

**2021 Secretary of Defense Environmental Award**  
**NAVAL WEAPONS STATION YORKTOWN, VIRGINIA**  
**Natural Resource Conservation – Large Installation**

**INTRODUCTION**

The primary mission of Naval Weapons Station Yorktown (hereinafter referred to as the station) is to provide responsive, quality support for explosive ordnance receipt and storage, maintenance, logistics, research and development, and support services; expeditionary logistics training and operations; warfare training for Sailors, Marines, and other Services; and to serve as a premier recreational destination for service members and dependents.

The station employs approx. 2,440 active duty military, 1,020 federal civilian employees, 532 contractors and an estimated 235 military families as part of the Lincoln family housing community. The station hosts 37 tenant commands to include the Navy Munitions Command Atlantic, Naval Ophthalmic Support and Training Activity, Marines Corps Security Force (MCSF) Regiment, Fleet Logistics Support Group, Forces Support Surveillance Center (FSSC), Naval Expeditionary Medical Support Command, Defense Logistics Agency, Naval Surface Warfare Center, Explosive Ordnance Detachment Mobile Unit Two, Navy Cargo Handling Battalion One and 19 departments.

The station's area of responsibility is a complex of four noncontiguous sites encompassing the main site, Cheatham Annex (CAX), Defense Fuel Supply Terminal (DFST) Yorktown, and the Relocatable Over-The-Horizon-Radar (ROTHR) New Kent.

In total, these areas cover more than 13,000 acres of land, within the state of VA's Chesapeake Bay watershed.

**BACKGROUND**

Through the station's INRMP, land, forests, water, flora, and fauna resources are directly or indirectly managed with mission activities, habitat conservation, outdoor recreation, and environmental issues in mind. The INRMP is compliant as a result of a comprehensive review for operation effect between the Navy, United States Fish and Wildlife

Each area encompasses a wide variety of terrestrial and aquatic ecosystems that are not only vital to the Chesapeake Bay, but are critical to the military mission, local economy, and recreational opportunities. Existing land uses support 200 ordnance storage magazines, 1,500 support buildings, 22 military training areas, three small arms ranges, two heliports, an ordnance supply pier, a supply pier, and an extensive network of roads and utilities.

Natural Resources (NR) attributes include: 7,213 acres of forests, 2,602 acres of wetland, 186 acres leased for agricultural, over 37 miles of shoreline, 70 early successional habitat areas, 13 vernal pool habitats, 9 active environmental restoration program sites, 8 significant ecological communities, 7 tidal salt marshes and 4 bald eagle nests. Protected flora and fauna species known or likely to occur within the station's area of responsibility include 12 federally listed Threatened or Endangered (T&E) species, 4 state listed T&E species, and 96 additional federal and state species of greatest conservation need (SGCN).

Critical habitat has not been designated for occurring federally listed T&E species as the Integrated Natural Resources Management Plan (INRMP) implementation has demonstrated a direct benefit to these species.

Service (USFWS), National Oceanic and Atmospheric Administration (NOAA) - National Marine Fisheries Service (NMFS), and VA Department of Wildlife Resources (VDWR). Mutual agreement signatures for INRMP implementation were received 17 Jul 2018 from VDWR and 13 Sept 2018 from USFWS with final approval by the station's Commanding Officer on 9 Oct 2018. To further support INRMP implementation, a Supplemental Environmental Assessment and Finding of No Significant Impact was completed and endorsed by the Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic Region (MIDLANT) Commanding Officer on 18 June 2020.

The station has made great progress towards developing cooperative agreements in support of the INRMP. On 29 Sept 2020, a cooperative agreement between NAVFAC MIDLANT and the VA Institute of Marine Sciences (VIMS) was developed to support an INRMP project requirement for nearshore conservation and stewardship. This marked the first Sikes Act cooperative agreement for the station in over three decades. Two additional cooperative agreements are under development with VA Department of Transportation for stream stabilization and restoration activities and prescribe burn operations and assistance with the VA Department of Forestry.



*VDOT EV contracts performing stream bank erosion hazard index surveys onboard the station.*

Using the Navy’s NR Conservation Metrics reporting system, the INRMP is reviewed annually by departments, tenants, and the Commanding Officer to include Sikes Act agency partners from the USFWS, VDWR, and NOAA. During the achievement period, metric reviews featured 13 INRMP project requirements in execution totaling approx. \$604,360.81; 51 NR compliance determinations and/or Section 7 Endangered Species Act Consultations; as well as over 300 man-hours enforcing hunting, fishing, boating, and environmental laws onboard the station. As a result of the 2019/2020 metric reviews, our Sikes Act agency partners mutually agreed INRMP objectives “*continued to meet federal and state agency conservation goals*” while the station’s Commanding Officer determined INRMP implementation “*directly supports and enhances the station military*

*missions with no loss to military-related operations or training activities*”.

Upon completion of each annual review, INRMP objectives, activities, and projects were modified to meet the immediate concerns and needs of NR management and military missions. This “adaptive management” approach to INRMP implementation was further facilitated by an Environmental Management System (EMS) following the “*Plan-Do-Check-Act*” process, which has the goal of meeting environmental requirements through continual improvement, and achieving both mission support and environmental excellence.

The NR program falls under the supervision of the Environmental Director within the NAVFAC MIDLANT Public Works Department (PWD) Yorktown. The NR program is staffed with two highly qualified environmental professionals with an exceptionally broad range of institutional, certification, field biology, and conservation expertise. The NR staff actively pursues a team approach supported by personnel from PWD, Environmental, Facilities Management Division, Capital Improvements, Real Estate, Community Planning, Explosives Safety, Security Forces, Port Operations, Public Affairs, Legal Counsel, and Morale, Welfare, and Recreation (MWR). INRMP requirements are further enhanced by regional level media managers with support in contract development and management; assisting with regulatory consultations and permitting; and project execution. NR staff value every interaction with soldiers, trainers, range coordinators, planners, and engineers as potential military mission-NR conservation conflicts or constraints have been avoided without negative impacts to the station’s mission or its valued NR.

NR staff also actively participate in a number of committees and boards such as, the Site Work Induction Board, Environmental Restoration Advisory Board, Outdoor Recreation Committee, Tenant Environmental and Safety Board, Command In-doctrine Training, Department of Defense (DoD) Chesapeake Bay Action Team, National Fish and Wildlife Management Association, DoD Integrated

Pest Management Coordinator Community of Practice, VA Sentinal Landscape Team, York River and Small Coastal Basin Roundtable, and VA Interagency Oyster Restoration Team.

## ACCOMPLISHMENTS

### *Cooperative Ecosystem Management*

The York River is one of VA's most diverse marsh-estuarine ecosystems located near the mouth of Chesapeake Bay with 14 miles of shoreline that bounds NWS Yorktown and CAX. Naval explosive safety quantity distance arcs and surface danger zones occupy approx. 1,482 acres of nearshore area within the York River supporting approx. 45 ship movements and 23,000 tons of ordinance annually.

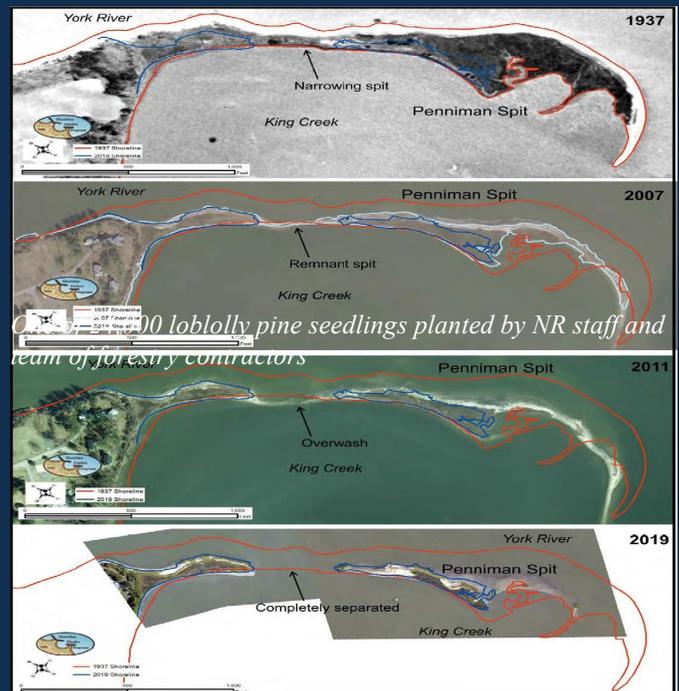
As a result of the most recent INRMP review for operation and effect, the NWS Yorktown has been deeply involved in fostering partnerships to leverage Navy nearshore conservation requirements and INRMP implementation to help achieve federal-state restoration goals for the York River consistent with the 2014 Chesapeake Bay Watershed Agreement and Executive Order 13508 that calls for federal agencies to lead efforts to protect and restore the Chesapeake Bay watershed.

During 2019 and 2020, NWS Yorktown worked collaboratively with VIMS and other partners to develop a unique ecosystem-based project to restore and protect coastal land within the station's nearshore areas. VIMS was awarded a Chesapeake Bay Trust grant totaling 50K to prepare a nearshore habitat restoration design and monitoring plan for CAX's Penniman Spit Marsh. This degraded land fringe has the potential to provide critical ecosystem benefits and military training and/or recreation opportunities. An adaptive shoreline protection and oyster restoration plan for NWS Yorktown piers was also launched using Chesapeake Research

Consortium grant funds totaling \$40K. Environmental conditions along the piers are representative to eroding shorelines along the York River with an erosion rate of 1 foot per year. Further degradation of the shoreline could destabilize the piers, cause large block failure and damage to infrastructure, land loss, and impede performance of mission activities.

Subsequently, these projects led to the submittal of a DoD Readiness and Environmental Protection (REPI) Challenge project. By partnering with VIMS and the National Fish and Wildlife Foundation, the REPI project was awarded \$1 million for the first year. The project will create living shoreline oyster reefs to stabilize over 900 feet of shoreline and restore 3.45 acres of Navy land. While serving as natural breakwaters, the biogenic reefs innovative design incorporates physical security function system concepts to reduce the vulnerability of unauthorized access to NWS Yorktown, piers, and restricted surface waters.

The combination of these projects benefits the overall ecological functions and aspects of the York River by bolstering oyster populations, preserving shoreline, restoring habitat, improving water quality, and enhancing the Stations resilience and force protection which also equates to more oysters available for commercial harvest from privately leased oyster grounds.



*Penniman Spit originally encompasses 14.7 acres in 1937 and now only 2.04 acres, having lost 86% of its area from sea level change and costal storm events.*

This pioneering project partnership directly supported the development of the Lower York Oyster Recovery Plan and Middle Peninsula Habitat

Focus Area Worksheet which included a team of representatives from the National Oceanic Atmospheric Administration (NOAA), U.S. Army Corps of Engineers' (USACE) Norfolk District, The Nature Conservancy, The National Park Service, The Pew Charitable Trusts, Chesapeake Bay Foundation, Christopher Newport University, VIMS, VA Marine Resources Commission, VA Commonwealth University, and DoD Chesapeake Bay Program.

### ***Forest Management***

The priorities of NWS Yorktown's land uses are sustainable mission support and stewardship. As a result, its forest management is not dictated by traditional commercial forest practices that utilize yields of forest products for commercial gain. Instead, NWS Yorktown strives for ecologically sustainable and adaptive management of its forest to maintain the continued supply of desired ecosystem services, including realistic training settings and mission planning support, as well as maintenance of native biological diversity and protecting water quality within the community watershed.

In Dec 2019, the first Forest Management Plan (FMP) in over 15 years was completed. The FMP describes the commercial timber value, forest conditions, and management of 273 stands totaling 7,365 acres at NWS Yorktown covering approx. 71 percent of the land area, and 39 stands totaling 1,400 acres at CAX covering approx. 61 percent of the land area.

NR staff and a team of contractors planted over 24,000 premium VA Department of Forestry loblolly pine seedlings across 55 acres designated for reforestation. To promote forest health and protect significant ecological areas on the station, efforts to control invasive plant species occurred in eight different stands, approx. 75 acres were treated for eradication. Over three miles of forest access roads and firebreaks were maintained or created for wildland fire response.

In Sept 2020, the station prepared its first Wildland Fire Management Plan (WFMP). Using a geo-spatial fire planning approach and natural fuel load assessment modeling, the WFMP guides wildland

fire management operations under the NR management policies issued by the DOD, as well as specific instructions set forth in Chief of Naval Operations Instruction 5090.1, *Environmental Readiness Program*. The WFMP provides a two-fold purpose: (1) to coordinate wildland fire response/control between organizations; and (2) to facilitate the use of prescribed fire as a tool to achieve required INRMP ecosystem management goals. As such the WFMP established 263 management blocks totaling 3,129 acres where prescribed fire may be used as a management tool. The WFMP further specifies support from NAVFAC MIDLANT departments, external agencies, and local, state, and federal firefighters to implement wildland fire management activities onboard NWS Yorktown through the use of cooperative agreements.

### ***ROTHR Land Use Management***

At ROTHR New Kent, NR program staff developed a Biological Evaluation to support an Endangered Species Act (ESA) section 7 consultation; Jurisdictional Wetland Determinations for Section 404 Clean Water Act permitting; and a Vegetation Management Plan to harvest approx. 9 acres of forested land and install a new radiation hazard safety fence, with maintenance trail, in support of the Forces Surveillance Support Center (FSSC) mission.

The ROTHR system is located approx. 53 miles from the station on 653 acres of property leased by the Navy in New Kent, VA. Established in 1987, the ROTHR provides wide-area air and sea surveillance to detect aircraft and ships/boats for military and law enforcement agencies in support of the Office of National Drug Control Policy.

To meet FSSC requests, a timber harvest agreement between the landowner and the Navy was coordinated harvesting trees at no cost to the government, saving an estimated \$80K in tree removal costs. This action facilitated clear transmission of radio frequencies from an adjacent transmitter site, thereby enhancing the mission by allowing for greater detection of increasingly smaller military threats and illegal activities in the Gulf of Mexico and Caribbean.



*Transmitter antenna-array and agriculture crop at ROTH New Kent, Virginia.*

Additionally, monitoring and technical assistance efforts at ROTH New Kent continued to ensure farming practices at the 186-acre agricultural crop out lease were in accordance with VA Department of Conservation Resources Soil and Water Conservation Plan requirements. This agricultural out lease reinforces the natural buffers created to enable FSSC operations without encroachment while also generating revenue to offset the costs of other land lease agreements and funds for minor land improvements.

### ***Storm Water Management***

Performed monthly construction site inspections to ensure compliance with VA Stormwater Management and VA Water Protection permits. NR staff collaborated with Facilities, Engineering, and Acquisition managers as well as federal and state regulators to remedy construction contractor erosion control and sedimentation issues affecting NR.

### ***Grounds Maintenance***

Monitored grounds maintenance contracts and practices to ensure environmentally beneficial landscaping, wildland fire fuel load reduction, and enhancement of pollinator habitats. Milestones achieved in regards to reducing landscape maintenance costs included the conversion of a 2-acre wildflower pollinator meadow; selling more than 40 firewood collection permits for personal use, and negotiating time of year grass cutting restriction specifications into the stations grounds maintenance contracts for the benefit of native plants, migratory birds, and pollinator species.

### ***Invasive Species Management***

Within a six-week period, more than 5,000 invasive plants, shrubs, and trees species were cut and treated to prevent regrowth in significant ecological areas.

### ***Successional Habitat Management***

Managed successional habitats across 214 acres of land by NR and PWD Yorktown transportation personnel mechanical mowing, disking, grading, and/or seeding. These actions benefit and aid in conservation of herpetofauna, migratory birds, pollinators, and game animals.

### ***Fish and Wildlife Management***

An important function of the NWS Yorktown NR program is surveying and monitoring a full spectrum of native wildlife species. Exemplary accomplishments include:

- Deploying acoustic data loggers, documenting the presence of 13 frog species at CAX, including one previously undocumented species.
- Surveying 10 lakes and ponds assessing the abundance and population demographics of sport fish as well as aquatic/algae vegetation, water chemistry and fish tissue containments. Survey results indicated that all lakes and ponds supported viable fish assemblages. Of the 3,217 fish collected, 206 fish were tagged and released with 37-tagged fish reported by anglers to date.
- The fish tagging initiative has been an excellent opportunity to involve the station anglers with an interest in conservation to assist the NR conservation program in monitoring growth rates and to determine if changes to management practices are needed.
- Performed diurnal and nocturnal herpetofauna surveys in 2020, documenting 42 species, including three previously unconfirmed species two new occurrences of spotted turtle, a species petitioned for listing under the ESA.
- Supported VDWR annual monitoring programs and VA Wildlife Actions Plans using in-house and volunteer support to conduct wild turkey sighting surveys; mid-winter waterfowl surveys; American woodcock singing-ground surveys; deer management and chronic wasting disease

sampling; as well as Audubon Christmas bird counts, and U.S. Geological Services North



*Public Works Commander Jonathan Horner and DoD Partners for Amphibian and Reptile Conservation National Coordinator Christopher Petersen during herpetofauna surveys on the station.*

- Expanding hunting and fishing to allow access to training range areas and ordinance supply piers previously off limits to outdoor recreation. Due to security requirements, public hunting and fishing privileges are restricted to limited participation. Regardless hunting and fishing is an enjoyable and popular form of outdoor recreation for the station's personnel and authorized guests. A total of 890 hunting and fishing permits were sold in 2019-2020. There are 19 designated hunting areas accommodating up to 200 hunters per day. Management hunts are conducted for deer, turkey, and small game approx. 29 days annually while both fresh and saltwater fishing are available throughout the year to include several MWR sponsored fishing tournaments.
- Preparing a Natural Heritage Assessment and Milkweed Survey report from field surveys for threatened and endangered species protected by state and federal law as well as rare species and significant natural communities. The report identified 29 natural heritage resources represented by a distribution of 480 plant and animal species observed on NWS Yorktown, CAX, and DFST.
- Identifying and mapping eleven bird areas to ensure the protection of essential place migratory birds are known to occur on the station.

### ***Conservation Education and Outreach***

NR staff actively participated in several conservation education and outreach opportunities both on and off the station. Exemplary accomplishments include:

- Collaborating with NAVFAC MIDLANT Design and Construction team in planning for priority Navy Munitions Command (NMC) Magazine Recapitalization MILCON addressing early in the decision-making process requirements for timely regulatory agency consultations, NR protection, and potential mission constraints.



*implementation in support of magazine recapitalization project on the station.*

- Supporting completion of a MWR Interpretive Nature Trail featuring six custom signs describing the common flora and fauna at CAX. The signage also described outdoor safety to include venomous snakes and toxic plant species a recreational user may encounter. Twelve new fishing regulations signs were also placed at each of lakes, ponds, and piers.
- Preparing a poster presentation show casing NWS Yorktown NR program with support from U.S. Fleet Forces Environmental Outreach Branch. Poster will be used as an exhibit for public NR conservations activities and events.
- Partnering with the Williamsburg Bird Club in coordinating the 2020 VA Society of Ornithology Annual Meeting field trip at CAX.
- Supporting Old Dominion University research on tick species and tick-borne diseases, such as Lyme disease, Ehrlichiosis, and Rocky Mountain

Spotted-Fever, effecting VA and military training.



*Interpretative nature trail signage at CAX's Penniman Lake*

## **ENVIRONMENTAL ENHANCEMENT**

Accomplishments over the achievement period led to improvements in NR conservation and quality of life for station personnel and the surrounding community. Water quality and wildlife diversity within local watersheds improved through sustainable land and forestry management best practices. Annual INRMP metric reviews led to a more refined EV Protection and Enhancement sections by incorporating EMS, National Environmental Policy Act (NEPA), and pollution and prevention medias in greater detail. Fish and wildlife management actions led to an increased knowledge on species occurrence, protected status, and their unique natural communities, supporting improved awareness and conservation under the INRMP. The NR program accomplishments described enhanced EV stewardship and benefited the overall station's mission through proactive assistance with facility management projects, outdoor recreation, and critical mission execution.

## **MISSION ENHANCEMENT**

Supporting the mission took on many forms during the achievement period. One specific action was the successful permit consultation between the station and NOAA Fisheries Services allowing the Navy to extend work beyond the USACE Individual Permit time-of-year restriction during the 2019 ordnance

handling dredging maintenance cycle. Other direct support actions included utilizing the INRMP activities to enhance mission training and reducing land management costs; proactively engaging with planners, engineers, tenants, and conservation SMEs to resolve military mission-NR conflicts or constraints; working with community planners to minimize encroachment and ensuring “no net loss” of lands or buffer spaces. Indirect support actions primarily occurred during the EV review and site approval process by ensuring all federal and state regulations were met through NEPA reviews, Section 7 ESA consultations; and collaboration with many external agencies and institutional stakeholders.

Finally, there were subtler means of supporting the military mission by continually striving to improve relations with tenants, cooperating agencies, academic institutions, and the surrounding community.