



NAVAL BASE CORONADO 2023 SECRETARY OF THE NAVY ENVIRONMENTAL AWARD NATURAL RESOURCE CONSERVATION – LARGE INSTALLATION MANAGING FOR THE MISSION

Introduction

Naval Base Coronado (NBC), the Navy's "West Coast Quarterdeck," located in San Diego, California is responsible for nine geographically distinct installations in Southern California and home to an estimated 36,000 active duty military and civilian employees. NBC supports the Navy's mission and drive for increased combat readiness by providing complementary and effective infrastructure to Fleet operating forces, while simultaneously delivering quality of life and wellness services for our Sailors and our families. NBC directs and delivers base operating support programs and services that exceed customer expectation contributing to the operational readiness of both ashore and afloat commands at NBC.



The NBC Natural Resources (NR) team supports the Commanding Officer (CO) by managing habitats in some of the most diverse ecosystems in the continental United States home to several species found nowhere else on earth. The CO's leadership is vital to the success of the NR Program on NBC, providing guidance on integration of the natural resources requirements with the military mission and management direction.

The nine NBC installations cover over 60,000 acres of land in addition to waters distributed over 3,380 mi² in San Diego and Los Angeles counties. Each installation is home to unique wildlife and plants, with 31 marine and terrestrial species protected under the Endangered

Species Act (ESA). The NR team successfully manages these species, contributing to successful recovery and conservation, while supporting training requirements to meet readiness objectives and expanding operational capacity and capability.

The NBC NR Program uses two Integrated Natural Resources Management Plans (INRMP). The NBC INRMP incorporates management of eight installations throughout San Diego County. Each installation provides unique features critical to readiness training. The 2,800 mostly developed acres of **Naval Air Station North Island (NASNI)** serve as the primary Pacific logistics hub and homeport for three nuclear aircraft carriers and support significant infrastructure and recreation. Just off-shore, NASNI supports eelgrass habitat critical to marine ecosystems and fisheries in the Pacific Ocean and San Diego Bay. **Naval Amphibious Base (NAB)** is 1,000 mostly developed acres of predominantly reclaimed land built during World War II. The base is bordered by both the San Diego Bay and Pacific Ocean providing direct access for Naval Special Warfare training and recreational opportunities. **Silver Strand Training Complex (SSTC)** encompasses 550 acres including 1.5M ft² of new facilities to support Naval Special Warfare Command as well as a flight drop zone. The Navy leases 26 acres of SSTC to the county for the San Diego Biological Preserve and 45 acres to YMCA Camp Surf to support environmental programs for local children. **Navy Outlying Field Imperial Beach's (NOLFIB)** 1,257 acres support helicopter operations training with large overflight easements (284 acres) of natural areas managed through partnership with the US Fish and Wildlife Service (USFWS) as part of the Tijuana River Natural Estuarine Research Reserve and 123 acres of agricultural leases. **Naval Training Site Otay Mesa (NATSOM)** is a recently acquired property that will be included in the next INRMP revision. The roughly 100 acre parcel is mostly undeveloped and supports four federally listed species. NBC is developing training at this site that will provide new and critical training opportunities in the metro area. **Camp Michael Monsoor's (CMM)** 5,500 acres are located in an unencumbered area that makes it an ideal

location for special reconnaissance, live fire, and other Naval Special Warfare training. **Camp Morena's (CM)** 62 acres located in southeast San Diego County supports CMM activities. **Remote Training Site Warner Springs (RTSWS)** is 12,544 leased acres in northeastern San Diego County. RTSWS is the home for the Navy/Marine Corps west-coast Survival, Evasion, Resistance, and Escape (SERE) field school.

The San Clemente Island INRMP addresses the management of **Naval Auxiliary Landing Field San Clemente Island (SCI)**, which is the Navy's only remaining CONUS live-fire ship-to-shore and air-to-ground range for combined arms resources (air, naval surface support, mortars, artillery, and electronic warfare). SCI's unique topography and proximity, yet relative isolation from the mainland, provide an unrivaled tactical training site. The SCI INRMP covers the entire 36,000 acres of the island as well as marine habitat out to three nautical miles. Approximately 350 permanent structures plus an airfield support the assigned staff of 300. SCI is not accessible to the public.



SCI Bushmallow, an endangered species proposed for delisting. A shining example of NRs conservation and range sustainment mutual success.

Background

The NBC and SCI INRMPs are in place to help successfully manage NBC's complex natural resources. The INRMPs were last fully revised in 2013, with updates completed annually and a complete revision of the SCI INRMP underway. Objectives in each INRMP are developed in consultation with state and federal partners USFWS, California Department of Fish and Wildlife (CDFW), and National Marine Fisheries Service (NMFS)], who track implementation through annual review meetings. The meetings, held in October, assure our partners that NBC is successfully managing natural resources. They also allow the Navy to describe training and operations needs and provide a venue for recommendations to improve program efficacy.

The NBC NR team is composed of five dedicated professionals, including two Natural Resources Specialists, one Wildlife Biologist, one SCI Operations Manager, and a Supervisory Natural Resources Specialist, who manage the program while maintaining the balance between operational requirements and the conservation of the marine, plant, and animal populations. A key part of its success is the continuous training sessions provided to base staff and tenants to ensure a clear understanding of the conservation measures in place which is incorporated and captured in the NBC Environmental Management System (EMS).

The scope of the NBC NR Program is unparalleled. Between FY 2021–2022, NBC INRMP implementation included funding for 68 projects on the mainland bases and 67 projects at SCI. These projects totaled almost \$10M in annual funding – ~23% of the entire Navy's Conservation budget! Of the projects implemented, the majority were critical to supporting training including \$6.8M used to meet Biological Opinion (BO) requirements that must be successfully implemented to conduct training. Roughly \$1M was implemented to prevent critical habitat from being designated or to prevent additional species from being listed on NBC bases, highlighting just how crucial the NBC NR Program is to ensure military readiness.

Summary of Accomplishments

The list of NBC NR Program's accomplishments is impressive, but it is the entirety of the program that really sets it apart. The NBC NR team supports no net loss to the military mission and displays unmatched leadership by implementing innovative natural resources management projects that directly address INRMP objectives and regional goals. Each of the accomplishments highlighted for 2021-2022 aligns directly with INRMP objectives. The team made unprecedented strides in attaining the objectives of the NBC Endangered Species Program using an integrated ecosystem management approach that includes comprehensive management of federally listed species and their habitats in a manner compatible with military operations. The team similarly addressed objectives to control invasive species and minimize encroachment to ensure watershed and ecosystem health and safe training environments. Communication and mission objectives were also achieved by delivering quick responses to emerging situations, allowing the team to

support over 3,500 training events and time-sensitive operational needs annually. These actions ensure base staff and tenants have a clear understanding of on-post conservation measures and enable the team to leverage strong relationships with regulators and other partners to navigate complicated interagency consultations and achieve regulatory compliance and Navy stewardship goals.

MISSION ENHANCEMENT

Delisting of the San Clemente Bell's Sparrow and Four Plant Species – Supplemental Analysis.

In January 2023, the NBC NR Program will have achieved the unprecedented feat of delisting four SCI plant species and the SCI Bell's sparrow. The work to get to the delisting over the finish line was completed in 2021-2022. Subsequent to the 2021 USFWS proposal to delist the five SCI species (SCI Bell's Sparrow, SCI Lotus, Paintbrush, Larkspur, and Bushmallow), additional training requirements emerged, which had not been previously been assessed as part of the delisting process. An expedited supplemental analysis, led by the Navy, was completed to support the increased training concurrent with the delistings. This analysis identified the impacts the proposed training would have on the delisted species under three alternatives, allowing NR managers, in partnership with operational stakeholders and USFWS, to develop avoidance and minimization measures to reduce the effects of training, ensuring both Navy mission and stewardship objectives were met and that the monumental achievement of delistings five species could proceed. **With these proposed delistings, Navy contributions to listed species recovery at SCI are unrivaled elsewhere.** In the history of ESA, there have only been 10 total plants removed from the list due to recovery. With the SCI delisting, NBC will be solely responsible for increasing the number of plants delisted under ESA due to recovery by 40 percent!



San Clemente Bell's sparrow population once numbered only about 300 individuals with a 96% chance of extinction. Under Navy management, this bird has made a remarkable comeback to over 6,000 individuals in a biological recovered, stable population with ESA delisting pending.

Additionally, within CONUS, only eight bird species have been delisted based on recovery and none have a range as small as San Clemente Bell's Sparrow.

The California Least Tern & Western Snowy Plover Program Ensures Continued Training and Minimizes Impacts on Federally Listed Species.

The California least tern and western snowy plover management program saw many successes in 2021–2022. Terns and plovers openly nest on NBC beaches simultaneously used for military training operations. This dynamic high-profile program relies on a cohesive Navy team and frequent coordination with military operations. Over the years, the NBC NR team has forged strong partnerships with USFWS, San Diego Zoo Wildlife Association, and others organizations resulting in effective proactive adaptive management directly supporting both conservation and military training. In 2022, 24% of NBC's plover fledglings were attributed to collaboration with SeaWorld's rescue and rehabilitation facility's captive rearing program at no extra cost to the Navy. The Tern-Plover program encompasses preseason site habitat maintenance and employs weekly monitoring throughout the year. The program facilitates research on impacts and behavior. For example, in 2022, tern blood samples were analyzed for the presence of PFAS chemicals, and innovative ecosystem-based predator management



Chick shelters were deployed mid-season as adaptive management response to curb recent increases in predatory pressures.

teams made data-informed decisions to sustainably reduce predation pressure. NBC NR team also expanded outreach in 2021–2022 by conducting extensive formal training to commands and ground operations. The NR team reported weekly to base operations and security and responded in real time to conflicts between critical military

training and meeting vital conservation measures. Since 2021, the NR Program has effectively reduced impacts to terns and plovers and maximized compliance by demarcating designated vehicle lanes adjacent to nesting habitat. Additionally, in response to

mid-season predatory pressures, the Tern-Plover team deployed 100 chick shelters, which mobile young can use to avoid detection by avian hunters. This year both adult and young terns were seen actively utilizing these shelters. This exemplary large scale program will continue to sustain team integrity, ensure training-ground access and work toward species' recovery.

Re-authorization of the Brand's phacelia Candidate Conservation Agreement (CCA). In 2013, USFWS proposed that Brand's phacelia, a small annual plant, be listed under ESA. The Navy developed a CCA with the USFWS outlining current and future management that would preclude the need to list this species under ESA. NBC is the lead agency for the CCA. Due to NBC's successful species' management, the CCA was reauthorized in 2022. This plant is found across training areas on NBC, and if were to become listed it would cost NBC hundreds of thousands of dollars, and significant delays in training and proposed construction. Successful proactive management by the NBC NR team has saved the Navy significant amounts of time and money, greatly supporting the mission.

NATURAL RESOURCES CONSERVATION PROGRAM MANAGEMENT – FISH AND WILDLIFE

Island-Wide Surveys for Recently Reclassified Species, San Clemente Island Tree Mallow.

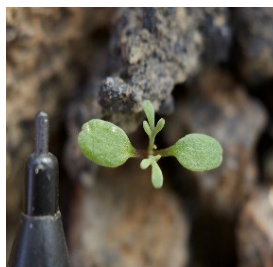


"New" species found at SCI – SCI Tree Mallow.

In 2022, with the discovery of new genetic evidence that *Malva assurgentiflora* be split into three separate species, there are now 17

plant species found only on San Clemente Island. One of these species has yet to be given an official taxonomic classification, but it is locally known as San Clemente Island tree mallow. Even without an official scientific name, the NBC NR Program wasted no time conducting a complete census of this plant, which revealed only 45 naturally occurring plants. Fortunately, the NBC NR Program has been proactively managing this species for over 20 years and has been planting it across the island at dozens of

restoration sites. The island-wide census documented 1,875 additional plants at restoration sites, for a total of 1,920 plants. The number of adult plants, juvenile plants, and seedlings was also documented and indicated a healthy, stable- to-increasing population. Continued management of this "new" species will require a lot more work, but sustaining positive population growth is crucial to ensuring this plant will not require listing under ESA, which would encumber critical SCI operations.



The cryptic Santa Cruz rock cress displayed next to the tip on a pencil.

Range-wide Census for Santa Cruz Island Rock Cress. In 2022, the Navy partnered with the USFWS, Rancho Santa Ana Botanic Garden, the National Park Service, and The Nature Conservancy to conduct a range-wide census for the federally endangered Santa Cruz Island rock cress. This plant is very small, and

incredibly hard to see in the field. It is presumed extinct on Santa Cruz Island, but is known to be extant on Catalina Island and within the Shore Bombardment Area (SHOBA) on SCI. Managing a species within SHOBA is difficult, so the Navy and its partner agencies are working together to recover this species. Using existing and known historic locations, the Navy produced a highly detailed model describing areas where suitable habitat for this plant is most likely to be found on the three islands. Partners then conducted surveys, focusing their efforts in the areas prioritized by the models. Botanists collectively walked hundreds of miles across the three islands searching for this plant, which often is less than 1 inch in height. Overall, 1,270 plants were detected on Catalina Island, and 1,896 plants were detected on SCI. More importantly, one new patch was discovered on SCI, and two new patches were discovered on Catalina Island. Though the plant is still presumed extinct on Santa Cruz Island, partners will continue to survey all three islands in 2023. Results from the 2022 surveys will be used to refine the model, which will hopefully yield more plant discoveries, and partnering with the other Channel Island land managers will help to expedite recovery of this species, reducing military encumbrances in SHOBA.

Greenhouse Propagation and Experimentation on San Clemente Island Woodland Star. The rarest plant on SCI is the San Clemente Island woodland star. This plant has only been found on SCI in eight canyons on the east side of the SHOBA. This species has a limited range and only a few dozen plants are found each year, so active management is needed to recover this species and not encumber military activities on SCI. Previous efforts to grow the woodland star in greenhouses proved difficult, but creative problem solving in 2021 led botanists to successful germination of seeds by way of climate control. Winter jackets in tow, the botanists planted 50 seeds and kept temperatures below 60 °F. Thirty seeds germinated and many produced flowers, which, in turn, produced over 400,000 new seeds! The seeds will be crucial for seed banking and potential restoration projects in the future. Lack of pollinators for this plant on SCI may be one of the reasons it is so imperiled. The NBC NR team proactively initiated pollination studies with flowering individuals to determine if and how pollinators might affect the recovery of this species. This multigenerational analysis is on-going as seeds from the pollinated plants will need to be grown next year to assess fitness.

Invertebrate Study to Inform Sensitive Species Management. The Navy teamed with Santa Barbara Botanic Garden (SBBG) and University of California Riverside to execute an ambitious project to recover rare plant and animal species by better understanding their pollinator and prey species, respectively. This work entails: pollinator surveys and network analyses for five ESA-listed plant taxa; diet analysis for San Clemente Loggerhead Shrike and San Clemente Island Fox via DNA barcoding; and terrestrial invertebrate surveys. This project epitomizes ecosystem management, documenting trophic effects, investigating mechanisms of management, and potentially identifying future monitoring opportunities. This study documented 681 morphospecies, representing 33 orders and 200 families. By collecting plant-invertebrate co-occurrence data, this project lays a foundation for understanding crucial ecological and evolutionary relationships among SCI's plants and terrestrial invertebrates. This project was the first formal study on the identity of vertebrate and invertebrate pollinators of five threatened plants from SCI. The study demonstrated the significant role

that habitat plays in maintaining key pollinators for the management of sensitive plant species, resulting in specific recommendations for future restoration efforts to promote recovery of the rarest plants. Diet analysis confirmed the importance of cactus fruit for foxes and documented that foxes consumed a surprising level of large butterflies and moths. The study also revealed substantial diversity in shrike diets according to a bird's age, wild/release status, and location. This information will be used to make critical decisions for the management of the shrike—the most endangered bird in North America. This project was proactive, innovative, and important for species struggling to recover, which have the greatest potential to encumber military operations.

California Coastal National Monument Seabird Management Success. Many of the offshore rocks surrounding SCI are part of the Bureau of Land Management (BLM) California Coastal National Monument (CCNM). The Navy, through a Memorandum of Understanding (MOU) with BLM, is responsible for managing the natural resources on these rocks, which also lie within the SCI INRMP area. The rocks (as well as parts of SCI) support rare seabirds, including Scripps's Murrelets, Guadalupe Murrelets, Ashy Storm-Petrels, and Leach's Storm-Petrels. Each of these species are considered sensitive, by the International Union for the Conservation of Nature (IUCN), and the murrelets are state-threatened in California. Monitoring and management for these rare seabirds, particularly for nesting habitat, is undertaken annually by the NBC NR Program. Monitoring methods developed for SCI have been applied by multiple agencies, with Navy-funded innovations benefitting the species range-wide. In 2021, the Navy funded and implemented nest site enhancement. Using a first-of-its-kind approach in the region, artificial nest structures were constructed to reduce nest site competition and increase nest success. This effort demonstrated almost immediate success with storm-petrels nesting in four artificial nest sites. In 2022, nest-site occupancy continued and expanded to include the first confirmed nesting of Guadalupe Murrelets at SCI. The species has been documented at SCI for 10 years, but breeding had not been confirmed

until use of the artificial nest structures was documented by camera trap. This observation represents an extension of the breeding range for this bird and it demonstrates the effectiveness of Navy NR management and support for the CCNM. For species under threat, successful Navy conservation efforts aid on-post sustainability and recovery, provide a blueprint for success

elsewhere, and have the potential to alleviate pressure for future more costly “rescue” efforts.



A Guadalupe Murrelet emerges from a Navy-enhanced nesting area, the first documented recent nesting of this ICUN “endangered” species in the U.S. Channel Islands.

Western Pond Turtle MOU Commitments

Upheld. In an effort to keep western pond turtles from becoming a federally listed endangered species, the Navy signed a Memorandum of Understanding with the USFWS in September 2021, agreeing to support conservation of the western pond turtle on Navy installations. If listed, there would be direct impacts to mission through increased constraints and costs to Navy. Working with US Geological Survey aquatic species experts under an interagency agreement developed to manage the endangered arroyo toad at RTSWS, the NBC NR Program is effectively managing this species, while saving the Navy the expense of building a separate program and allowing for immediate implementation. During toad surveys, western pond turtles are trapped, tagged, and monitored. Data directly support range-wide research needs and meet Navy conservation commitments.

INVASIVE SPECIES CONTROL AND PEST MANAGEMENT

Invasive Beetle Control Protects SERE Students and Oak groves. The invasive goldspotted oak borer (GSOB) beetle was first detected in California in 2004. The species is a significant threat to oak trees and is responsible for mass die-offs of groves at RTSWS. Falling trees and tree limbs pose a threat to Navy students during training and create training challenges

by blocking access roads. Mature oak stands provide students with shelter from the elements and cover during mission essential SERE training. Since 2019, when the GSOB was first detected at RTSWS, 187 trees have been treated either by felling, selectively trimming infested branches, or spraying trunks with insecticide. In 2021, surveys indicated that these efforts are reducing infestation levels within treated areas. As such, the NBC NR Program allocated 2022 funds toward the development of a comprehensive GSOB management plan to continue battling the threats to the oak groves and providing safe training environments.

Removal of Invasive Tree of Heaven (TOH) at RTSWS Supports Watershed Recovery. Over the last two years, 1.87 acres of TOH have been removed in the vicinity of riparian habitat where both the Least Bell’s Vireo (Federally Endangered) and the Tricolored Blackbird (Species of Special Concern - California Endangered Candidate) breed, leading to an increase of surface water from downstream springs. Invasive trees and shrubs that dominate watersheds draw upon significant amounts of water and are known to lower the presence of above ground water resources. Continued control of thirsty invasive plants like TOH greatly contributes to watershed recovery and, in turn, supports the recovery of six aquatic and riparian species managed by NBC. Promotion of endangered species recovery, and prevention of federal listing of special status species support the military mission by reduction constraints and costs.

COMMUNITY OUTREACH & EDUCATION

SCI Natural Resources Outreach – Bringing Sailors

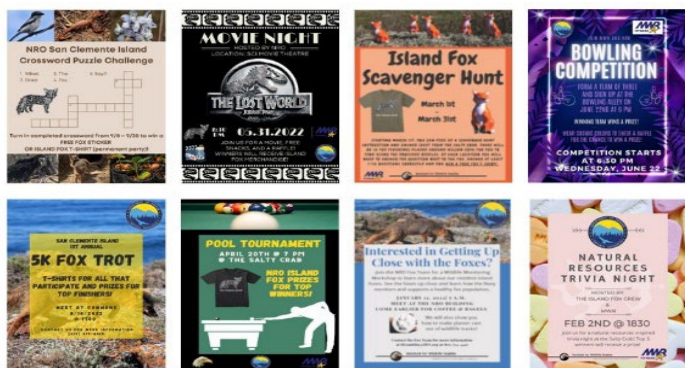
On Board. Within NBC, SCI is unique; a diverse, fragile, and isolated ecosystem with more critical mission importance than most other Navy Installations. It is an irreplaceable asset. In order to maintain the successful balance between the needs of the Navy and environmental stewardship, the NBC NR team regularly engages with the sailor, soldier, and civilian on-island community as an essential underpinning to the program’s success. In FY22, the NR Program significantly expanded its outreach efforts. Our program partnered with Navy Morale Welfare and Recreation (MWR) to host monthly events, passive outreach events that run over several weeks (crossword puzzles, scavenger hunts), on-line

education, briefs tailored to specific units, preparation and distribution of SCI NR calendars, a photo contest, updated pamphlets and flyers, new logos on t-shirts, mugs, and stickers given out at events, car air fresheners to instruct drivers how to avoid hitting foxes with vehicles and how to report collisions when they do occur. Outreach events allowed Navy active duty to see NR activities in the field, educated hundreds of sailors and civilians, and are changing how NR work is socially supported at SCI. SCI's first-of-its-kind annual NR calendar uses images captured in the field coupled with targeted education messages each month. Over 500 calendars have been distributed on SCI and provided to the NBC Public Affairs Officer (PAO) and Command Navy Region Southwest (CNRSW) Environmental PAO, who distribute them to school teachers and at public outreach events. They are a stunning way to get SCI's stewardship and educational messages broadly distributed with monthly reminders. The NBC NR

Closing Summary

Naval Base Coronado is one of the most dynamic installations in the Navy inventory and includes mission sets that support air, surface, subsurface, expeditionary, and special warfare operators across the Pacific AOR. Every day, NBC serves as the platform to train and equip our Sailors and Marines for these missions. The efforts of the NBC NR Program are integral to ensuring the tenant's on NBC can execute their missions when called on. The NBC NR Program:

- Enables critical fleet training by managing natural resources including 31 listed species on over 60,000 acres across nine installations.
- Successfully implements a vast program that receives over \$10M annually, to ensure that military construction and operations can continue.
- Provides an award winning, long-serving group with years of experience applying technical expertise to quickly develop strategies to meet evolving needs of fleet and joint military training.
- Serves with a steadfast commitment to outreach, education, and collaboration within and beyond the DoD. This communication is crucial to ensure that the program is using the most recent and scientifically sound techniques and able to anticipate and face challenges that could emerge in the near future.
- And, achieves unprecedented feats, as seen by years of work and collaborative efforts leading up to the successful completion of the 2021-2022 SCI supplemental analysis, which was pivotal to the publication of the delisting final rule in the Federal Register in January 2023.



Outreach efforts at SCI have significantly expanded in 2022 to include monthly events and partnerships with MWR. This outreach helps to support Navy conservation by educating sailors on the connection between NR management and Navy mission success.

Program also partnered with CDFW in 2021-2022 on efforts to reduce wildlife entanglement in fishing line through targeted outreach and the design, building, and maintenance of fishing line collection canisters at SCI. The program continues to promote the viewing of the Training the Troops video, which has been viewed over 900 times on YouTube and distributed by DVD and share-sites, providing concrete compliance and conservation direction for those training and working at SCI.