

NAVAL SUPPORT ACTIVITY PANAMA CITY, FLORIDA

Natural Resources Conservation - Small Installation

Introduction

Naval Support Activity Panama City (NSA PC) is a hidden treasure located along the western shore of St. Andrew Bay on the Gulf of Mexico in Florida's panhandle. NSA PC's mission statement, "We Exist to Enable and Sustain Warfighter Readiness" embodies a long tradition of service dating back to the installation's beginning as a Mine Countermeasures Research facility during World War II.



NSA PC's largest tenant is Naval Surface Warfare Center Panama City Division (NSWC PCD), one of the Navy's major research, development, test, and evaluation (RDT&E) laboratories. NSWC PCD boasts a wide base of expertise in the mission areas of mine warfare, expeditionary warfare, special warfare, and diving and life support. NSWC PCD and the other three major tenants, the Navy Experimental Diving Unit (NEDU), Naval Diving and Salvage Training Center (NDSTC), and Center for Navy Ordnance Disposal and Diving, make NSA PC the consolidated site for all Navy diving and salvage research, development, testing, and training.

NSA PC employs over 4,300 people, including 347 military, 1813 civilians, 965 contractors with 48 families residing in base housing. This number includes up to 300 students in each A School training sequence at NDSTC for an annual total of over 1210 students. NSA PC sustains an annual

payroll of over \$320 million and a total contracting effort of over \$389 million.

The extraordinary display of nature's splendor at NSA PC encompasses 656 acres of improved, semi-improved, and unimproved acreage. Approximately 177 acres of managed forest, a diverse range of wildlife, 13 miles of delineated wetlands, three miles of coastline along St. Andrew Bay and four Gulf of Mexico test sites are managed under the guidance of the Integrated Natural Resources Management Plan (INRMP).

Significant natural features include:

- Five natural communities including a maritime hammock.
- 102 acres of delineated wetlands.
- Two state threatened and endangered plant species, Godfrey's Golden Aster and Long-leaved Jointweed.
- 13 federal and state threatened and endangered vertebrate species include Gulf Sturgeon, American Alligator, five species of sea turtles, Piping and Snowy Plovers, American Kestrel, Bald Eagle, Least Tern and West Indian Manatee.

Background

The NSA PC INRMP is updated annually and reviewed with federal and state wildlife partners. The latest review with the partners took place 9 November 2011. Topics such as ecosystem integrity, listed species, partnership effectiveness, INRMP project implementation and impact to the mission were discussed. The Natural Resources Program Manager allocates 0.3 work years annually to the program while managing the Cultural Resource program and the Environmental Management System. With assistance from colleagues in the Environmental Office (EO) and support from the command, the Natural Resources Manager has shaped a program that addresses the unique needs of the NSA PC natural environment. The NSA PC EO actively participates in numerous boards and committees on the installation that

influence natural resources management. Through the Site Approval Process the EO is involved in the earliest planning stages of projects to ensure environmental considerations are addressed. The EO is represented at the Public Works Department Work Induction Board meetings. At these meetings projects with natural resource elements are assigned to the Natural Resource manager for review and comment. These practices allow the EO to bring partners into the decision making process during the initial planning stages. Timely consultations with agencies including United States Fish and Wildlife Service (USFWS), National Marine Fisheries Service, and Florida Department of Environmental Protection (FDEP) enable NSA PC to protect natural resources and achieve mission goals. The positive working relationship we have with our partners assures the EO that the natural environment will be protected and intact for future generations.

An ISO 14001 Environmental Management System (EMS) ensures continual improvement to the installation's natural resource program which results in reduced impacts to the environment and the conservation of natural resources while supporting the mission. NSA PC's commitment to the environment is clearly communicated to employees, contractors, students, partners and the public through the EMS Policy Statement, training, newsletters, meetings and community involvement. Data from the 2011 internal EMS audit demonstrated that there was widespread understanding by the employees of their roles and responsibilities in protecting the environment.

Program Summary

The NSA PC is proud of its Natural Resource program and for good reason. For such a small installation with limited resources to implement and manage numerous proactive projects is nothing short of outstanding. Through the use of a superior INRMP to manage resources and the cooperation of command and tenant Research, Development, Test & Evaluation planning staff, the EO can be assured that resources are protected. The INRMP implements an ecosystem-based conservation program that provides a sustainable multi-purpose use of the environment. NSA PC continues to enhance the biological integrity and diversity of the

installation's land through a targeted prescribed fire program, invasive/exotic species elimination, and wetland protection programs.

A robust EMS and careful planning ensures that all proposed mission projects and associated work processes are completed on time and with no adverse effects to the environment. NSA PC takes stewardship of public lands very seriously. The Command dedication to this stewardship is an integral part of its role in enabling warfighter readiness. The Commanding Officer's Environmental Policy reminds all hands that their duties must be performed in a manner that prevents pollution and protects natural resources while supporting the mission. Everyone aboard NSA PC is charged with the obligation to be a good steward in protecting the environment.

Accomplishments

Living Shoreline Restoration Project

NSA PC discovered an innovative way to address years of erosion from natural and man-made causes along the installation shoreline with St. Andrew Bay. Utilizing a living shoreline versus armored coastlines of rip-rap or concrete sea walls, the EO took the initiative to help protect one of the few remaining pristine bays with significant sea grass beds remaining in northwest Florida.



Sea grasses flourish at NSA PC stabilizing the shoreline and attracting wading birds.

Since erosion of shoreline can smother sea grass beds which support local fish and other estuarine species, a living shoreline protects and enhances juvenile habitats and foraging grounds for the fish of St. Andrew Bay. The shoreline of two archaeological occupation sites eligible for the National Register of Historic Places will also be

protected. The living shoreline maintains the natural coastal process with vegetation that removes excess pollutants from stormwater while providing a habitat for aquatic and terrestrial organisms.

In these challenging economic times the EO looked for a creative way to fund this project without impacting the mission. NSA PC partnered with the University of Florida Bay County Extension Sea Grant agent who introduced the EO to the Florida Department of Environmental Protection (FDEP) Northwest Florida Ecosystem Restoration Branch. FDEP was looking for partners in the eastern portion of their district where a living shoreline could be installed. They wanted to find a way to publicize this restoration concept versus the typical hardened seawalls or rip-rap used to address erosion.



Jonnie Smallman, Natural Resources Program Manager, discusses the Oyster Reef installation with a Florida Department of Environmental Protection representative.

FDEP secured and administered a grant on the installation's behalf from the Fish America Foundation (FAF). FAF is interested in maintaining the essential nursery habitat of the bay for over 70% of commercial and recreational finfish and shellfish species. FDEP has successfully restored marsh grass habitats in other areas in northwest Florida and knew that combining oyster reefs with emergent plant re-vegetation would protect the shoreline from further erosion, and also would be a positive impact to the sportfish and commercial fishing industries. Additional funding from the America Sportfishing Association, the National Oceanic and Atmospheric Administration Restoration Center and USFWS was also secured for the project.

Completed in July 2011, the project installed a living shoreline at three locations along 2,800 feet of NSA PC's shoreline. The project consisted of two phases. In the first phase 175 oyster reefs were constructed with recycled oyster shells from local fish houses. The reefs each measured 8-feet by 3-feet by 2-feet and were installed 5-10 feet from the shore to reduce incoming wave energy from St. Andrew Bay. During the second phase 22,000 salt marsh grasses were planted along the shoreline. One species of marsh grass was planted 5 feet waterward of the mean high water line and two species were planted in the shoreline upland area.



Support from Navy and Air Force personnel, as well as over 100 volunteers, was needed to complete the planting of 22,000 marsh grasses.

NSA PC partnered with the local community and hosted 28 events from October 2010 to July 2011 that involved installing the oyster reefs and planting the grasses. Earth Day events in 2010 and 2011 were also incorporated into the project. Volunteers ranged from high school students in advanced science classes to Navy and Air Force military and civilian personnel. In addition, there were 100 students from eight universities that volunteered as an alternative Spring Break as well as volunteers from local environmental organizations. 600 volunteers donated an astounding total of 2,840 hours in support of the project.

NSA PC will provide access to the main project site for community partners to view the living shoreline and enjoy the vista they helped create. Permanent interactive signs detailing the project have been

ordered and will be installed along a walking path near the base recreational marina to communicate this effort.

“We anticipate NSA PC’s living shoreline will increase public awareness of coastal systems, educate coastal property owners about the advantages of living shorelines, and provide an effective educational strategy to teach school-age children the importance of protecting the environment.

- Amy Baldwin-Moss, Director, Ecosystem Restoration Section, Northwest Office FDEP

Project Highlights:

- Restored 2800 linear-feet of shoreline at three locations on base.
- Installed 175 reefs utilizing recycled oyster shell to reduced wave energy for newly planted grasses. Oysters are expected to grow on this substrate.
- Planted 22,000 marsh grasses donated by Florida Department of Environmental Protection valued at \$44,000.
- Restored 2.5 acres of estuarine habitat.
- FDEP donated Permit and Grant application services.
- Received Grant, administered by FDEP, from Fish America Foundation, American Sportsfishing Association, NOAA Restoration Center, U.S. Fish and Wildlife Service.
- 2840 volunteer labor hours at 28 events during a nine month period valued at \$57,520.
- Volunteers included Navy and Air Force personnel, 100 students from eight colleges during Spring Break, students from two high schools, Gulf Power employees, and local community volunteers.
- FDEP website highlighting the project is at http://www.dep.state.fl.us/northwest/Ecosys/section/living_shorelines.htm

Prescribed Fire Program

Implementing a successful prescribed fire program at NSA PC has been a challenge. Located inside a wildland-urban interface, smoke management can be a challenge because two of the most heavily traveled roads in Bay County border the installation. Weather conditions must be ideal to ensure that

these roadways and surrounding residential neighborhoods are not impacted.



The burn crew monitors a test fire to determine if the fire will behave as prescribed.

Managing a prescribed fire program with limited resources is also challenging. NSA PC has only two personnel trained to conduct prescribed burns. The installation partners with the Chipola district of the Florida Forest Service for equipment and personnel support. This partnership has been a tremendous success having completed a 30 acre burn 500 feet from family housing and approximately 1200 feet from the state roads bordering the installation.

We rely on the prescribed burn program to maintain biodiversity of NSA PC’s natural communities. Prescribed burning improves habitat by removing dense, scrubby understory vegetation and invasive species and allowing early succession flora to grow. Burning removes forest floor litter making wildlife food easier to find and ultimately reduces fuel loads that can contribute toward catastrophic wildfires.

Threatened and Endangered Species

Intense commercial and residential development surrounding the NSA PC has all but eliminated any wildlife corridors between the installation and significant off-installation wildlife areas. Because of limited habitat resources and habitat fragmentation, NSA PC must use its existing resources to help provide for the regional continuation of wildlife species.

Three federally listed threatened and endangered species, the Gulf Sturgeon, the American Alligator, and the West Indian Manatee, have a potential to visit the installation. West Indian Manatees have been known to frequent Alligator Bayou and the MWR marina, and when sited, vessel operating notifications are provided to port operations and the recreational craft operators.

Specific management strategies are identified for State threatened bird species, the Least Tern and the Bald Eagle. Least terns nest on the rooftop of Building 110 where numbers of nests and chick counts are recorded. Predator protection is provided on the roof so that chicks can hide from predators. Fencing along the roof edge is also provided for those chicks that hastily scamper to the roof's edge but have not yet learned how to fly. Federal and State management guidelines are utilized to ensure mission activities do not threaten the bald eagle's nest on the installation.

RDT&E projects that have the potential to affect federally protected species at Gulf of Mexico test sites are reviewed by the tenant Test Safety Review Committee to ensure environmental aspects are addressed. These projects receive NEPA review where consultations with appropriate federal agencies are conducted and permits secured. RDT&E projects in the Gulf of Mexico test areas are covered under the NSWC PCD Mission Activities Final Environmental Impact Statement.

Invasive/Exotic Species Eradication Program

Management of invasive/exotic species is a fundamental concept of ecosystem management. Because invasive species typically out-reproduce native species, and have a propensity to spread, their eradication is essential for the protection and enhancement of the native biodiversity.

A successful partnership in 2010 with NAS Meridian natural resource staff completed the removal of 98 percent of four invasive/exotic plant species on the installation. Maintenance to keep the species abated was added to the Base Operating Service contract in 2011.

The EO has required that feral cats be removed from the installation because they can have a significant impact on migratory birds and the balance of our ecosystem. The Base Operating Service contractor traps the feral cats and turns them over to two local rescue organizations that neuter the cats, administer shots and find new adoptive owners.

Wetlands Protection Program

A Wetlands Delineation was completed in 2010, identifying 102 acres of wetland area on the installation. The NSA PC wetlands provide habitat for birds, fish, other animals, and native plants, storing and purifying water, and providing open space and aesthetic value.



Turtles sunning on an abandoned communication duct bank that runs through a freshwater pond.

Management practices include DoN's policy of no net loss of wetlands and developing/maintaining vegetative buffers widths of 50 feet around wetland areas, except where sufficient acreage is not available as determined by the NSA PC Natural Resources Manager. A minimum buffer width of 50 feet is required to provide the basic physical and chemical buffering needed to reduce siltation into the wetland, retain the natural attenuation and filtering capacity of the wetland, and maintain the biological wetlands communities.

In areas where the acreage available for buffering is not sufficient or greater protection is needed, the EO has established a policy that redirects, discourages, or prohibits pedestrian and pet access

to the wetland or buffer area and is enforced via the placement of hedges, fences, or signs. NSA PC also plants vegetated filter strips to intercept runoff before it reaches a wetland. Another long-term management practice is the protection of water quality through the support of the NSA PC stormwater pollution prevention team with representatives located throughout the installation.

Beneficial Landscape

NSA PC was able to invest over \$100,000 in beneficial landscaping during the reported period by planting drought resistant plants in prestige areas aboard the base. NSA PC uses *xeriscaping* in landscaping around all newly constructed buildings or other facilities. Xeriscaping is also being phased into existing landscaped areas as well. Xeriscaping offers NSA PC a viable alternative to the typically high-volume water requirements of other landscaping approaches by conserving water through creative landscaping. Xeriscaping makes use of native plants, which are typically better adapted to local climatic conditions and variations; more resistant to drought, disease, and pests; and require less water than non-native species. The benefits of xeriscaping to NSA PC include reduced water use, reduced heating and cooling costs from placement of appropriate tree species, decreased stormwater and irrigation runoff, fewer pesticide and fertilizer applications, less yard waste, increased habitat for plants and animals, and lower labor and maintenance effort and thus lowered costs. Xeriscaping projects on base have reduced water usage as much as 80 percent.

Clean Marina

FDEP, together with the Clean Boating Partnership, recognized the Morale, Welfare and Recreation (MWR) marina facility at NSA PC as the 170th member of the Florida Clean Marina Program (CMP). Members of the CMP pledge to take a proactive approach to environmental stewardship and implement Best Management Practices (BMPs) that help protect coastal waterways. Membership must be maintained annually to ensure adherence to the BMPs. NSA PC recreational marina has completed two years in the CMP.



University of Florida Sea Grant Agent Brian Cameron congratulates MWR Marina staff on their admission to the Florida Clean Marina program.

Community Partnerships

NSA involves our neighbors in our stewardship responsibilities of public lands. Partnerships were established with FDEP, the Bay Environmental Study Team, Friends of St. Andrew Bay, Bay County Schools and the University of Florida Bay County Extension Office when establishing the living shoreline.

Amy Baldwin-Moss, Director, Ecosystem Restoration Section (ERS) at FDEP commented, *“FDEP was privileged to have such an enthusiastic and supportive partner for the NSA PC Living Shoreline Project. The successful completion of this project was due to the dedication, passion and resourcefulness of the NSA PC EO who dedicated themselves as well as numerous resources to the project. This partnership enabled FDEP ERS to operate efficiently and effectively within the eastern bounds of our District and without this partnership we would not have been able to undertake such a large endeavor so far from our home base in Pensacola”.*

In 2010, NSA PC partnered with the Coast Guard, U.S. Fish and Wildlife Services, Gulf World and other agencies and rescued 50 turtles from frigid Bay waters by transporting the turtles to warmer offshore waters.

NSA PC partners with FDEP, Eglin and Hurlburt Air Force Bases and Northwest Florida Navy installations quarterly on compliance related issues. This partnership has allowed NSA PC to proactively address environmental concerns with regulators and to present innovative success stories

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such as the living shoreline restoration project and invasive species removal. An additional partnership with FDEP, NSA PC and Naval Facilities Engineering Command addresses the Installation Restoration and Petroleum cleanup programs by efficiently assisting the base in reaching closure for each environmental site. Each team member is essentially a stakeholder and is empowered to make decisions on behalf of their respective organizations.

NSA PC celebrated Earth Day 21 April 2010 with a shoreline cleanup event that was needed before the living shoreline project could begin. NSA PC and tenant military and civilian personnel participated in the event which collected approximately 10 cubic yards of debris from 1000 feet of shoreline.



Hard at work at the 2010 Earth Day Shoreline Cleanup

On 21 April 2011, NSA PC EO hosted a shoreline grass planting event to celebrate Earth Day and the Navy's theme of Partnering for a Greener Future. NSA PC military and civilian personnel partnered with the FDEP and science students from two local high schools to promote a Greener Future.



Proper grass planting techniques are demonstrated for NSA PC military and community volunteers by FDEP ecosystem restoration specialists, Zack Schang and Penelope Bishop.

The NSA PC Environmental Office hosts the annual tree planting event to celebrate Florida's Arbor Day.

The NSA PC Commanding Officer ceremonially plants native trees and issues a proclamation requiring all personnel and partners to recognize the importance of planting, managing and preserving our urban forest as responsible public land stewards. 2011 marked the 16th year that NSA PC has been certified as a Tree City through the national Arbor Day Foundation. In 2011, the next generation of Sailors helped plant the next generation of trees ensuring the urban forest habitat for future generations. When held during the annual Take Our Daughters and Sons to Work Day, the NSA PC EO also has an opportunity to teach the Sailor's children the importance of protecting our natural resources.



Ken Rudisil, staff horticulturist from the University of Florida Bay County Extension Office, assists NSA PC and tenant command staff with planting trees on Arbor Day 2011.