U.S. Department of Defense and U.S. Fish & Wildlife Service

Protecting Endangered Species on Military Lands:
Successful Species Recovery

Although the U.S. Fish and Wildlife Service (FWS) and National Oceanic and Atmospheric Administration (NOAA) Fisheries have the lead for guiding implementation of the Endangered Species Act (ESA), the ESA states that *all* Federal agencies are responsible for conserving endangered and threatened species as part of their normal activities. Department of Defense (DoD) agencies play a vital role in the conservation of many rare plant and animal species. DoD manages nearly 25 million acres on about 425 major military installations throughout the United States. Access limitations due to security and safety concerns have sheltered many military lands from development pressures and large-scale habitat loss. As a result, some of the finest remaining examples of rare wildlife habitats are found within these lands. Over 300 species listed as federally threatened or endangered occur on DoD-managed lands. Through open communication and cooperation, FWS has collaborated to establish successful partnerships with DoD and its associated military services. These partnerships have enabled the military to carry out its mission on its bases, while ensuring the continued use of sound science in the conservation and protection of threatened and endangered species. This is the second fact sheet in the Successful Species Recovery series.

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The Hawaiian Stilt

The annual "mud ops" training exercise at Marine Corps Base (MCB) Hawaii controls invasive species, provides habitat for migratory and endemic bird species, and is directly responsible for recovery of the endangered Hawaiian Stilt, in addition to meeting Marine Corps readiness requirements.

Every January since 1982, the Marines have conducted a two-day exercise that employs about sixteen, 26-ton, tracked armored assault vehicles (AAV) from Kaneohe Bay's Combat Service Support Company, 3rd Marine Regiment.

Nu'upia Ponds are one of the last places Marines can get realistic AAV training. Most wetlands cannot be disturbed, or the training must be very controlled to ensure no damage to the environment. But at the 482 acre Nu'upia Ponds Wildlife Management Area, the extreme cultivation of the wetland area from the sheer weight of the AAV's is welcomed to break open thick mats of invasive pickleweed, and uncover bugs, brine flies, larvae, and crustaceans, food sources for the endangered Hawaiian Stilt. The plowing action of the AAV's creates a checkerboard patterned "moat and island" terrain, which assures the hatchlings have a source of nearby food, and discourages predators (mongoose, rats, feral cats) from getting to the eggs and hatchlings.

The mud-ops are scheduled just before the breeding period in March and April. Eggs are laid in May to June and about 26 days later, they hatch in protected, prime wetland habitat. Since the mud-ops started two decades ago the stilt population has increased from about 60 to 160. Thanks to the Marines, biologists, and resource managers involved, this symbiotic relationship will continue to benefit the ecosystem and military readiness.

Sea Turtles

Nestled amidst the sensitive habitat of sea turtles, the critical work of the nation's space program comes together at the 45th Space Wing (45SW). Headquartered at Patrick Air Force Base (PAFB), Florida, 20 miles south of Cape Canaveral Air Force Station (CCAFS), the wing has been the backbone of the nation's space program for more than 50 years. Recognized as the world's busiest launch base, the wing assures access to space, while personnel protect more than 46 species of federally and state-protected animals and plants on nearly 23,000 acres of sandy beaches, coastal sand dunes, fresh and salt-water wetlands, woodlands, and fragile sensitive coastal dune ecosystems.

Protecting endangered sea turtles is a monumental task for wing personnel. PAFB and CCAFS beaches, part of the second largest Loggerhead nesting region in the world, provide habitat for more than 5,000 federally threatened and endangered sea turtle nests annually yielding more than 500,000 hatchlings. Through diligent monitoring and protection mechanisms, the 45SW enjoys an extremely high Loggerhead hatching success ratio of 70%, exceeding the FWS Recovery Plan goal of 50%. Additionally, two extremely rare Leatherback turtle nests were deposited at PAFB in 2001 with an 87% hatch success.

Artificial lighting was a tremendous problem facing threatened and endangered sea turtle hatchlings and 45SW conservationists. Sea turtle hatchlings use light that reflects off the waves to guide them toward the ocean. Lights from beachfront or inland sources can disorient hatchlings away from the surf, where they are subject to loss by predation, desiccation, or starvation. 45SW biologists researched the disorientation phenomenon and developed a Light Management Plan. After implementation of the plan and modifications of thousands of lights, disorientation dropped below the 2% mark. The 45SW is referred to as "the model to follow" by FWS and the Florida Fish and Wildlife Conservation Commission in protecting threatened and endangered species.

Black-capped Vireo

Set against the backdrop of the Wichita Mountains and foothills of southern Oklahoma, the Army's Fort Sill military reservation is working with FWS and the Oklahoma Department of Wildlife Conservation to conserve the federally endangered Black-capped Vireo (*Vireo atricapilla*) while maintaining the mission of one of the few Army live artillery ranges in the nation. Amidst the live fire of cannons and troops moving across the foothills of the range, a dedicated team of Army natural resources staff and biologists from the Service and the state have been very successful in recovering the vireo in its northern-most breeding range in the United States. Due to their efforts, Fort Sill's range readiness and training activities have continued with virtually no conflicts.

As part of the collaborative effort, partners conduct annual monitoring on both Fort Sill and the nearby Wichita Mountain National Wildlife Refuge. The work is paying off as the growing population of Black-capped Vireos on the refuge and Fort Sill now exceeds the recovery goal of 500 - 1000 pairs for the northern recovery unit. Recovery efforts on Fort Sill also include controlled burns and cowbird trapping. The cowbird is a parasite whose reproductive strategy involves depositing its eggs in the nests of other birds, who then hatch the alien eggs and feed the cowbird hatchlings.

Black-capped vireo

The Black-capped Vireo populations have responded to these efforts by increasing from approximately 17 adult birds in the late 1980's, to an estimated 370 plus adults in 2002. Successful endangered species conservation work has allowed Fort Sill the opportunity to focus in a similar collaborative approach in evaluating encroachment due to urbanization on its south side. Fort Sill is about to kick-off a buffer-lands initiative that would complement the ongoing recovery partnership by preserving additional Black-capped Vireo habitat.

San Clemente Loggerhead Shrike

The Navy administers training missions and military testing on San Clemente Island, a 21-mile long island found about 70 miles northwest of San Diego. The island is also home to one of the rarest birds in North America, the San Clemente Loggerhead Shrike (*Lanius ludovicianus mearns*i). A subspecies of the more widespread Loggerhead Shrike, the FWS listed the San Clemente Loggerhead Shrike as federally endangered in 1977.

The shrike was on the verge of extinction in the late 1990's with only 13 birds detected on the island. The primary cause of this decline was habitat degradation by feral grazing animals such as goats, sheep, and pigs. Though these animals were removed from the island, predation on shrike eggs, nestlings, and juveniles by a variety of nonnative species, especially feral rats and cats, continues to threaten this species.

The Navy responded to the decline by developing a highly successful shrike program directed at predator control, survey and monitoring, and captive population breeding in cooperation with the FWS, Point Reyes Bird Observatory, Zoological Society of San Diego, Institute for Wildlife Studies, and California Department of Fish and Game.

As a result of this cooperative effort, the shrike population has grown to over 190 birds in the wild and in a captive breeding population. Much of the increase is due to the captive breeding program conducted by the San Diego Zoo, in addition to improved breeding and fledging success in the wild and supplemental feeding of released birds over the winter. Predator control of introduced rats and cats is ongoing and the island's plant nursery is propagating more than 1,000 native plants for shrike habitat enhancement. The Navy has also installed artificial perches and is beginning a habitat evaluation system based on characteristics of occupied territories.

The carrying capacity of the island is estimated at 550 to 700 birds, but to reach even half that number in 20 years will require continued population monitoring, captive propagation and release, predator management, and habitat conservation.

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