Palms SEIS Project Team
U.S. Marine Corps
3888 State Street, Ste. 201
Santa Barbara, CA 93105

Dear Twentynine Palms SEIS Project Team,

Relocating a thousand or more threatened desert tortoises into areas already fully occupied by their kind in order to increase Marine training areas is very short-sighted, when one considers the harm and/or death that is likely to follow for a high percentage of relocated individual tortoises. 1 One alternative would be to purchase some prime desert tortoise habitat in the western Mojave desert that is not already fully occupied by tortoises, and turn it over to US Fish and Wildlife to be managed as a refuge of sorts that could receive tortoises whose relocation cannot be avoided. 2

Sincerely,

Don Lipmanson

Response to Comment

Thank you for your comments.

1. Proposed recipient sites were carefully selected based on the site selection criteria outlined in SEIS Sections 2.1.1.1, 2.1.1.2, 2.2.1.1, and 2.3 to ensure that (1) they can support additional tortoises, as well as continue to support resident tortoises; (2) there are adequate soils for construction of new burrows and water catchments, and a native seed bank to provide forage; and (3) sites are located away from busy roadways.

   As described in detail in Section 4.1.1.3 of the SEIS, multiple studies specific to desert tortoise translocation have found no significant effect of translocation compared with resident or control populations on survivorship or mortality (Field et al. 2007; Esque et al. 2010; Nussear et al. 2012; Brand et al. 2016), stress (Drake et al. 2012), or reproductive output (Nussear et al. 2012). As discussed in Section 1.3.2 of the SEIS, the Marine Corps would re-initiate consultation with the USFWS if monitoring of translocated and recipient site desert tortoises indicates a statistically significant elevation in mortality rates above that observed in the control population.

2. Actions and measures for broader conservation of tortoises, as identified in the Recovery Plan, are beyond the scope of this SEIS. However, outside the scope of this action, the Combat Center does implement activities benefiting the recovery of the desert tortoise.

This page intentionally left blank.

APPENDIX F
BIOLOGICAL OPINION

This page intentionally left blank.

The updated Biological Opinion is anticipated to be completed December 2016 and will be provided in the Final SEIS.

This page intentionally left blank.