

Naval Base Coronado

2018 Secretary of the Navy Environmental Award: Natural Resource Conservation – Large Installation

INTRODUCTION

Naval Base Coronado (NBC) is the Navy's West Coast Quarterdeck set in San Diego, California. NBC is home to an estimated 25,000 active duty military and 6,000 civilian employees. NBC's primary mission is to support the Fleet, Fighter, and Family by providing the highest quality base operating support and quality of life services to U.S. Navy operating forces and other assigned and visiting activities. We seek to provide the right support, at the right time, in the right amount, enabling operating forces to produce the right level of combat readiness.

NBC Conservation Team supports the Installation Commanding Officer's integrated Environmental Division by managing some of most diverse ecosystems in the continental United States. The eight NBC installations represent over 60,000 acres of land in addition to water distributed over an area of 3,380 square miles in San Diego and Los Angeles Counties. The team is responsible for the management of wildlife and plant communities which include 29 marine and terrestrial species currently federally listed as threatened or endangered, while ensuring no net loss of operational requirements.



eight Navy installations: Naval Air Station North Island (NASNI), Naval Amphibious Base (NAB), Naval Outlying Landing Field, Imperial Beach (NOLF, IB), Silver Strand Training Complex-South (SSTC-South), Naval Auxiliary Landing Field San Clemente Island (SCI), Camp Michael Monsoor, Camp Morena, and Remote Training Site, Warner Springs (RTSWS). Within this footprint, nearly 37,000 training operations occurred within the 2017-2018 time frame, in part enabled by the conservation team.

Two separate *Integrated Natural Resources Management Plans (INRMPs)* are in place to manage NBC's complex natural resources. The Naval Base Coronado and San Clemente Island INRMPs were revised and finalized in May 2014. Implementation of each INRMP is tracked through annual reviews (metrics meetings) and through the NBC Environmental Management System. The most recent annual review was completed on October 31, 2018.

BACKGROUND

Unequaled in operational scope and complexity, NBC provides a shore-based platform for helicopters, aircraft carriers, SEAL Teams and other ashore and afloat commands for access to a comprehensive quantity of ground, sea, air, and undersea operational and training space. The installation accommodates the requirements of 16 the helicopter and fixed wing squadrons, two aircraft carriers, four SEAL Teams, Navy Expeditionary Combat Command squadrons, and other air, surface, and subsurface commands. NBC is a consortium of



The NBC Conservation team consists of the following members: DiAnna Abdo, Joyce Sisson, Melissa Booker, and Bryan Munson (not pictured: Arlene Arnold and Tiffany Shepherd)

The following installations are managed under the mainland Naval Base Coronado INRMP:

NASNI is headquarters to four major military flag officer staffs including Commander Naval Air Forces, and supports 230 permanent and deployable aircraft. NASNI has three nuclear-powered aircraft carrier berths, with two carriers currently home ported, the USS Theodore Roosevelt (CVN 71), and the USS Carl Vinson (CVN 70).

NAB is the home to over 30 tenant commands with a population of approximately 5,000 personnel, including major commands such as Commander, Naval Surface Force Pacific, Commander Naval Special Warfare Command and the Commander Expeditionary Warfare Training Group Pacific. NAB is also the home of the Navy's west coast Sea-Air-Land Teams (SEALs).

NOLFIB is located 14 miles south of San Diego within the city limits of Imperial Beach and encompasses 1,204 acres with 270 of those acres leased out for agricultural purposes and 284 acres leased to the State of California for a wild life refuge. The mission of NOLFIB is to enable the majority of the helicopter training from NASNI and it is also the home of Commander, Maritime Expeditionary Security Group One.

SSTC-S is a premier training facility for the military's Special Forces. Located on the Imperial Beach/Coronado border, this 566-acre facility provides an excellent training environment with waterborne approaches from both the Pacific Ocean and San Diego Bay sides. The installation is undergoing a renaissance and being developed into a modern training space for Naval Special Warfare through a \$1B MILCON Program, while ensuring all conservation measures are being met.

RTSWS is in a remote area of northeastern San Diego County near the community of Warner Springs and is the home for the Navy/Marine Corps west-coast Survival, Evasion, Resistance, and Escape [SERE] field school. Under new land use agreements, RTSWS doubled its size and now provides 12,544 acres to support SERE and other essential Navy and Marine Corps training.

CMM is located 50 miles east of San Diego, near the city of Campo. This site is exceptionally important because of its physical characteristics similar to

foreign countries like Afghanistan. The unencumbered area around CMM makes it an ideal location for special reconnaissance training, map and compass training, and other special warfare training. CMM, like SCI, is one of the few places that allow Special Forces to train in a real life environment with limited encroachment problems. CMM completed a land withdrawal from the Bureau of Land Management in 2013 and now totals approximately 5,554 acres.

Camp Morena is located in southeast San Diego County five miles northwest of CMM. The facility supports training requirements and administration buildings for Naval Special Warfare.

The SCI INRMP was developed to manage the vast resources on the island.

SCI, the Navy's only remaining live-fire ship-to-shore and air-to-ground range with all combined arms resources (air, naval surface support, mortars, artillery, and electronic warfare), is the southernmost US Channel Island, covering 57 square miles. SCI is the cornerstone of the tactical training ranges supporting the Southern California Operations Area, which supports the largest concentration of naval forces in the world. The SCI land, air, and sea ranges provide the U.S. Navy, U.S. Marine Corps, and other military services space and facilities which they use to conduct readiness training and test and evaluation activities that can be done nowhere else in the world.



Naval Base Coronado area of impact.

PLANNING & EXECUTION

A strong Conservation Program begins with an integrated planning approach. The NBC Environmental Division and Navy Region Southwest Planning are embedded within both the facilities and

operational planning processes to ensure all endeavors are reviewed and approved by environmental prior to acceptance. Relationships with tenants are strong, so many project proponents set up meetings with environmental during development phases to ensure environmental requirements are considered in design.

The NBC Planner has reviewed over 400 projects during the span of FY17 and FY18. During this review period, 150 Categorical Exclusions (CATEX) were developed along with 4 Environmental Assessments, and 29 Memorandums for the Record.

A success of the environmental planning team has been the development of the Environmental Implementation Manager, who works directly with construction managers to aid the contractors and facilities team ensuring all requirements within the environmental planning documents are met. This new role has been successful in translating and navigating the complex requirements through completion.

COMMUNICATION AND OUTREACH

The greatest asset of any environmental professional is being able to communicate the requirements of the program clearly and receive buy-in from the operators. With a base population of an estimated 35,000 personnel and additional military and civilian personnel that visit the base to complete critical training needs, the challenge of communication of requirements is front and center. Logistics will not allow for a one on one interaction for all users, but the team has worked to develop relationships with tenants, range users, and department heads to ensure the widest distribution of information.

A human dimension study completed by the Conservation Team in 2015 provided insight into efficacy of training on SCI, which has since transferred to all other bases. From the study, we learned that while posters, videos, and written instructions built into operation instructions resulted in some education, the strongest indicator for training success was in-person interaction. Since this study, the entire Environmental Division has utilized the results and found new and innovative ways to provide effective training to the largest groups possible. Quarterly environmental trainings, which include natural resources, are held for all tenant building managers to attend and then share

information with their commands; leadership is briefed on the conservation program during monthly lunches and breakfasts; any training that happens on ranges must receive an environmental brief prior to execution; and Conservation Program Managers make themselves available for any Command that wishes to have individual trainings, as needed.

The team expands communication by providing outreach in a variety of ways on the base. Biweekly, biologists provide a bird walk for installation personnel and visitors staying at the Navy Lodge, allowing guests to see the impacts of the Conservation Program front and center. On SCI,



Wayne, the ambassador Island Fox, is a great tool to help the operators understand the vital role the Navy plays in conservation of species. In preparation for nesting season, the

Environmental Division hosts a base-wide beach cleanup, which has resulted in over 6 tons of debris collected in the past two years. The team has also created educational signage and written articles for Navy and professional publications to share the program's successes.

With the return of bald eagles, SCI's Natural Resources Team and Institute for Wildlife Studies installed a live streaming video camera on the bald eagle nest. This allows the whole world a view of our eagles and highlights Navy stewardship. Bald eagle camera fans recorded this action and posted it as great opportunity to showcase the Navy's work with our nations symbol.

Bald Eagle nestlings were shared with the world via webcam that spotlights the Navy's conservation program.



In support of the California Least Tern and Western Snowy Plover conservation program at NBC, San Diego Zoo volunteers, working on behalf of the Navy, are trained to conduct public outreach so that dog owners from the adjacent public area do not encroach north of the installation blue line and onto Navy lands at SSTC-S, where plovers nest on the dunes and forage with their chicks along the shore.

Studies have shown that dogs can act as a deterrent to breeding plovers, and therefore affect nesting site viability. Volunteers are also trained to document outreach efforts, public perception and knowledge of the birds, and the types of disturbance and predators observed. In addition to outreach, the San Diego Zoo's Teen Conservation Corps assist with beach cleanup and invasive plant removal, thus aiding the mission.



San Diego Zoo Conservation Corps complete a beach cleanup volunteer event within Western Snowy Plover habitat.

NBC also has a thriving community outreach program that actively involves the Conservation Team through youth education programs, monthly leadership and public meetings, as well as Eagle Scout and high school beautification projects. All of this hands-on effort provides the best opportunity of the communities in and around the installation to understand the Navy's environmental impact all while enabling the mission.

PROGRAM HIGHLIGHTS

Species Management

Natural resource conservation is complicated and often difficult, add to these challenges working on an island with multiple critical ranges and you have either a daunting task or an exciting challenge. Luckily, for NBC biologists, this is an exciting challenge. Conservation is particularly critical on islands where isolation has permitted the evolution of unique flora and fauna with large numbers of endemic species and small size of these unique populations increases their vulnerability, resulting in many taxa listed under the Endangered Species Act or vulnerable to listing. In the case of SCI, add to this the effects of historic grazing removing habitat and topsoil as well as bombing across the whole island, leaving a landscape with potential

Unexploded Ordnance (UXO) hazards. Unlike any other DON program, the SCI NR program manages 39 taxa endemic solely to this island and 20 state or federally listed species within its INRMP footprint. Beyond, typical natural resources tasks, add the logistical requirements of managing a fully-staffed remote, island field station while executing approximately \$5 million in annual funding in support of the mission. Adding to the challenge are UXO hazards that require specific training and support for ground disturbance or entry into certain areas. Despite these additional "working parts" and the resulting tail of tasks, NBC's Conservation Program achieves high success.

Specific program successes include avoiding listings for several endemic plants and nesting seabirds; avoiding Critical Habitat (CH) designation for black abalone; sensitive and listed species recovery; state of the art conservation approaches; habitat recovery and management; and biosecurity. SCI's program has resulted in the 2014 delisting of the Island Night Lizard for SCI and biological recovery of the San Clemente Bell's sparrow and 4 of the ESA listed plants, while expanding mission capabilities. Invasive plants heavily established on California Channel Islands managed by the National Park Service or The Nature Conservancy have been well controlled at SCI. Ecosystem collapses and disease introduction that resulted in ESA listing of the island fox on non-Navy California Channel Islands were avoided on SCI through Navy management. Perhaps the biggest testimony to SCI's success is the continued expansion of the military mission at SCI; NBC's Program Managers have successfully negotiated four Biological Opinions (BO) or Amendments to existing BOs in FY18.

The SCI Program continues to record an increasing diversity of migrant and resident birds utilizing SCI (species count now at over 350) and is considered one of the nation's Important Bird Areas, by Audubon Society. This increased avian diversity at SCI, is evidence of effective Navy Natural Resources stewardship in conjunction with continued mission support. SCI is one of the few places on the planet where you can see the re-establishment and expansion of native habitats and species concurrent with direct military training.

The NBC California Least Tern (CLT) and Western Snowy Plover (WSP) Management Program continued its successful implementation during the

2017 and 2018 nesting seasons. During this time, NBC supported highest regional numbers of WSP nests and produced 76 and 101 wild plover fledglings in 2017 and 2018, respectively, as well as record high CLT fledglings in 2017. The Navy's successful management has allowed local management targets for the WSP to be met or exceeded, which opens the door for the potential of expanded access to training areas during current and future consultation.

Vegetation Mapping

The San Clemente Island botany program recently completed a vegetation map for the entire island. The program had maps developed in the past, but they were not very comprehensive, nor did they have much verification or data collection. This was a compressive effort with multiple types of spectral imagery used and compared to create the most detailed map ever for the island. In addition to the various spectral imagery, significant on the ground data collection was done in conjunction with the imagery to accurately develop the map. This effort will be incredibly helpful to document the dramatic recovery of the island since the goats were removed in the early 1990s. This map will also identify the amount of habitat that is available to the listed plants and animals of SCI. This will be necessary as the Navy pursues delisting for 4 plant species. Showing that there is more than enough diverse habitat for these species to thrive in the future is crucial to having them removed from the ESA.

Improving the SCI INRMP through Open Standards for Conservation:

A tremendous effort is put into the development and execution of INRMPs across DOD. However, current guidance and approaches do not necessarily provide Natural Resource Managers with the best opportunities for success, as efforts do not necessarily correlate with success. Most, if not all, INRMPs suffer from a lack of desired results, SMART (Specific, Measurable, Achievable, Relevant and/or Realistic, and Time-Bound) objectives, and measures of effectiveness. Open Standards for Conservation results in the development of clear, mutually agreed-upon objectives, actions, and measuring devices that can be used to design effective approaches targeting specific outcomes while bringing together all stakeholders for effective decision making. By

applying Open Standards to an INRMP, the new document:

- States our desired results in terms of conservation and mission support outcomes, not actions;
- Details how our actions will lead to our desired results (through results chains);
- Provides measures of effectiveness, methods to track our progress toward achieving desired results; and
- Provides for adaptive management based on our measures of effectiveness.

The SCI INRMP is 80% complete with this process and has begun utilizing the strategy in management. We have a resulting vision, natural resource and mission targets, rated threats (to the targets) and strategies to address the threats, define SMART objectives, measure effectiveness. The results of the process will be written up as an INRMP update in early 2019 and reviewed annually with stakeholders to ensure effectiveness.

Support for Operation Steel Knight and RIMPAC

Marine Corps operations on SCI are inextricably linked and mission critical for Blue-Green expeditionary readiness. Operation Steel Knight (Dec 2017) proposed a proof of concept Amphibious Breaching Event at Horse Beach Cove, SCI, which required a fast tracked formal consultation under the ESA for adverse effects to the WSP because proposed use of the Mk154 Mine Clearing Line Charge (MICLC), was not covered under the prior BO on SCI. From the initial planning meeting to receiving the final BO Amendment, ESA compliance was achieved in a record 36 days, including revisions to the Navy's project description 22 days into the process.

Three months later, the Marines wanted to further their proof of concept to larger areas of land on SCI that had additional impacted resources not analyzed by NEPA. The team worked to provide reconnaissance, aided operators in modification of the project for success, consulted over a larger site in under 60 days, and completed NEPA to allow for Rim of the Pacific (2018) and future evolutions.

This short-turn around successes could not have been achieved without dedication, an outstanding relationship between the Navy and US Fish and Wildlife Service, and a unified NBC and Commander Pacific Fleet Program.

Conservation Agreements: Comprehensive Conservation

The San Clemente Island Fox Monitoring and Management Program is comprehensive, innovative, and successful. This subspecies, a DOD focal taxa for conservation, is managed according to a Candidate Conservation Agreement (CCA) developed between NBC and USFWS. Successful management has alleviated the need for legal protection under ESA and has allowed for expanded military training on SCI despite the fox's ubiquitous presence.

The program includes scientifically rigorous population monitoring, with results that are shared with both USFWS and California Department of Fish and Wildlife. Management for the fox includes an innovative approach to avoiding disease impacts. The Navy developed an Epidemic Response Plan, based on disease transmission studies and modeling and the Incident Command Structure approach. In addition to disease protection, management actions to reduce anthropogenic deaths include mowing the roadsides to increase visibility for drivers to see foxes and stop to avoid road kills, road signage, and an outreach campaign. Our program has shifted from signage and DVD presentations to a more direct outreach campaign, that involves direct discussion with island users regarding the conservation of island foxes. Utilizing the human dimensions study, we have pivoted efforts to provide a direct narrative with island users and utilize an ambassador fox for meet and greet opportunities. A last unique aspect of our fox management program is a staffed Fox Hospital, or as we call it the "Foxpital" that allows for veterinary care of foxes effected by human and non-anthropogenic actions, using radiographs, blood testing, and even surgery.

In 2018, the Navy initiated renewal of another CCA with the USFWS for Brand's phacelia (plant only found in about 6 US locations). The CCA was instrumental in preventing listing. The Navy's strong relationship with the regulator and proactive management approach (restoration, surveys, weed control, etc.) allowed for the development and renewal of this CCA. Over 50% of the species is managed on NBC. Listing of this plant could have temporarily halted Navy training on areas where this species is present, and cause unnecessary delays to future Navy projects.

Invasive Species Management

NBC continues to partner with the Channel Islands Restoration Group (CIRG) to remove invasive plant species on SCI. CIRG has removed dozens of acres of iceplant from the dune habitat. Dune habitat is very resilient to disturbance, and the recently cleared areas are quickly colonized by native dune plant species. These dune areas are very important foraging grounds for the San Clemente Island fox and the Bell's Sparrow.

The Navy has begun an Argentine Ant eradication project and an earthworm survey and threat assessment project at SCI. These non-native, invasive taxa could impact ecological functions and native species. Proactive management of such issues has proven vital to the success of the Navy Conservation Program on SCI.

To have a successful invasive species program, all landscaping projects must follow the NBC Plant List developed by the NBC Botanist in coordination with a landscape architect. Application of a stringent native vegetation requirement results in a benefit to native plant communities, decreases invasive species, reduces costs, and enhances water conservation through drought tolerant landscaping.

Fire Management



In partnership with base operations and range personnel, NBC implemented Wildland Fire Management Plans (FMPs) for the fire prone southern California bases (SCI, CMM, and RTSWS).

Implementation of the SCI FMP included installing over 15 miles of fuel break around explosive bombardment impact areas to reduce the threat of fire to sensitive natural resources, training areas, and infrastructure. The Conservation Team is constantly researching new strategies to improve management while saving resources, one such effort involves a training linkage with the HSC squadron supporting on-call firefighting support, instead of a full time presence of a contractor on island when training is occurring during fire season. This will provide benefit to the installation and invaluable training time for the squadron.

FMPs for RTSWS and CMM are vital documents to support these eastern San Diego County properties

prone to fire and more importantly, ensure the safety of operators training in these areas. Inland properties are located in habitats subject to fire. FMPs have been developed in coordination with stakeholders, such as Bureau of Land Management, U.S. Forest Service, Federal Fire, and California Department of Forestry and Fire Protection (CalFire) to ensure stakeholder buy-in. An Interagency Governmental Service Agreement, the first of its kind in the Region, has been developed between the U.S. Navy and CalFire to fund fuel vegetation modification for the protection of personnel and critical facilities. The cost of using CalFire is significantly lower than contracting out the effort and provides a training opportunity for the conservation camps, while having fire experts guide the work. To further complicate a sensitive topic, fire management is conducted in concert with endangered species management, specifically, the Quino checkerspot butterfly (QCB). Fire management zones are a good opportunity to manage for this species. Fire management zones at RTSWS had 37 QCB in 2018, which is an unprecedented number of documented individuals and further goes to show how fire management, training and managing resources can be balanced to support all criteria.

Erosion Control

Successful erosion control is vital to maintaining the ability to conduct realistic training on NBC training lands. Soil erosion reduces vegetation cover and makes some areas unusable or hazardous for training. Erosion control promotes sustainable use of NBC's training lands and maintains compliance with legal mandates, while preserving facilities.

Of particular concern is controlling erosion at CMM where soils are highly erodible. Naval Special Warfare conducts training in the natural environment and within their facilities. In the past several years, training, operations, and facilities construction have increased dramatically at CMM as has the risk of erosion. Controlling erosion ensures that increased Navy presence at CMM is not having a negative effect on the endangered QCB and its habitat, thus allowing training to continue. CH for QCB was designated on easements surrounding CMM, however, an exemption was granted at CMM based on national security. Training actions, such as navigation and surveillance, could have had restrictions imposed on them if a designation of CH were imposed.



Erosion project at CMM utilizing native plantings and check dams that preserved habitat and a road to access valuable training facilities within the installation.

Scripps Sea Level Rise

To better understand the dynamic environment in which NBC is set, the installation developed a memorandum of agreement (MOA) with Scripps Institute of Oceanography to study the changes of sea level and other environmental factors. Current studies being undertaken look at tidal impacts on the coastal boundary, changes in wind patterns, and contaminant transport within the ocean. The goals of these studies are multifold:

- Educate the installation on future land use planning considerations;
- Aid in predicting how training can be impacted by outside factors; and
- Provide a better understanding of habitat management in the ever changing environment.

SUMMARY

NBC Conservation is an integral part of the NBC mission and reaches across all divisions and tenants of the 8 surrounding bases. We aim to:

- Enable the DoD mission ensuring all requirements are met over 8 installations;
- Continue to be responsible landowners preserving and managing the over 66,000 acres and 29 threatened or endangered species that are found on the installation;
- Innovate to find new constructive management strategies; and
- Build strong partnerships with various stakeholders to provide long term benefits to NBC.