2018 Secretary of Defense Environmental Award
Natural Resources Conservation (Team)
Marine Corps Air Ground Combat Center

Introduction

The mission of the Marine Air Ground Task Force Training Command (MAGTFTC) is to manage the MAGTF training program and conduct service MAGTF combined-arms training to enhance the combat readiness of the operating forces and support the Marine Corps' responsibilities to national security. The Marine Corps Air Ground Combat Center (Combat Center) provides a standard of excellence in managing facilities, services, and support to the operating forces and families in order to ensure readiness of the tenant and resident commands aboard the Combat Center.

Contents

The Combat Center hosts 11,300 active duty military, 8,600 family members, and 2,500 civilian personnel. The MAGTFTC trains up to one-fourth (approximately 45,000 Marines) of the Fleet Marine Force each year in numerous training exercises. MAGTFTC also trains foreign forces, and over 5,000 Marines annually in the Marine Corps Communication and Electronics School.

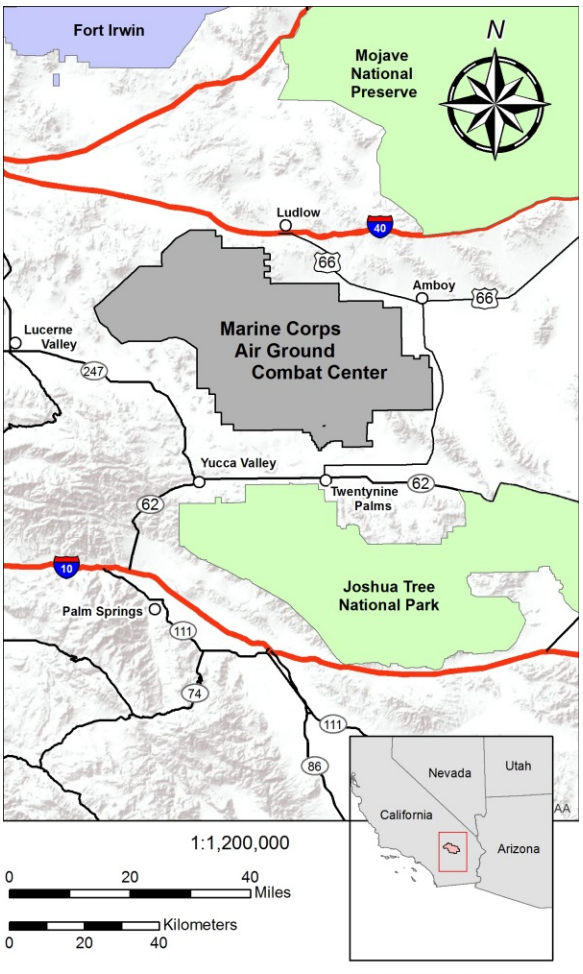

Figure 1: Installation Location. The installation is situated between Interstates 10 and 40, immediately north of Hwy 62 and Joshua Tree National Park.

The Combat Center comprises 761,400 acres in a complex desert mosaic of rugged mountains, bajadas, dry lakes, and ephemeral washes. This fragile ecosystem supports more than 320 vertebrate wildlife species, 1,500 invertebrates, and nearly 400 plant species. These include the federally-threatened Agassiz's desert tortoise (*Gopherus agassizii*) and at-risk species like desert bighorn sheep (*Ovis canadensis nelsoni*), Mojave fringe-toed lizard (*Uma scoparia*), crucifixion thorn (*Castela emoryi*), and Joshua tree (*Yucca brevifolia*).

Background

Passage of the National Defense Authorization Act of Fiscal Year 2014 (FY14 NDAA) culminated several years of complex, large-scale environmental planning. The FY14 NDAA authorized expansion of the Combat Center from 598,000 acres to 707,840 acres (1,106 square miles) to support sustained, combined-arms, live-fire and maneuver training for Marine

Figure 2: Health Assessment. Biologists swab for mycoplasma and herpes virus DNA, two of the emergent disease issues for wild tortoise populations, as part of pre-translocation planning.

Expeditionary Brigade-sized MAGTFs. This expansion also included a 56,400 acre (88 square mile) Shared-Use Area managed primarily by Bureau of Land Management (BLM) for public access, and jointly by the Combat Center for military training.

Prior to use of the expansion lands, the Combat Center was required to implement certain requirements primarily focused on avoiding, minimizing, and mitigating impacts to the desert tortoise. This included conducting clearance surveys and health assessments; developing a specific translocation plan identifying recipient sites, translocation methods, and post-translocation monitoring and studies; and implementing desert tortoise translocation from expansion areas modeled to experience high- and moderate-intensity training impacts.

Challenges

Planning Scope

The scope of effort for data collection and planning of this desert tortoise translocation was staggering. The Combat Center proposed to translocation approximately 1,100 adult tortoises. This was the largest such translocation proposed, was orders of magnitude greater than most projects (which move tens of animals), and substantially more than even than occasional large project (which move up to a couple hundred animals).

The Combat Center conducted initial clearance surveys through FY16 over approximately 220 km^2, requiring approximately 15,000 person-days of survey, to identify animals for translocation. Habitat indicators (e.g., slope, vegetation) were recorded for use in translocation planning. Every found animal received one or more full health assessments, which included both physical examination and blood draw, and was affixed with a radio transmitter. The Combat Center generally tracked the location of each animal on a weekly basis thereafter.

These data were combined with habitat and land-use analysis in a 40-km band around the installation to determine potential recipient sites (locations to which the Combat Center would move animals) and control sites (comparable locations that would remain unaffected by translocation). A variety of complex constraints and quality factors related to habitat and land use severely limited potential recipient sites.

The Combat Center provided its specific translocation plan to the U.S. Fish and Wildlife Service (USFWS) in December 2015, and followed with a final plan in March 2016 incorporating USFWS comments.

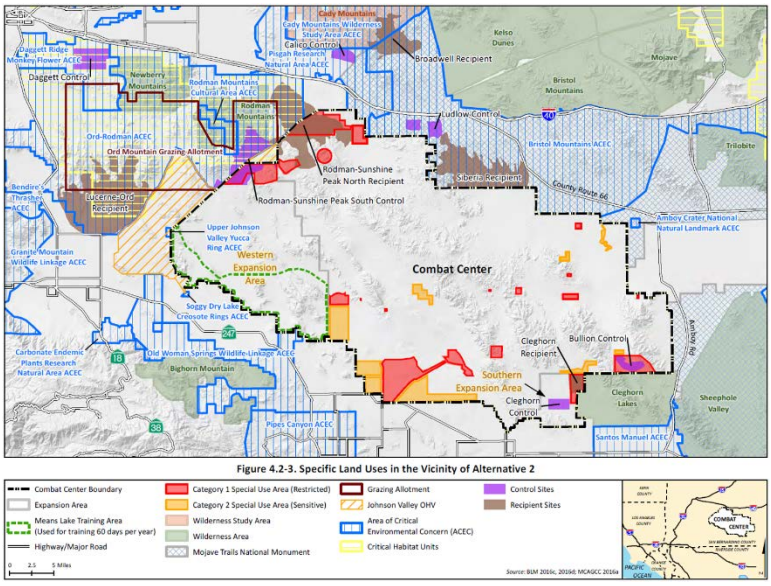

Figure 3: Complex Land Uses Surrounding the Combat Center. Brown polygons to the north and west of the installation represent off-base recipient sites for translocated desert tortoises. The remaining polygons depict the complex mosaic of designated land uses surrounding the installation.

Legal Challenge

In March 2016, the Center for Biological Diversity (CBD) provided notice of its intent to sue, alleging "[failure] to ensure against jeopardy through consultation regarding… translocation of desert tortoise." The Combat Center received this notice mere days prior to implementing its translocation plan, and after it had deployed contracted biologists to the field for that purpose.

The Combat Center and its partners found the CBD claims to be specious. However, coincident with this notice, BLM determined supplemental National Environmental Policy Act (NEPA) analysis was required before they could authorize use of BLM lands for translocation. Also, USFWS determined the 2012 Biological Opinion (BO) under which the Combat Center had been operating required further consultation and revision prior to translocation.

Time Constraints

Determinations by BLM and USFWS that additional environmental work was required made clear that training capabilities in the expansion area would not be realized on the original schedule of summer 2016. Temperature constraints on desert tortoise translocation limit movement to spring or fall. This confluence of factors left mere months to revise the translocation plan, promulgate a Supplemental Environmental Impact Statement (SEIS) analyzing translocation alternatives, and negotiate a revised BO with USFWS.

Species Status

New species information was brought to light by USFWS during consultation on the revised BO. Density surveys revealed substantial declines in desert tortoise populations throughout its range. Most populations, including the recovery unit in which the Combat Center is located, were determined to be below the minimum viable population threshold modeled by USFWS. This means desert tortoise populations would not persist in these areas absent human intervention.

During this period USFWS also shifted their approach to translocation planning, favoring population augmentation. Under this model, selection of recipient sites would target high quality

habitat areas in which local populations had declined below the minimum viable threshold. This required reworking the Combat Center's translocation plan to accommodate these new targets.

Complicating this consultation was the State wildlife agency improperly asserting jurisdiction over this Federal action (the desert tortoise is also a State-listed threatened species). As part of this assertion, the State identified translocation requirements that conflicted with USFWS requirements. The Combat Center coordinated with the State to resolve these conflicts without relinquishing Federal sovereignty, while staying mindful of the future consultation relationship with the State on Integrated Natural Resources Management Plan (INRMP) development.

Evolving BLM Requirements

BLM manages the off-base lands into which the Combat Center proposed to place translocated desert tortoises. Various BLM land-use designations overlay these and adjacent lands, including off-highway vehicle recreation areas, grazing allotments, areas of critical environmental concern, and wilderness areas. Constraints associated with wilderness areas were particularly thorny, forcing the Combat Center to alter its plans late in the development and analysis cycle. BLM also required the Combat Center to gain concurrence from a third party holding rights to the grazing allotment before BLM would approve use of the grazing allotment for translocation.

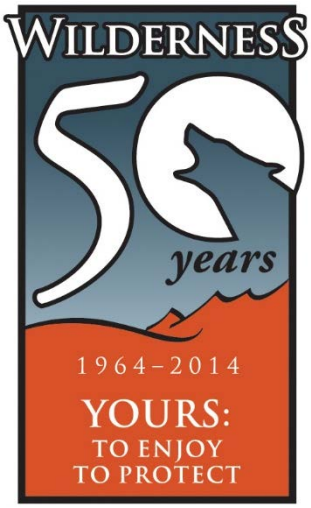

Figure 4: Celebrating the 50th Anniversary of the Wilderness Act.

In addition, sweeping land use changes were implemented late in the translocation planning cycle. The Mojave Trails National Monument was established in February 2016, weeks before beginning the revised translocation effort, and overlays two of the recipient sites. BLM's Desert Renewable Energy Conservation Plan was released in September 2016, after the Draft SEIS had been developed, and affected land use and conservation actions in two other recipient sites.

Tribal Consultation

The Colorado River Indian Tribes (CRIT), a Federally-recognized tribe, objected to the initial BLM proposal to approve Combat Center use of BLM lands. As the basis for this objection the tribe indicated the desert tortoises were "sacred" to the tribe, and thus should be considered a cultural resource subject to the National Historic Preservation Act (NHPA). This conflating of natural and cultural resources was a precedent the Marine Corps was disinterested in setting. The Combat Center rejected the NHPA assertion, but entered into Government-to-Government consultation with the tribe to successfully resolve their concerns.

Disposition Plan Approval

The Disposition Plan was a detailed planning document recording demographic data, health assessment history, and specific grid coordinates for release sites for each individual desert tortoise planned for translocation. Approval of this plan was a requirement levied by the BO, and was the last regulatory clearance required before physical movement of the animals.

With biologists in the field preparing for translocation, USFWS rejected the plan over concerns about the age of health assessments. Though the BO described the Combat Center health

assessment regime and found "this will prevent infected animals from being translocated and will reduce the risk of introducing new disease into the recipient sites," the health assessments for many of the animals were outside the parameters defined in USFWS translocation guidance. The Combat Center was able to secure unusually rapid analysis of bio-samples by labs at the University of Florida and the San Diego Zoo, critical to timely approval of the disposition plan.

Figure 5: Combat Center

Combat Center Team

The Combat Center established a cross-functional team to execute a number of complex environmental planning and consultation requirements, within aggressive time constraints noted above, to accomplish the MAGTFTC training capability requirements.

Environmental Affairs

Lieutenant Colonel Timothy Pochop was the Director, Environmental Affairs; he oversaw development of the SEIS, all consultation and coordination actions, and execution of translocation.

Mr. Walter Christensen is the Conservation Branch Head, Environmental Affairs; he contributed to development of the translocation plan, was the functional lead for the SEIS, led coordination with BLM and consultation with USFWS, and oversaw desert tortoise translocation.

Dr. Brian Henen is the Ecologist, Environmental Affairs; he provided deep subject matter expertise during development of the SEIS and consultation with USFWS, and was the Combat Center lead on planning and executing translocation.

Mr. Scott Kerr is the NEPA Manager, Environmental Affairs; he coordinated the various parties developing the SEIS, including Combat Center staff, Headquarters Marine Corps staff, and the contractor.

Governmental and External Affairs

Ms. Erin Adams was the Deputy Director, Governmental and External Affairs; she oversaw external outreach for the SEIS and translocation, including members of the public, interest groups, elected officials, and media.

Ms. Kristina Becker was the External Affairs Director, Governmental and External Affairs; she led external outreach efforts during the SEIS and translocation, including members of the public, interest groups, elected officials, and media.

Office of General Counsel

Mr. Pat Uetz was the Deputy Counsel, Office of General Counsel; he provided critical input to shaping the SEIS approach and to all consultation and coordination efforts.

Other Support

While this nomination focuses on the Combat Center team, the installation was well supported by HQMC (notably Nathan Stokes, Jacque Rice, Ron Lamb, Michael Doherty), Naval Facilities Engineering Command Southwest (Jesse Martinez, Aaron Hebshi), Cardno (Craig Bloxham, Stella Acuna, Chris Noddings), and Tetra Tech (James Brady, Alice Karl, Peter Woodman).

Outcomes

Figure 6: Biologist Loads Desert Tortoises for Transport. The Combat Center airlifted desert tortoises to designated recipient sites, reducing transit stress. Helicopter operations were featured prominently in positive media stories.

Mission Accomplishment

The Combat Center successfully completed initial translocation from the Western Expansion Area in spring 2017. This allowed for the large-scale exercise planned for summer 2017 (LSE-17) to occur on schedule. Follow-up translocation from the Southern Expansion Area in fall 2017 fully addressed all expansion areas, opening over 160,000 acres of new Marine Corps lands to sustained, combined-arms, live-fire and maneuver training.

Successful Translocation

Initial translocation results are very positive. The Combat Center has detected 13 mortalities (1%) amongst translocated animals, and has not noted any significant difference between mortality in translocated, resident, and control populations. This compares favorably to first-year results from other translocations, which saw mortality as high as 50%. In addition, there is little evidence of specific USFWS and public concerns about increased predation of translocated tortoises. These results are attributable to the Combat Center's carefully-considered approach to translocation, which included innovative measures such as air transport, maintenance of social groupings amongst animals, and selecting release sites for individual animals based on the microhabitat in which they were found.

Figure 7: Biologists Hydrate Desert Tortoises. The Combat Center used water baths and epicoelemic injection to ensure desert tortoises were hydrated prior to release. Measures such as these helped to ensure successful translocation.

Partnerships

Perhaps the most interesting outcome from this effort has been development of several notable partnerships. For example, the USFWS Desert Tortoise Recovery Office has asked Dr. Henen to co-author a manuscript addressing translocation of desert tortoises. This will extend knowledge within the scientific community, and support policy and technical decisions by USFWS.

The Combat Center has partnered with Preservation Ranch, which holds rights to the grazing allotment on BLM land, to analyze the effects of cattle grazing on desert tortoises. Cattle grazing is often assumed to be incompatible with desert tortoise conservation, however USFWS has identified this as an information gap in their desert tortoise recovery plan. Despite significantly different interests, Preservation Ranch, USFWS, and BLM all support this study.

As a result of Government-to-Government consultation the relationship between the Combat Center and the CRIT has blossomed. The Combat Center hosted tribal youth group trips, and has discussed sharing of ethnographic information to document tribal relationship with desert tortoises.

Figure 8: Biologist Tracks Desert Tortoise Locations. The Combat Center will use radiotelemetry to track 20% of translocated tortoises, and a like number of resident and control tortoises, for the next 10 years. Less intensive methods will continue during the remainder of the 30-year monitoring period.

Way Forward

Post Translocation Monitoring and Research

The Combat Center is required to conduct various levels of research and monitoring over the 30 years following translocation. This lengthy monitoring period is particularly valuable in understanding the long-term effects of translocation and population augmentation, an area that has received little scientific attention. The Combat Center is partnering with other researchers in the scientific community to ensure this wealth of data is translated into increased understanding of this species and management practices to support its recovery. These partnerships include research work with labs at the University of Florida and the San Diego Zoo, resulting from earlier USFWS-assisted negotiation with the labs for rapid analysis of health assessment samples, that will analyze epidemiological risk in desert tortoise populations.

Other Opportunities

The Combat Center has demonstrated the ability to work closely and cooperatively with USFWS on complex issues during trying circumstances. This has opened up other opportunities for the Combat Center. For example, the USFWS has requested the Combat Center partner on developing and implementing a proof-of-concept recovery crediting system for desert tortoise. Under this system, military installations could accrue credits through implementation of recovery actions on and off the installation. Those credits could then be spent to relieve operational restrictions associated with desert tortoise presence on the installation.

The USFWS has also expressed interest in partnering on raven management efforts—ravens are a significant predator of juvenile tortoises, and are heavily subsidized by human activity. This could include techniques such as aversion training or in-nest egg smothering, but would also include permitting depredation activities by the Combat Center.