

2020 SECRETARY OF DEFENSE ENVIRONMENTAL AWARDS

NAVAL STATION GREAT LAKES

NATURAL RESOURCES CONSERVATION - TEAM

Introduction

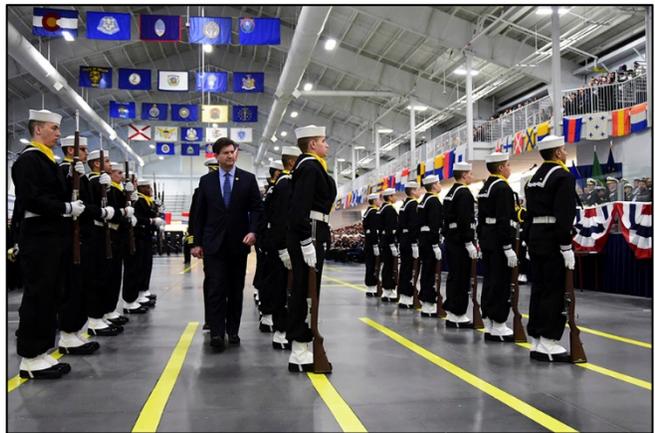
Opened in 1911, Naval Station Great Lakes (NSGL), the Quarterdeck of the Navy, is the Navy's largest training installation and the home of the Navy's only Boot Camp. Located in the Nation's heartland, overlooking Lake Michigan, the installation spans over 1,600 acres encompassing more than 1,150 buildings, delivering superior base operating support services to 50 Department of Defense tenant commands with a workforce population of over 20,000 Sailors, Marines, Soldiers, and DoD civilians, in addition to family residents who live on the installation.

Over the course of fiscal year 2019, Naval Station Great Lakes delivered unrivaled services and unsurpassed quality of life to the Fleet, Fighter and Family. Morale, Welfare & Recreation served more than 1.8 million patrons; Fleet and Family Service Center provide compassionate care and counseling to thousands of

Service Members and their families, from relocation and transition assistance, parental and family counseling to sensitive sexual assault and domestic violence response services. Food Service served millions of Go for Green nutritious meals and earned a 98% satisfaction rating; Unaccompanied Housing scored a perfect 100% in program operations; Public Works sustained



More than 6K solar panels installed on top of a landfill on Naval Station Great Lakes produce around 2 megawatts of energy, enough to power approximately 1,000 homes.



Representative Schneider (IL-10) is the Reviewing Official during Recruit Graduation at the Atlantic Fleet Drill Hall.

energy reduction standards; and Naval Security Force and Fire & Emergency Services responded to more than a combined 7,400 emergency calls for service.

Naval Station Great Lakes takes great pride in serving our Service Members and their families, in providing the most efficient and effective base operating services, enabling the National Defense Strategy in delivering highly trained new Sailors to the Fleet, while simultaneously ensuring the safety, security and wellness of our population - making Great Lakes the United States Navy's premier installation.

Great Lakes is comprised of Sailors and civilians who carry out the command's mission by knowing their jobs, owning their programs and always doing their best with uncompromising trust and integrity, and inspiring innovation; thereby enabling sustained fleet operations by the forging of 38,963 citizens into Sailors and the technical training of 11,120 enlisted surface warfare specialists. Bold, but simply stated, the Navy could not put ships and submarines to sea, or launch aircraft without the enlisted Sailors being trained at Naval Station Great Lakes.

Background and Position Descriptions

Naval Station Great Lakes (NSGL) has a wide range of diverse ecosystems to include wetlands, urban forests, ravines, panne, and sand dune communities. NSGL for designation purposes is sub-divided into two ecosystems: approximately 15-acres of freshwater estuary delta that includes the beach, sand dunes, and lakefront wetlands (panne); and approximately 45-acres of lake plain prairie and wet-mesic that includes natural upland areas, urban landscapes, and riparian areas. There are approximately 19 acres of wetlands on NSGL that contribute ecosystem services such as water purification, groundwater replenishment, natural flood control, and diverse habitat.

The NSGL panne holds five State-listed listed plant species and is important in providing habitat for shorebirds and other avian-fauna, small mammals, and insects. Invasive exotics, predominantly *Phragmites australis*, are the primary threat to the NSGL panne community. Monocultures of this species and other invasive exotics rarely support more than a few species of generalist animals, leading to a further reduction in regional biological diversity.



Naval Station Great Lakes Harbor Island and panne ecosystem (circa 2012).

The sand dune communities also provide valuable foraging habitat and refuges for shorebirds and songbirds. Management of these habitats is needed to protect natural resources due to human disturbance and beach erosion from incursion of rising lake water levels and high wave action overflowing the once protective outer break wall.

Environmental stressors on Lake Michigan cause chronic negative impacts on biodiversity. Coastal development, shoreline erosion, pollutants transported down Pettibone Creek from industrial land, rising lake levels due to climate change, and introduction of woody invasive species contribute to the degradation of NSGL's shoreline ecosystems. Lake Michigan is currently at record high levels and in the past 6 years has risen over three feet.

These environmental stressors have significant impacts on shoreline species, specifically the state-endangered Common Tern (*Sterna hirundo*). The Natural Resources Team for fiscal year 2019 was comprised of members from several organizations who partnered together to

successfully execute habitat restoration for the Common Tern. The team included members from Naval Station Great Lakes Environmental Department (EV): Matthew Wollert, Environmental



Naval Station Great Lakes Natural Resources Team with the Common Tern (*Sterna hirundo*) nesting platform.

Operations Manager, and Taylor Bozman, Natural Resources Specialist. The Environmental Department provided base support for partnering agencies and was the lead for recording observations of species success throughout the season. Supporting EV was Naval Station Great Lakes Morale, Welfare and Recreation (MWR): Doug Derginer, Harbor Master, and Roger Szczypta, Marina Maintenance Worker, who assisted in towing and anchoring the nesting platform into the harbor. The Installation's Environmental

Department and MWR have not historically joined for large natural resources projects, but in fiscal year 2019 this was crucial for the success of the project. Naval Station Great Lakes also partnered with the state regulatory agency, Illinois Department of Natural Resources' (IDNR) Brad Semel, Endangered Species Recovery Specialist, who provided all recycled materials for the project and worked in cooperation with EV to gather observations and data throughout the breeding season. John Nelson, Natural Areas Preservation Specialist, from the Illinois Nature Preserves Commission assisted in the design and construction of the platform.

Summary of Accomplishments

Fish and Wildlife

The significance of NSGL sand dunes and Harbor Island habitat for the state-endangered Common Tern (*Sterna hirundo*) is vital for the perpetuation of the species in Illinois. No other site in the state supports a nesting population of this species and Naval Station Great Lakes has been the only successful nesting colony of Common Terns in Illinois since 2000. Over 50% of all terns hatched in Illinois since 1936 have fledged from this colony.

This nesting colony has encountered several challenges within the last decade, including destruction of habitat, human disturbance, and predation on Naval Station Great Lakes. Previous conservation efforts included establishing a



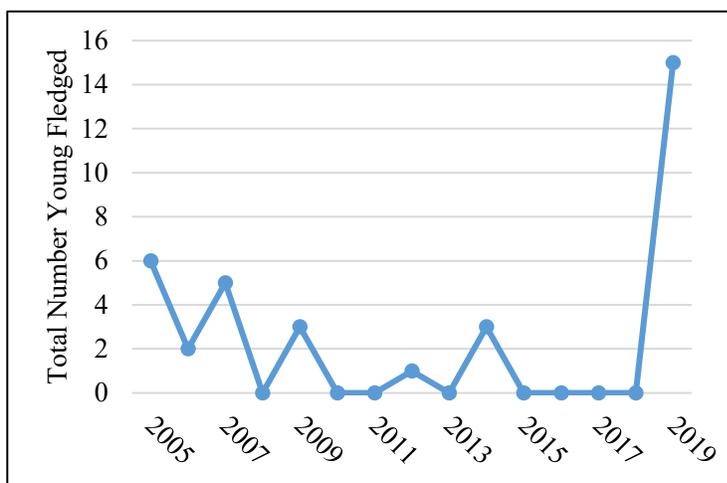
designated bird sanctuary consisting of an enclosed electric fence area as a protected nesting habitat in 2001. This effort has been unsuccessful since 2005 due to mammalian and avian predation on the young chicks. Since 2010 the island has succumbed to a combination of flooding from high lake water levels and overgrown with *Phragmites australis*, therefore no longer a viable habitat for shore birds.

From 2014 to 2018, the Common Tern has been unable to successfully breed or nest on NSGL’s sand dune habitat. In response, Naval Station Great Lakes Environmental Department partnered with personnel from the Illinois Department of Natural Resources (IDNR), the Illinois Nature Preserves Commission, and Moral, Welfare and Recreation (MWR) to anchor a nesting platform in the NSGL harbor in fiscal year 2019. This allowed NSGL to create additional nesting habitat for stated-listed species in support of the INRMP goals and objectives.

Illinois Department of Natural Resources personnel provided recycled materials from Moraine Hills State Park to construct the nesting platform. A layer of fabric was stapled on top of the wooden base and sand was placed on top. Side rails were installed with a wire fencing to deter chicks from falling into the water. Common Tern decoys were placed onto the platform, along with natural vegetation and small logs. The use of recycled materials and working in cooperation with Illinois Department of Natural Resources saved Navy funding over \$35K. MWR staff provided an anchoring system and assisted in towing the platform into the harbor.



Common Terns produce 1-3 eggs per nest and are documented to have 1-2 broods. This photo shows one of the successful nests on the NSGL platform in 2019.



The total number of Common Tern young fledged on Naval Station Great Lakes from 2005 to 2019, with a 150% increase in survival since 2005.

The 10’ x 12’ platform was anchored into the harbor in early May 2019. Throughout the breeding season, Illinois Department of Natural Resources and NSGL personnel documented the success of the platforms as nesting habitat. Observations were made via binoculars and by canoeing out to the platform to include number of adults, nests, eggs, and fledglings. There were 13 nesting attempts, 32 eggs laid, and a total of 15 young

fledged. These numbers are an 150% increase in fledgling success since 2005. The floating platform also gave insight into a new methodology to deter mammalian predators found inland. Naval Station Great Lakes plans to collaborate with Illinois Department of Natural Resources and The Boy Scouts of America during the 2020 breeding season to construct two additional platforms in support of an eagle scout project. It is anticipated that this increase in habitat availability will correlate with an increased number of nests and young fledged in future breeding seasons.

The proximity of the nesting platform in the NSGL harbor allows for bird watching by military personnel who kayak, boat, and canoe in the harbor. The design of the platform has been used by Wisconsin Department of Natural Resources for the Common Tern and could successfully be implemented for various shorebird species on other installations.

Mission Enhancement

During previous breeding seasons, the Common Tern adults have attempted to nest on the harbor's boat docks, utilized significantly by Navy and MWR personnel for mission readiness activities. In 2009, the terns nested on the Navy's platform boat and because of the species' state-endangered status, the boat could not be moved or used during 2009 until all nests had been abandoned for the year. This impeded significantly on the Naval Station's Harbor Master in executing his duties. The installation of the platforms deterred the Common Terns from nesting on any mission essential boats in the harbor by providing considerable habitat.

The nesting platform project did not hinder any mission essential activities and reduced costs to the Navy by \$35K. The success of this nesting platform allowed full compliance and stewardship with natural resources related regulations for state-listed species. By creating artificial habitat on the Installation, there was less restrictions placed on beach habitat utilized by sailors and recruits that have the potential to be fenced off if Common Tern nests were found.

Invasive Species Control and Pest Management

Naval Station Great Lakes shoreline contains sensitive plant communities in the wetlands, the panne, and the coastal dune habitats. Management of these diverse areas are integral to maintaining biodiversity on the installation of both flora and fauna. Currently, Common Reed Grass (*Phragmites australis*) poses the greatest threat to native vegetation and shoreline habitat on NSGL. Naval Station Great Lakes Environmental Department identified approximately 19 acres of dense infestation of *Phragmites* in fiscal year 2019 across the Installation. These areas include stands over



Initial mechanical removal of *Phragmites australis* in August 2019 by grounds maintenance personnel.

12-feet of aboveground biomass. In support of EO 13751 and by utilizing NSGL’s grounds maintenance contract, 1.8 acres were mechanically removed on the shoreline to improve this habitat for migratory bird species, such as the Common Tern, and increase biodiversity of native flora in August 2019. This project successfully removed 25% of the total acreage on the lakefront and harbor areas. The mechanical removal of this species allowed Naval Station Great Lakes to avoid the initial herbicide spraying of the aboveground plants, reducing total herbicide sprayed by approximately 33%, and allow for the only herbicide application to be spot treatments after cutting.

Community Outreach

Naval Station Great Lakes Environmental Department worked closely in collaboration with Illinois Department of Natural Resources personnel to maintain and record nesting success of the Common Terns in 2019. The continued partnership with federal and local regulators is a priority for Naval Station Great Lake’s Natural Resources Program. NSGL also partnered with the National Audubon Society during this project to tour the nesting platform and provide summary



results of the breeding season. This success story was distributed to the local American Birding Association newsletter (Illinois Birders Exchanging Thoughts - IBET) to inform the local birding community of this achievement in survival of young terns.

The NSGL Environmental Department also attended the Lake County Forest Preserve Annual Strategic Planning Meeting in September 2019 and discussed the nesting platform with

Lake County staff. Future projects on the station plan to align with Lake County Forest Preserve conservation goals as practicable. Additionally, NSGL Natural Resources Manager met with U.S. Fish and Wildlife Service (USFWS) personnel at the Federally-endangered Piping Plover nesting site in Chicago, IL August 2019. There, the USFWS and NSGL Natural Resources Manager shared ideas on shoreline bird species habitat protection and the success of the nesting platform.

Conclusion

The accomplishments of Naval Station Great Lake’s natural resources team in fiscal year 2019 have enhanced shoreline habitat for not only the state-endangered Common Tern, but also other shorebird species and native flora. NSGL has prioritized collaboration with regulatory agencies, MWR, and other stakeholders in support of the mission for the protection of listed species. These successes have paved a path for future conservation efforts and provide an optimistic outlook for population growth of the sole Common Tern nesting colony in Illinois.