

NAVAL BASE VENTURA COUNTY

FY12 CHIEF OF NAVAL OPERATIONS ENVIRONMENTAL AWARD

Natural Resources Conservation, Large Installation



The Natural Resources Conservation Program (NRCP) at Naval Base Ventura County (NBVC) balances environmental stewardship with the mission as a major aviation shore command and Naval Construction Force mobilization base. NBVC is proud of the management of its natural resources and the successful execution of its environmental stewardship initiatives.



The Mugu Lagoon at Naval Base Ventura County, Point Mugu.

NBVC is comprised of three operating facilities: Point Mugu, Port Hueneme, and San Nicolas Island and several remote sites such as Laguna Peak, Fort Hunter Liggett and Santa Cruz Island. Point Mugu and Port Hueneme are both located along the Pacific coastline in southwestern Ventura County, California, adjacent to the cities of Oxnard, Port Hueneme and Camarillo. San Nicolas Island (SNI) lies in the Santa Barbara Channel, 75 miles west of Los Angeles. NBVC provides airfield, seaport and base support services to fleet operating forces and shore activities and employs more than 20,060 military and civilian personnel. These personnel work under 80 departments and/or supported commands that support the diverse missions of the Department of Defense. Examples of missions include combat and weapon systems testing on the 36,000 square mile Sea Test Range off the coast.

As part of the Environmental Division at NBVC, the NRCP has developed and implemented three Integrated Natural Resource Management Plans (INRMPs) as the basis for managing natural resources at each NBVC installation. NBVC Point Mugu consists of 4,500 total acres, consisting of 2,153 acres of jurisdictional wetlands (unimproved), 297 acres of beach habitat (unimproved), 342 acres of mixed habitat (unimproved), 435 acres of

airfield grasslands (semi-improved), and 1,263 acres of developed lands (improved). These jurisdictional wetlands, situated along 6.2 miles of Pacific Coastline, represent the largest remaining coastal salt marsh estuary in Southern California. Mugu Lagoon is the coastal termination point of the Calleguas Creek Watershed, which drains approximately 343 square miles of Ventura County. The estuary provides a habitat for thousands of migrating and wintering birds, as well as numerous invertebrate, fish, and plant species. Six federally listed species inhabit the site and are dependent upon this habitat, including one of the largest populations of the federally endangered salt marsh bird's-beak (*Chloropyron maritimum maritimum*).

Port Hueneme consists of approximately 1,650 acres, 1,484 acres of improved lands, 148 acres of semi-improved, and 17 acres of unimproved lands. There are more than 29 miles of roads and streets and 16 miles of railroad track. It is home to Brandt's Cormorants, one of the few populations of this species that nests on the mainland.

San Nicolas Island, nine miles long and four miles wide, consists of 14,258 acres including 325 acres of improved lands and 13,933 acres of unimproved lands. SNI is home to three federally listed threatened and endangered species and upwards of 170,000 marine mammals throughout the year.



A view of the coast from Naval Base Ventura County, San Nicolas Island.

NBVC supports a number of recreational activities including waterfowl hunting, bird watching, and fishing. Recognizing the aesthetic value and ecologically

significant biodiversity, NBVC upholds its natural resource management responsibility as an integral part of its mission by maintaining these areas with continual management support for the protection of coastal wetlands.



The Installation Environmental Program Director Dan Shide provided an environmental program overview on San Nicolas Island to Roger Natsuhara, the Acting Assistant Secretary of the Navy for Energy, Installations and Environment, with Captain Lawrence Vasquez, commanding officer of NBVC.

Organization and Background

The NRCP is part of the Environmental Division, which is part of the Public Works Department, Ventura County of the Naval Facilities Engineering Command Southwest (NAVFAC SW). The NRCP focuses on recovery of listed and sensitive species, and protects migratory birds and marine mammals in support of the Navy mission. Special program areas include support of the Bird Air Strike Hazard Program (BASH), grounds maintenance, and Port Operations. A wide variety of actions are carried out in coordination with the many tenant commands to ensure protection of the numerous wildlife species found at NBVC.

Integration with EMS

The Environmental Management System (EMS) is a fundamental component to NBVC's Environmental Division. The success of NBVC's EMS has contributed to structuring standardized methods and processes at NBVC and tenant commands regarding their practices that exhibit significant impacts to the environment. In addition, the Environmental Division is actively integrating standardized procedures into the management of the NRCP. In FY11 and FY12, progress was made

standardizing data collection methods, database management, and mapping techniques. To further support the EMS, the NRCP completed a significant number of INRMP projects in FY11 and FY12 in the following programs:

- Endangered Species Monitoring and Habitat Restoration Program
- Monitoring of Flora and Fauna Program
- San Nicolas Island Bio-security Program
- San Nicolas Island Snail Monitoring Program

In addition, NBVC revised the SNI INRMP in FY11 and the Port Hueneme INRMP in FY12 to include up-to-date information on mission, resources, and to develop new and innovative projects to help restore and protect flora, fauna and ecosystem.

Fish and Wildlife

The NRCP has focused the majority of its management activities on the effective oversight of threatened and endangered species, marine mammals and other protected species and their associated habitats. Specific objectives were carried out in the last two years to ensure appropriate controls are in place to oversee and monitor natural resources at NBVC.

Federally and State Listed Species

Federally and State Endangered California Least Tern (*Sterna albifrons browni*) and Federally Threatened Western Snowy Plover (*Charadrius alexandrinus nivosus*)



A Least Tern chick on the beach at Naval Base Ventura County, Point Mugu.

- NBVC Point Mugu (PM) has the 3rd largest California least tern nesting colony in California (89% of least terns breeding in Ventura County)

- In FY12, monitored 844 least tern nests, the highest number since monitoring began in mid-1990s
- Successfully avoided many potential impacts from projects or activities occurring near tern and plover nesting areas by coordinating with on-going Navy mission activities
- Proactively managed endangered species predators as part of species recovery
- NBVC PM and SNI have an estimated 53% of the breeding population of western snowy plovers in Ventura County
- Continued participation in yearly regional snowy plover and least tern recovery group meetings to discuss status, management objectives, and future strategies



A federally threatened western snowy plover in flight at Naval Base Ventura County, Point Mugu.

Federally and State Endangered

Least Bell's Vireo (*Vireo bellii pusillus*)

- Passive call surveys (FY11 and FY12) and point counts (FY12) conducted in willow patches where observed in FY 09 and FY10, their preferred habitat, which occur in small patches at Point Mugu and Port Hueneme
- All projects are reviewed to ensure measures are put in place to protect their habitat from disturbance

Federally Endangered

Black Abalone (*Haliotis cracherodii*)

- Avoided critical habitat designation in 2011 as NBVC revised SNI's INRMP to include provisions to protect and manage black abalone
- SNI has the only known stable population of black abalone in California that has been increasing over the past 10 years

- Hosted scientists conducting annual monitoring of long-term study sites and reproductive success surveys
- Continued to maintain area closures in prime abalone habitats along SNI's south shore
- Continued educational outreach to SNI island personnel to protect abalone and their habitats.

Federally Threatened

Island Night Lizard (*Xantusia riversiana*)

- Proposed for delisting by the United States Fish and Wildlife Service in 2012, as Navy stewardship of species has removed threat of extinction
- Funded new project to update the population estimate and to evaluate population stability through genetics and gene flow analysis
- Successfully surveyed for and relocated lizards that were in harm's way from projects, implementing a new procedure to monitor lizards post-relocation



An Island Night Lizard at Naval Base Ventura County, San Nicolas Island.

Federally and State Endangered

Light-Footed Clapper Rail (*Rallus longirostris levipes*)

- Mugu lagoon is the only place where light-footed clapper rails are found in Ventura County
- In FY12, documented 22 nesting pairs, the largest breeding population since intensive monitoring began in 1981
- Continued proactive management to reduce disturbance and predators as part of species recovery

Federally Endangered

Tidewater Goby (*Eucyclogobius newberryi*)

- Discovered in FY11 after an absence of over 60 years
- Protective measures implemented to ensure habitat is not disturbed by on-going activities on the installation

- Avoided any impacts to habitat from mission activities

State Endangered

Belding's Savannah Sparrow
(*Passerculus sandwichensis beldingi*)

- Point Mugu is home to approximately 1/3 of the entire state's population of Belding's Savannah Sparrows
- Habitat is protected and enhanced, including methods to reduce disturbance to nesting birds when access in or near nesting areas is required

State Threatened

San Nicolas Island Fox (*Urocyon littoralis dickeyi*)

- Proactive management has led to a stable Island Fox population, which avoided federal listing, as was done on other neighboring islands
- Vaccinating a subset of foxes during annual monitoring against rabies and distemper to protect them from a potentially devastating disease outbreak
- Mowing of roadsides to reduce the possibility of vehicle-related fox mortalities
- Continuing use of signage and pamphlets to educate SNI visitors and staff on the best strategies for safely co-existing with foxes



A party of Island Foxes at Naval Base Ventura County, San Nicolas Island

Additional Species and Accomplishments

Over the past two years, in addition to threatened and endangered species monitoring, an extensive number of projects were completed by NBVC's NRCP. Some of the most noteworthy features include:

Seabird Restoration – A concerted effort between a diverse group of partners enabled NBVC to successfully

complete an important ecological restoration project on SNI in FY12 involving the removal of feral cats. SNI is the 5th largest island in the world to successfully complete cat removal, and the largest island in the world to successfully remove cats without the use of toxicants. Lessons learned from this project will help other groups successfully deal with exotic species removal on islands. Recovery is already evident, with two seabird species, pelagic cormorants (*Phalacrocorax pelagicus*) and double crested cormorants (*Phalacrocorax auritus*) documented nesting on SNI for the first time.

SNI Nursery – In FY12, NBVC began renovations to support operations at the SNI Nursery for developing native plant stock to be used for erosion control, development of listed species habitat, and restoration projects associated with mission and infrastructure related activities. Additionally, the SNI Nursery will also support other natural resource management requirements, including but not limited to development of plants for Island Night Lizard relocation habitat, invasive plant species removal and replacement with native plants, and storage space for other researchers and resource monitoring programs.



The San Nicolas Island Nursery was renovated in FY12, which includes various plants as seen above.

Over a thousand plants have been propagated or rescued from grading projects since the SNI Nursery was refurbished in May 2012. Navy staff will work with other nursery staff from the Channel Islands to share data on propagation methods in a Channel Island Nursery Working Group. In addition to the erosion control plants already grown, we have successfully propagated a State Listed Threatened plant species, beach spectacle pod

(Dithyrea maritima), which is in decline on San Nicolas Island.

Oyster Restoration Program – Due to past declines in native oyster populations, an oyster restoration research pilot program was launched at Point Mugu in FY09. Through a partnership with Channel Island Marine Research Institute and a grant from the Nature Conservancy, in FY11 and FY12 the project continued to experiment with different techniques to create new oyster beds, which will help remove contaminants from water and provide habitat for diverse assemblages of fish and invertebrate species.

SNI Long-term Bird Community Surveys – In FY12 historic bird survey points on SNI were re-visited to document bird abundance and diversity to compare to past surveys. These and future surveys will provide a historical record to document changes in the bird community over time and how they are influenced by climate-driven habitat changes.

Omega Plane Crash Response – In May 2011, a K-707 aerial tanker carrying 155,000 pounds of jet fuel crashed into the Mugu Lagoon. The Environmental Division led the way to implement responses to reduce the environmental impacts to the 2,200 acre lagoon. The key objectives for the response were collection of floating fuel, protection of wildlife, and safety of all response personnel. Spill response crews, including Seabees from NMCB 40 and UCT 2, NBVC personnel, and contractor personnel, used both oil absorbent and oil containment booms and plugged culverts with sand bags to contain the spreading jet fuel. By dawn the next day, the fire was extinguished and the fuel was contained to just 79 acres.



A K-707 aerial tanker carrying 155,000 pounds of jet fuel crashed into the Mugu Lagoon at Naval Base Ventura County.

NBVC developed appropriate cleanup goals in consultation with the Natural Resources Trustees and the appropriate regulatory agencies. All cleanup operations were coordinated with Navy operations between scheduled missile launches and Airfield operations. Almost 2,000 cubic yards of sediment was removed and replaced successfully before the onset of the rainy season. The initial emergency response and subsequent sediment remediation was completed in 5 months time.

One year since the plane skidded into the salt marsh there has been an amazing recovery. The burned vegetation



Above is a before and after picture taken at the same angle, part of Mugu Lagoon at Naval Base Ventura County. A road was built during the clean-up process. When all was complete, the wetlands were restored back to its original state in August 2012.

completely recovered, and where soils were removed or trampled under the pathway of the heavy equipment there is a flourishing of native pickleweed and other salt marsh plants. The project is now in the restoration phase of the Natural Resource Damage Assessment to determine temporal loss of function and mitigation. Once completed, the Trustees will assign a mitigation value to be given to the Responsible Partner.

Brandt's Cormorant monitoring – SNI is home to the largest Brandt's cormorant nesting colony throughout the species range (over 5000 nests). Port Hueneme is also home to a small nesting colony of Brandt's Cormorants, which is the one of the few mainland colonies in southern California. The cormorants began nesting on site in FY08. The NRCP monitors this colony for population and breeding success and also aims to reduce disturbance to the cormorants. The colony has increased in size each year. In FY12, a minimum of 112 adults and 100 fledglings were documented.

Bird Aircraft Strike Hazard (BASH) and Raptor Relocation Program – The NRCP works with Air Operations to carry out a proactive BASH program to minimize potential aircraft interactions with wildlife, specifically birds. Such efforts benefit aircrew safety and

reduce the potential for loss of aircraft. Efforts include the following: a raptor relocation program to capture and relocate falcons, hawks, and owls from the airfield; providing habitat modification recommendations; and working closely with the Bird Hazard Working Group to keep group updated on avian activity and projects that may affect BASH.

Marine Mammals – SNI serves as an important refuge for three species of marine mammals and is one of the top marine mammal breeding sites in the world. Annually, more than 81,000 adult elephant seals (*Mirounga angustirostris*), 60,000 California sea lions (*Zalophus californianus*), and 800 harbor seals (*Phoca vitulina*) haul out on the island's beaches and rocky outcrops to rest, breed, and give birth to up to 40,000 pups annually. As a mainland haul out site for Pacific harbor seals, Point Mugu offers a unique refuge for a resident population. Reducing disturbance and regular monitoring of the seal population are conducted in order to monitor and protect this seal species.



One of the many elephant seals at Naval Base Ventura County, San Nicolas Island.

During FY11 and FY12, the NRCP managed military activities and projects in accordance with the Marine Mammal Protection Act by:

- Conducting annual aerial pinniped breeding season surveys on SNI
- Gathering data on distribution, abundance, age structure, pup production, and reproductive phenology on SNI
- Supporting quarterly surveys performed by US Geological Survey of southern sea otters (*Enhydra lutris neres*) occurring in the near-shore waters around SNI

Wetlands

The NRCP at NBVC has focused on wetland restoration as an essential component of conservation management in line with the enhancement of the Navy's mission. Although impacts to wetland resources from military operations and base development are sometimes unavoidable, the NRCP strives for continuous habitat improvement:

- To date, approximately 50 acres of wetlands have been successfully restored at Point Mugu.
- NRCP initiated preparations for a wetland mitigation bank, which will contain current and future restored wetlands. The bank will be used to offset future impacts to wetland resources.

NBVC has many shoreline assets that may be negatively impacted by rising sea levels. In order to protect the military mission, valuable assets, and sensitive habitats, NBVC partnered with The Nature Conservancy in conducting the Coastal Resilience Project in FY12. The coastline is being assessed for topography, bathymetry, predicted rainfall and storm events for use in preparing a predictive modeling program. This model will greatly enhance NBVC's ability to plan for sea level rise.

NBVC Point Mugu has already experienced severe coastal erosion, which threatens important buildings and transportation corridors. NBVC initiated a study in FY12 to determine the cause of the NBVC's coastal erosion. This study will be able to suggest solutions based on science. The information gained in these endeavors will aid in short term development and long term planning on base.

Community Engagement

NBVC continually coordinates with local community members by involving them in conservation and educational efforts. The NRCP has developed partnerships with academic institutions, which benefits the Navy by raising awareness of managing environmental aspects of the missions that are conducted at NBVC. During the award period, NBVC has actively coordinated efforts with the following committees and groups:

- Calleguas Creek Watershed Task Force
- Ormond Beach Task Force
- Southern California Wetland Recovery Ventura Task Force
- Channel Islands Biosecurity Working Group

Furthermore, NBVC participated in a myriad of community activities to increase community awareness of its NRCP in FY11 and FY12 including:

Photo and Specimen Display Booth – In FY11 and FY12, the NRCP further enhance their photo display to feature NBVC’s natural resources and threatened and endangered species. The specimen display includes activities for children, including a memory game featuring endangered species. In FY12, the displays included more species to showcase. These displays are an integral part of an information booth set up and staffed at various events to engage the local community by raising awareness and highlighting the success of integrating environmental stewardship with the Navy mission at NBVC. Events included:

- City of Oxnard Earth Day Celebration
- City of Camarillo Earth Day Celebration
- NBVC Earth Day Celebration
- Bard Elementary School Earth Day Presentation
- Annual Point Mugu Surf Contest



Martin Ruane, NBVC Natural Resources Program Manager, provides an Environmental presentation to the students of the 2nd grade classes at Bard Elementary School as part of the 2012 Earth Day celebration.



A surfer riding the waves at the 2012 Point Mugu Surf Contest, Naval Base Ventura County

Volunteer Opportunities – The abundant natural resources at NBVC offer a unique experience for volunteers to assist on special projects and supplement staff efforts. In FY11 and FY12, volunteers assisted in the removal of Sahara mustard and other invasive plants in sensitive areas at SNI and participated in four marsh clean up events at Point Mugu.

In both FY11 and FY12, local university students and community members were trained to serve as volunteer observers of the endangered California Least Tern nesting colony. Volunteers spent over 265 hours monitoring least terns from blinds during the peak breeding season in FY11 and FY12. This mutually beneficial arrangement allowed volunteers to gain valuable experience while freeing NRCP staff to work on other assignments.

Nature Tour and Lectures - Annually, the NRCP conducts up to 12 tours of Mugu Lagoon for local community groups such as the Audubon Society. Such tours showcase work of the NRCP as well as the abundance of wintering waterfowl or migrating shorebirds that depend on this critical habitat. Additionally, in-depth field lectures are conducted annually for students in the California State University – Channel Islands environmental science programs. These programs serve to provide students with examples of conservation in action, as well as encouraging the formation of partnerships to assist in research and information gathering at NBVC.