

**FY 2006 SECRETARY OF DEFENSE  
ENVIRONMENTAL AWARDS**

**NATURAL RESOURCES CONSERVATION:  
LARGE INSTALLATION**



**NAVAL WEAPONS STATION  
CHARLESTON**

FY 2006  
SECRETARY OF DEFENSE ENVIRONMENTAL SECURITY AWARD

SUMMARY PAGE

NATURAL RESOURCES CONSERVATION: LARGE INSTALLATION  
NAVAL WEAPONS STATION CHARLESTON, GOOSE CREEK, SC

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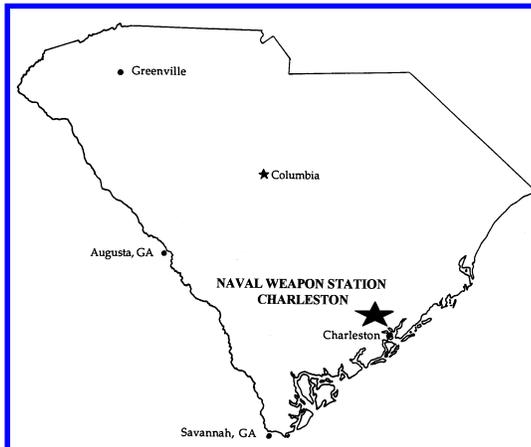
# NAVAL WEAPONS STATION CHARLESTON

## NARRATIVE SUMMARY

Naval Weapons Station Charleston's Natural Resources Program's primary focus is on resource management and protection but environmental education and outdoor recreation are emphasized. The program uses a variety of innovative and cost saving initiatives to accomplish its mission. Extensive use is made of volunteer assistance provided by a large Natural Resources Volunteer Program (55 participants). Alternative funding sources are maximized by partnering with non-profit and state agencies. Outstanding projects and accomplishments within the award period covered were numerous. Red-cockaded woodpecker (RCW) management was intensified with the installation of three new recruitment clusters, each cluster with four artificial cavities. Fifty acres of RCW foraging habitat was enhanced by mechanical clearing. Invasive species control was significantly expanded with 400 acres of aquatic weeds treated and a feral hog control program initiated removing 100 hogs. Timber harvests were reinstated following hurricane recovery with 162 acres thinned and 6,000 tons of pulpwood harvested. Longleaf pine ecosystem restoration continued with invasive loblolly removed from young longleaf stands. Expanded participation in community outreach programs was achieved through participation in "National Public Lands Day", "Beach Sweep, River Sweep", United Way's "Day of Caring", and the "Take One, Make One" youth hunter mentoring program. Wildlife habitat was managed in a variety of ways including prescribed fire (3,300 acres annually), wildlife food plots (80 to 100 acres annually), mast producing trees (138 planted), wood duck nest boxes (85 boxes) and non-game nest boxes (six designs/100 boxes). Wild turkey population recovery enabled the re-institution of turkey hunting with 34 tom turkeys harvested. The prescribed fire/wildfire prevention program treated 6,636 acres with controlled burns, a 58% increase over annual acres burned in the previous decade. Outdoor recreation safety classes were conducted with six ATV safety classes certifying 14 students and 13 hunting and boating safety courses certifying 502 students. The Nuisance Alligator Handlers Team safely moved 17 alligators from inappropriate locations. Growth of outdoor recreation activities was marked by the institution of a Patron Pass program to facilitate public access. Two hundred and seventy-one passes were sold along with 1406 Station hunting and fishing licenses. In addition, the existing 12.5 mile long mountain bike trail was maintained by adding two bridges and seven wetland boardwalks. Four mountain bike races were hosted. Tree City USA designation was received for the 10<sup>th</sup> and 11<sup>th</sup> consecutive years. And finally, public relations were promoted by publishing 42 articles on the Charleston Naval Weapons Station's Natural Resource Program in military and civilian media.

## INTRODUCTION

Naval Weapons Station Charleston's (WPNSTA Charleston) mission: To provide ordnance and waterfront management, quality service and logistic support in a secure, multi-service environment. WPNSTA Charleston and tenants employ 16,800 military and civilian personnel.



Of the Station's 16,307 acres 2,884 acres are improved, 12,508 unimproved, 329 semi-improved, and 526 classified as other. Unimproved areas include 8,703 acres forest, 244 acres freshwater ponds, 564 acres marsh and 18 miles shoreline.

Fourteen archaeological sites have been identified as eligible or potentially eligible for the National Register of Historic Places. Two areas, containing 11 contributing sites, are recommended for nomination as national historic districts.

## BACKGROUND

WPNSTA Charleston's Integrated Natural Resources Management Plan (INRMP) was revised in 2003. Cooperative agreements exist (1980) with U.S. Fish and Wildlife Service (USFWS), S.C. Dept. of Natural Resources (SCDNR), S.C. Dept. of Parks, Recreation and Tourism (SCDPRT) and National Park Service (NPS). The Natural Resources (NR) Program is part of the Environmental and NR Department. Program staff consists of a NR Manager and a NR Technician. Two Station committees work with the program: the C.O.'s Environmental Steering Committee and the Environmental Quality Subcommittee.

## PROGRAM SUMMARY

The NR program uses a variety of innovative and cost-saving methods to accomplish its mission. The primary focus is on resource management and protection, but environmental education and outdoor

recreation are emphasized. Extensive use is made of volunteer and supplementary labor while maximizing alternative funding sources. Outstanding projects within award period include: longleaf pine ecosystem restoration, increased invasive species control work, expanded participation in community outreach programs, reinstatement of timber harvests following hurricane recovery, enhancement of endangered species habitat, expansion of the prescribed fire/wildfire prevention program, and growth of outdoor recreation activities.

## ACCOMPLISHMENTS

**Overall Conservation Management** - Multiple-use management is emphasized by structuring work to provide benefits in several program areas when ever possible. Examples include: firebreaks re-worked for alternative use as horseback riding/hiking/mountain biking trails; wildlife food plots planted in utility line right-of-ways; and prescribed fire regimes manipulated to enhance wildlife habitat while reducing fire hazard around explosive ordnance areas.

Wildlife Food Plot In Utility Line ROW



GIS technology is now fully integrated into NR program activities. Data is available in digital format increasing efficiency and effectiveness. Production of maps, response to data calls and data analysis are exponentially faster, more detailed and in some cases more accurate than in previous years. In addition, planning construction, prescribed fire, tree planting, recreational trail construction, wetlands protection, non-game nest box maintenance and other activities have been greatly enhanced.

A budgeting system employing an "Environmental Program Requirements Module" facilitates long-range planning and early project submission to the S. E. Navy Regional Environmental Coordinator.

During FY 2004-06 the NR program drew on many alternative sources for funding and materials including S.C. Electric & Gas Corporation, National Environmental and Training Foundation, Navy Agricultural Outlease Account, DoD Forestry Reserve Account, WPNSTA Recycling, SCDNR, and Defense Reutilization and Marketing Service. The Lowcountry Resource Conservation agency, supplied 35 tons of wildlife food plot seed charging shipping costs only. Alternative sources of labor included Naval Nuclear Power Training Command's (NNPTC) Department of Transitional Personnel, Seabees, Naval Facilities Engineering Command Southeast and a large corps of NR program volunteers.

**Mission Enhancement** - The NR program enhances the installation's ability to carry out its mission by ensuring Station activities/actions are within both the letter and spirit of state and federal natural resources laws. Proactive oversight speeds project approvals and completions by preventing costly delays. It also fosters good community relations and productive working relationships with regulatory agencies.

**Land Use Management** - NR staff work closely with Station personnel to avoid, minimize or mitigate negative environmental impacts. Staff review site proposals for potential impacts on endangered species, wetlands and timber resources. An aggressive program controls erosion and sedimentation. Site visits are conducted checking silt fences, retention/detention ponds and buffer zones. When adverse impacts on jurisdictional wetlands cannot be avoided, appropriate permits are obtained and mitigation is completed. Station urban tree management first met National Arbor Day Foundation criteria for designation as an official Tree City USA in 1996. Continued urban tree work (planting, pruning, mulching, protecting and educational efforts) has resulted in re-certification every year since 1996 including FY 2004-06.

Significant cost savings have been achieved by revising ground's maintenance contracts. Reductions in cutting frequencies and areas mowed are saving nearly \$60,000 annually.

WPNSTA Charleston has a good working relationship with the Natural Resources Conservation Service,

U.S.D.A.'s Animal and Plant Health Inspection Service (APHIS), S. C. Forestry Commission, Berkeley Soil and Water Conservation District, and the Clemson Agricultural Extension Service.

**Forest Management** - On September 21, 1989, Hurricane Hugo devastated 9,500 acres of Station woodlands. The majority of the acres timber salvaged after the hurricane are now naturally regenerated loblolly pine and planted longleaf pine. In the decade following Hurricane Hugo prescribed fire was withheld in many areas because young pines were in a fire vulnerable sapling stage. By 2000 these trees matured to the point where prescribed fire could be reapplied.

With Command support the prescribed fire/wildfire prevention program has sustained the exponential growth it experienced in 2003. In 2004 the Standard Operating Procedure for the fire program was completely revised. Prescribed fire short courses for Station personnel are now conducted annually. During the award period four prescribed fire team members completed the S.C. Forestry Commission's Prescribed Fire Managers course. Combined, these efforts have resulted in a 58% increase in annual acres burned, with 6,636 acres burned in 2004-06.

Prescribed Fire



Longleaf pine ecosystem restoration efforts expanded during FY 2004-06. NR staff attended three workshops on longleaf pine management and met with Nature Conservancy and SCDNR biologists to discuss enhanced longleaf management. In both years teams of volunteers removed invasive loblolly and sweet gum from longleaf stands. This was followed by prescribed fire and mechanical clearing further reducing competing vegetation.

During FY 2004-06 timber harvests were reinstated in the hurricane recovered woodlands. A thinning/

tree harvest was carried out cutting 6,000 tons of pulpwood. This resulted in open stands of mixed long leaf and loblolly pine more suitable for red-cockaded woodpecker (RCW) foraging, enhanced wildlife habitat and increased accessibility for recreational purposes. This was the first of many thinnings identified for implementation in the Station's INRMP.

A number of unique areas are protected on Station. Around the NNPTC school wetland areas have been designated permanent buffer zones and will not be disturbed. Other protected areas include longleaf pine stands managed for RCW, bald eagle nest areas, several cypress ponds, and a pitcher plant bog.

Cooperative efforts in forest management included: U.S. Forest Service (USFS) work on RCW, forest inventories, stand prescriptions, and gypsy moth monitoring; S.C. Forestry Commission on prescribed burning and the Commission's Urban Forestry Division on Arbor Day/Tree City USA; The Nature Conservancy on mid-story control in RCW areas; Longleaf Alliance on longleaf pine silviculture; and Clemson Extension Service on timber management.

**Fish And Wildlife** - WPNSTA Charleston features a wide variety of wildlife species and habitats. The Station's coastal location results in a mix of salt, brackish, and freshwater wetlands while the low elevation and flat topography produces a mosaic of upland and wetland areas. Hardwood pockets and bay vegetation are scattered throughout the dominant pinewoods.

Federal or state listed threatened or endangered (T&E) wildlife species occurring on WPNSTA Charleston are RCW, bald eagle, American alligator, wood stork, and West Indian manatee.



**Red-cockaded Woodpecker**

Prior to Hurricane Hugo, 11 RCW clusters and 54 cavity trees were present on Station. After Hugo, only three cavity trees remained intact. In the months following the hurricane, USFS personnel installed 16 artificial cavities. In 1993 existing artificial cavities were renovated and new ones installed. In 2005 all cavities were surveyed and inventoried with a total of 22 artificial cavities in place along with four artificial start holes. The birds had

excavated four natural cavities and two start holes. In 2006 RCW management was further intensified with the installation of three new recruitment clusters with four new artificial cavities in each cluster. RCW habitat enhancement efforts were also continued in 2005 and 2006. Using heavy equipment (Gyro-Trac land clearer) 22 acres of encroaching mid-story in four RCW clusters were cleared and eight miles of new firebreaks constructed.

The American alligator, "threatened by reason of similarity," is a common Station resident. So common, they often turn up in inappropriate places: carpools, backyards, etc. To address this problem, a Nuisance Alligator Handlers Team, safely handles and transports an average of 15 nuisance alligators annually.



**Nuisance Alligator Handler & Gator**

Three nests and two pair of bald eagles are present on WPNSTA Charleston. Management practices follow USFWS's *Management Guidelines For The Bald Eagle In The S.E. Region*. Station personnel participate annually in national Midwinter Eagle Survey coordinated by the U. S. Dept. of Interior's Biological Resources Division.

Wildlife habitat is managed in a variety of ways including prescribed fire (3,300 acres annually), wildlife food plots (80 to 100 acres annually), mast producing trees (138 planted in 2004-06), wood duck nest box program (85 boxes) and non-game nest box program (six designs/100 boxes). In 2004-06 an additional 20 acres of wildlife food plots were planted as part of the S.C. Electric and Gas (SCE&G) Corporation's "Power For Wildlife" program. Landowners with a SCE&G right-of way (ROW) manage their ROW under an approved wildlife plan receiving \$1000 over a 3-year period.

Over 7,000 acres of land is available for hunting and fishing, of which 30% is open to the public. During the reporting period, over 3,300 outdoor enthusiasts purchased Station hunting/fishing licenses enjoying thousands of outdoor recreation use-days. A revision of hunting and fishing regulations occurred in 2004. Fees were reduced to \$20 for a hunting license. All

hunters must pass a hunter safety education course. A free fishing license is required for security purposes.

Notable during the award period was the complete recovery of the Station's wild turkey population from hurricane habitat damaged lows. Intensive habitat management has resulted in a thriving turkey population and the re-institution of wild turkey hunting on Station. In the two year period 34 tom turkeys were harvested.

Surveys identifying T&E species have been completed for mammals, reptiles, amphibians, and plants. Intensive surveys for neotropical migratory birds were conducted annually in FY 2004-06. In cooperation with SCDNR and USFWS biologists, NR staff conducted nesting surveys for least terns, bald eagles, colonial nesting wading birds and ospreys.

**Other Natural Resources** - WPNSTA Charleston provides a large outdoor recreation program. A Patron Pass program was instituted in 2004 to facilitate public (non-DoD id holders) access to the Marrington Outdoor Recreation Area. Resources available include: 5 major picnic areas, a 6 mile jogging/skating/street biking trail, a horse stable, fishing piers, boat ramps and a "primitive" camping area. No off-road driving or ATV use is permitted. The Station's Watchable Wildlife Area features 2 wildlife observation towers, 5 wetland boardwalks, a 1-mile, interpreted nature trail and 2 miles of associated walking trails. Four brochures facilitate area use. During FY 2004-06 the existing 12.5 mile long mountain bike trail was maintained by adding two additional foot bridges and seven wetland boardwalks. Annual fall "Swamp Sweat" and "Spring Fling" mountain bike races were held as well as the "Fleet Feet" cross country road race.



2005 Mt. Bike Race Poster

Outdoor recreation is facilitated by a tripartite agreement with the NPS and SCDPRT. No check-

points limit access to Marrington Outdoor Area so DoD id holder visitor numbers are not available. General public passes were sold to 271 users.

**Invasive Species Control and Pest Mgt.** - Invasive species control was significantly expanded during FY 2004-06. Following meetings with staff from Animal and Plant Health Inspection Service, SCDNR, Nature Conservancy and staff attendance at the National Wild Pig Conference, a feral hog control program was initiated. WPNSTA Charleston hunting policies were revised authorizing: deer hunters to take hogs; a special hog hunting season; and a hog trapping program. Combined these efforts resulted in 100 hogs taken and a significant reduction in the hog population. These efforts will continue into the foreseeable future.



In regard to invasive plant species, cooperative efforts with the SCDNR's Aquatic Pest Plant Program were initiated in 2006. A management plan to control common reed (*Phragmites* spp.), alligator weed (*Alternanthera philoxeroides*), water hyacinth (*Eichhornia crassipes*), water primrose (*Ludwigia hexapetala*), hydrilla (*Hydrilla verticillata*) and others was agreed on. In 2006 over 400 acres of invasive aquatic plants were treated with an aerial application of herbicide. In addition, ground herbicide was applied to 12 acres controlling kudzu (*Pueraria lobata*), Chinese privet (*Ligustrum sinense*), giant cane (*Arundo donax*), Chinese tallow (*Sapium sebiferum*) and silverthorn (*Elaeagnus pagens*). As part of the integrated pest management plan non-pesticide alternatives are also used. Heavy mulching with natural materials and mulch mats of recycled tires significantly reduces weed control around urban trees. Additional control of aquatic invasive plants is carried out using biological (grass carp), mechanical (mowing) and physical (steep banks) controls. WPNSTA Charleston is participating in surveillance of Lyme's Disease and West African Nile Virus.

Deer ticks and dead birds are delivered to Navy Preventive Medicine Program for testing.

**Conservation Education** - NR regulations are set forth in WPNSTACHASNINST 5090.12H and the INRMP. Commissioned officers, military and civilian police officers, Station NR personnel and state and federal conservation officers are authorized enforcement personnel.

During FY 2004-06, six ATV safety classes certified 13 students. Thirteen hunting and boating safety courses certified 502 students. All courses are taught by NR staff, are free and open to the public. Station personnel worked extensively with off-Station groups including Scouting groups, elementary and middle schools during FY 2004-06. Additional off-Station interactions included: (1) facilitated/ hosted bi-annual regional orienteering meets for high school ROTC units; (2) race coordination and trail work days with Coastal Cyclist mt. bike club; (3) annual participation in the Trident United Way's "Day of Caring" volunteer event; (4) participation in the Berkeley County "Kids Who Care," environmental ethics school program; (5) participation in S.C. River Sweep, an annual state-wide litter clean-up/education event; (6) staffing support for SCDNR's environmental education booth at the S.E. Wildlife Expo; (7) participation in the National Environmental and Training Foundation's "National Public Lands Day"; and (8) as a sponsor/host location for the SCDNR's "Take One, Make One" program introducing young people to recreational hunting.

**Community Relations** - During 2004-06 forty-two NR articles were published in military and civilian media. NR personnel are involved with professional organizations including National Military Fish and Wildlife Assoc., Quality Deer Mgt. Assoc., S.E. Deer Study Group, The Wildlife Society, S.C. Prescribed Fire Council and Society of American Foresters.

Affiliations with conservation organizations include: Audubon Society, National Wildlife Federation, National Arbor Day Foundation, Lowcountry Open Land Trust, S.C. Coastal Conservation League, Edisto River Canoe and Kayak Commission, Foothills Trail Conference and the S.C. Coastal Cyclists. In addition to those already mentioned, frequent contacts occur between Station staff and personnel of NR

organizations including: National Marine Fisheries; U.S. Army Corps of Engineers; S.C. Dept. of Health and Environmental Control; S.C. Office Coastal Resource Mgt; and Charleston Raptor Center.

WPNSTA Charleston's outstanding NR Volunteer Program has a core group of 36 individuals with 55 other volunteers participating in special events. Volunteers are annually recognized at an appreciation luncheon receiving letters of appreciation from C.O. and NR Mgr. and gifts from local businesses. NR volunteers logged over 15,000 hours in 2004-06.



**Longleaf Pine Restoration Team**

**Environmental Enhancement** - The NR program contributes significantly to quality of life on Station and surrounding communities via wildfire prevention, nuisance animal control, environmental education, outdoor safety, and enhanced esthetic values. The program professionally manages the available resources while supplying expanding outdoor recreational opportunities and increasing community awareness of NR values.

**Natural Resources Compliance Program** - WPNSTA Charleston personnel meet regularly with state and federal regulators. An annual meeting is held with USFWS and SCDNR to review INRMP soliciting comments and feedback. NR staff works with regulators when Station projects have potential impacts on wetlands or T&E species. Good working relationships exist with staff from the USFWS, U.S. Army Corps Engineers, National Marine Fisheries Service, SCDNR, SCDHEC and SCOCRM.

The four primary funding sources for NR program in 2004-06 fiscal years were: (1) WPNSTA Charleston NR budget -\$726,000; (2) Navy Forestry Budget-\$128,500; (3) Navy Forestry Reserve Program \$179,908 and (4) Fish & Wildlife fees receipts-\$4,700.