Their Future is in Our Hands

Photo courtesy of Tortoise Group, Las Vegas, NV

Tortoise Times

Newsletter of
the Desert Tortoise Outreach Project
of the Desert Managers Group

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Meet the Desert Managers Group

The California deserts are huge. They occupy one-quarter of the state and contain two national parks, a national preserve, six military bases, ten state parks, more than one-hundred communities and over eleven-million acres of public land administered by the Bureau of Land Management. Desert land and resource managers can be a confusing alphabet soup of government acronyms; BLM, BIA, NPS, FWS, CDFG, Caltrans... The Desert Managers Group (DMG) is a partnership of these managers, designed to foster collaboration and communication among these agencies.

DMG partners include Bureau of Land Management, National Park Service, Bureau of Indian Affairs, U.S. Fish and Wildlife Service, U.S. Geological Survey, U.S. Forest Service, all four military branches, California Department of Transportation, California State Parks, California Department of Fish and Game, and San Bernardino, Kern, and Imperial Counties. DMG managers cooperate to conserve and enhance the California deserts for current and future uses, and believe that effective long-term stewardship and sustained use of desert resources can best be provided by working cooperatively and collaboratively with neighbors.

What started as an ad hoc process between the Bureau of Land Management and National Park Service to facilitate the implementation of the 1994 California Desert Protection Act, evolved into the 1999 official chartering of the Desert Managers Group. Since then, other federal and state agencies joined the group and most recently, county governments have become associated. Their participation brings a unique local perspective to desert-wide issues. The DMG organizations often join forces to address large, regional projects. For example, illegal desert dumping is a problem. The Bureau of Land Management, National Park Service and the California Integrated Waste Management Board have cleaned up over twenty-five large illegal dumps and scores of smaller dumps on public lands since 2000. The DMG is working with local governments, Keep California Beautiful, and the California EPA to prevent further illegal dumping. This spring, the DMG will host an Illegal Dumping Prevention Workshop in Ridgecrest.

The DMG helps agencies distribute visitor information. DMG agencies provided exhibits for a desert gateway visitor center in Lancaster. The visitor center is managed by State Parks, but has information about all DMG partners. The DMG's webpage is one-stop shopping for visitor information in the California deserts; www.californiadesert.gov. DMG is working with Caltrans to install desert displays in rest areas throughout California deserts.

Desert tortoise recovery and education is an important DMG project. The more information people have about the desert tortoise, the more likely they are to appreciate and help protect California's state reptile. A regional DMG education program involves several government agencies and non-profit groups, with grant funding from multiple sources and additional help from several non-profit groups. The DMG coordinates the program, but each agency and, most importantly, the tortoise will benefit.

For more information about the Desert Managers Group, visit www.dmg.gov.

Russell Scofield, *DMG Coordinator*

DMG Partners

US Department of Defense
Naval Air Weapons Station, China Lake
Edwards Air Force Base
National Training Center, Fort Irwin
Marine Corps Air Ground Combat Center (Twentynine Palms)
Marine Corps Logistics Base (Barstow)
Marine Corps Air Station (Yuma)

US Department of the Interior
Bureau of Indian Affairs (Pacific Region Office)
Bureau of Land Management
- Barstow Field Office
- Desert District Office, Riverside
- El Centro Field Office
- Needles Field Office
- Palm Springs Field Office
- Ridgecrest Field Office

Fish and Wildlife Service
- Carlsbad Office
- Ventura Office

National Park Service
- Death Valley National Park
- Joshua Tree National Park
- Lake Mead National Recreation Area
- Mojave National Preserve

Geological Survey
- National Mapping Division (Menlo Park)
- Water Division (San Diego)
- Western Ecological Research Center (Sacramento)

State of California
Department of Fish and Game
Department of Transportation
State Parks, Colorado Desert Sector
State Parks, Mojave Desert Sector

California State Counties
Kern County
Imperial County
San Bernardino County

US Department of Agriculture
US Forest Service

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Headstarting Program

A military base may seem an unlikely place to find hope for renewal of the declining desert tortoise species. After all, the military has its own very specific work to do. If recovery of endangered species hasn't traditionally been part of the job description, it is now part of the duty routine at the Army's Fort Irwin National Training Center, Edwards Airforce Base, and soon at the Marine Corps Air-Ground Combat Center.

Called the Headstarting Program, this multi-branch initiative is putting money, technology and science to work on protected base lands in the southern California region to thoroughly study desert tortoise breeding habits and infant tortoise range, forage and shelter behaviors. It also provides shelters for egg incubation, hatching and infant growth. The overall goal is to increase infant tortoise survivorship in the field, with as little interference as possible.

Permitted under Section 10 of the Endangered Species Act (ESA), the program was originally established for research purposes in 1992 at Fort Irwin by Dave Morafka of the University of Dominguez Hills, just two years after the desert tortoise was officially listed as a threatened species. Edwards Airforce Base joined the project in 2003 with installation of its own study site.

Although the two programs operate independently, they continuously share information and pursue study objectives coordinated to avoid duplication of efforts. Both programs operate under the strictest controlled-experiment protocols, and every regulation written in the ESA for working with listed species is diligently observed.

At Edwards, the program is administered by the Environmental Management Office, led by biologist Mark Hagan, Natural Resources Manager. Working with contract biologist Mark Bratton and UCLA researcher Ken Nagy, Hagan and his team have installed facilities on a 16 square-mile safe zone on base property, which was verified as active desert tortoise habitat.

Sheltered nursery

Egg-carrying females are collected and relocated to sheltered enclosures, where they can lay without interference, and the incubating eggs will be protected against predators. When the eggs hatch, the babies are protected until released. In this way, it is hoped more eggs will develop and hatch, and that an optimum release age can be determined for newborn tortoises so they stand a better chance of survival in the field.

Though a simple plan, implementation is more complex. For instance, females must be collected from the immediate environs to avoid problems that may result from habitat unfamiliarity. After laying, they are taken back to the location where they were

found, and a small transmitter on them allows researchers to find them next year.

Enclosures have to be big enough to prevent the females from feeling confined but small enough so the little hatchlings aren't easily misplaced. Predator access from the ground and air has to be prevented but the floors must be maintained in natural condition so females can pursue their own burrowing activities.

Leaving home

One of the program's most difficult challenges is to determine age of release for the babies. At Irwin, the original population of hatchlings was retained for six to eight years before release so the baby tortoises' shells had time to harden, a process taking about five years.

When released, researchers discovered the babies had imprinted on the enclosure location and didn't stray far from it. Realizing this could, in time, lead to a crowding problem, Edwards researchers are releasing at earlier ages. However, the soft-shelled babies are then at greater risk from predation.

One enclosure at the Edwards site has been receiving a minimum supply of additional water in an effort to increase the plant growth there. Hagan and his team want to explore whether improved feeding conditions will have any affect on the rate of shell calcification. If it does increase the rate, they may have another control factor to use in their plan.

"We're trying to develop techniques that effectively support desert tortoise survival but do it with a minimum amount of interference," said Hagan about his program's primary operational directive.

Delayed gratification

A significant challenge, he went on to explain, is that program conditions, assumptions and practices cannot be fully evaluated until the experimental population reaches sexual maturity. "Whether we're using successful techniques or not, or whether any of this will make a difference or not," he clarified, "depends on whether the breeding population is increased." With that, he announced that desert tortoises don't reach sexual maturity for about 15-20 years in the wild.

The theory of sheltered-breeding and release has been successfully applied in many other endangered and threatened species. In an article written by Bratton on the Edwards program, he named the black-footed ferret, red wolf and California condor as three examples of species brought back from the brink of extinction by sheltered-breeding and release programs.

In its first two years of existence, the Headstarting Program at Edwards provided shelter for 114 eggs laid. Of that number, 69 hatched, but only a handful of the hatchlings have survived to date. Hagan and company are confident they can improve the survival rate, but are constrained to do so in a manner that will assure population survival in the wild and, at the same time, not interfere with the natural balance of wild populations. It is a head start they want to give the tortoises, not a free ride.

Mark Wheeler

U.S. Fish & Wildlife Service Report

Desert tortoise listing and recovery activities began in 1977 when the U.S. Fish and Wildlife Service (Service) was petitioned to list the Beaver Dam Slope population (Utah) as ***Endangered***. The entire Mojave population was listed as Endangered under an emergency rule in 1989, and as ***Threatened*** under a final rule in 1990. Critical habitat for the Mojave population was designated and a recovery plan was published in 1994.

In 2002, the General Accounting Office (GAO) completed a Congressionally-requested audit of the desert tortoise recovery program that reported deficiencies in effectiveness of recovery actions and adequacy of status-and-trends monitoring. The GAO recommended "a coordinated research strategy that would link land management decisions with research results." The October 2004 Desert Tortoise Recovery Plan Assessment established the Desert Tortoise Recovery Office (DTRO) to facilitate such coordination. In December 2004, the Nevada Fish and Wildlife Office established a DTRO that focuses exclusively on recovery plan revision and implementation, research, monitoring, and associated recovery permitting, rather than on regulation, and provides a centralized point of contact through which these activities are coordinated.

The DTRO is staffed by the Desert Tortoise Recovery Coordinator, Roy Averill-Murray, and three regional coordinators, Kim Field, Amy Salveter, and Sandy Marquez. Averill-Murray and Field are based in the Nevada Fish and Wildlife Office in Reno, Salveter is located in the Ventura Field Office, and Marquez is at the Carlsbad, California, Field Office.

A Science Advisory Committee made up of seven scientists

from within and outside the Mojave Desert tortoise arena, advises the DTRO to ensure that recovery action plans, recovery plan revision, and recovery-action monitoring meet rigorous scientific standards. The DTRO works with the Desert Tortoise Management Oversight Group (MOG), other local, state, and regional working groups to coordinate range-wide issues.

In 2005, the DMG established the Desert Tortoise Recovery Planning and Implementation Work Group (RPIWG) to develop and implement recovery actions that incorporate land manager, stakeholder, and SAC input and coordination. Representatives from Defenders of Wildlife, the Center for Biological Diversity, Quadstates County Government Coalition, and off-highway-vehicle interests also participate in RPIWG. In 2006, the Service secured the assistance of the U.S. Institute for Environmental Conflict Resolution to assess the feasibility of convening broadly representative, multi-stakeholder working groups to develop recovery actions fore a revised Recovery Plan. Assuming the assessment concludes that there is sufficient support to proceed with a collaborative planning process, the RPIWG will be actively engaged in helping to develop regional recovery action plan in California.

Significant recovery implementation in 2005 included the Range-wide Monitoring Program, which completed surveys and made significant progress in processing and quality control of the prior four years of data. In 2006, monitoring efforts will focus on a 5-year review of the program, rather than additional field surveys. The DTRO also participates on the Ft. Irwin Conservation/Mitigation Working Group to coordinate desert tortoise translocation prior to expansion of the National Training Center; works with partners in evaluating new objectives for the Desert Tortoise Conservation Center (DTCC); coordinates on the Coyote Springs Investment development in Clark and Lincoln counties, Nevada, to identify appropriate avoidance, minimization, and mitigation measures, including potential research; and participates on the Clark County Technical Advisory Group to provide technical review of conservation management strategies for four Desert Wildlife Management Areas.

Detailed information on DTRO activities and desert tortoise recovery can be found at (http://www.fws.gov/nevada/desert_tortoise/dtro.html.

Sandy Marquez
U.S. Fish & Wildlife Service

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Desert Tortoise Outreach Project

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