



US Army Corps of Engineers®

Stewardship

news

YOUR Thoughts

We are looking for contributors and ideas.

✳ If you have a topic, success story, lesson learned, or helpful suggestion, let us know.

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Stewardship News is an unofficial publication of the U.S. Army Corps of Engineers (USACE). This online publication is produced quarterly with the purpose of providing its readers information about the USACE Stewardship Program.

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Volume 7, Issue 1: March 2024

Your Stewardship HQ Update

In celebration of National Invasive Species Awareness Week (NISAW), held Feb. 26, 2024 through Mar. 3, 2024, this issue of Stewardship News is dedicated to highlighting and sharing USACE efforts regarding the prevention, detection, and management of invasive species.

The Invasive Species Leadership Team (ISLT) provides oversight of the USACE Invasive Species Program. The ISLT provides direction to achieve the goals and objectives established within the National Invasive Species Management Plan and the Aquatic Nuisance Species Task Force Strategic Plan that are applicable to USACE Civil Works programs and projects.

Over the past year, the ISLT supported the revision of USACE's Invasive Species Policy, issued in February 2023, revised its Program Management Plan for 2023-2027, and drafted the USACE Invasive Species Strategic Plan in response to the John D. Dingell, Jr. Conservation, Management, and Recreation Act of 2019. Additionally, the ISLT supports the Statement of Needs process in coordination with ERDC, and strives to further the exchange and sharing of information related to invasive species. Most recently, the ISLT created daily posts to share information regarding USACE invasive efforts during NISAW. These posts can be access on the NRM Gateway.

 [Click here !](#)

Conservation Through Eradication

Article provided by Kyle Ruona, NWK, with support of Jessica Schaeffer. Article originally provided in the USACE Kansas City District publication "The Heartland Pulse", Feb 2024.

Nature has a way of healing and restoring us, but sometimes we also have to do the same for nature through conservation and restoration efforts. One such effort is underway at Wilson Lake in Sylvan Grove, Kansas, where the invasive species, phragmites, has taken over 90% of the shoreline.

In the heart of the Smoky Hills, Wilson Lake is a destination spot for anglers, locals and adventurers. During the months of May and June, there is normally a fishing tournament almost every weekend held at the lake. With its near-clear water and mesmerizing coves, the lake has become popular for those who know where to find a "diamond in the rough" off Interstate 70, making it more important each year to eradicate phragmites to keep Wilson Lake as a destination spot.

Article continued on page 2 *Photo: Phragmites cover the shoreline at Wilson Lake, Kansas. Photo by Jessica Schaeffer.*



NATIONAL INVASIVE SPECIES AWARENESS WEEK

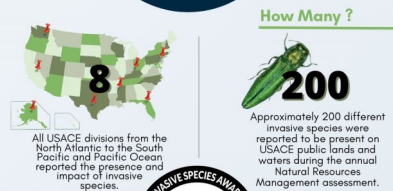
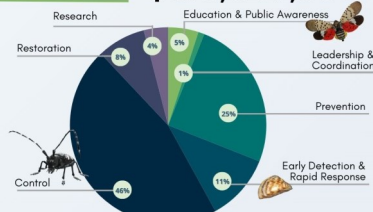
FEBRUARY 26 - MARCH 3

In honor of National Invasive Species Awareness Week we want to recognize the efforts that each and every one of you do on a near daily basis to prevent, control, and eradicate the presence of invasive species on USACE lands and waters. Your tireless work to ensure the sustainability of our environment does not go unnoticed.

USACE Invasive Species Efforts: A Closer Look at the Costs

Annually, USACE reports estimated costs related to invasive species to the National Invasive Species Council (NISC). Executive Order 13751 calls upon federal agencies to ensure that their invasive species-related activities are complementary, cost-efficient, and effective. Reporting agencies include the Department of Agriculture (USDA), Department of Commerce (DOC), Department of Homeland Security (DHS), Department of the Interior (DOI), Department of State (DOS), Department of Transportation (DOT), and others.

USACE Cost: FY 23 **\$310,649,368**



Conservation continued



“Phragmites stands cover almost all of the shoreline and are problematic not only for the lake’s wildlife, but also boaters,” said Nolan Fisher, supervisory natural resource manager at Wilson Lake.

Phragmites, also known as the common reed plant, poses a risk to the ecosystem at Wilson Lake by damaging shorelines and outcompeting the native vegetation. With phragmites covering almost every inch of shoreline, there is very little room for native plants to grow. Native plant species are the preferred food and shelter for many native fish and wildlife. Phragmites also grows in thick stands which can hinder lake access for wildlife. This growth can also disrupt waters’ natural flow resulting in impacts to navigation and flooding.

In addition to the impacts to the ecosystem, phragmites invasion also poses a safety risk. Phragmites can grow up to 12 feet tall with half of this height being underwater. This can result in lake users underestimating the depth of the water where phragmites is growing. If those users aren’t wearing proper safety equipment, such as a life jacket, this could be deadly. Due to its thick growth, phragmites can also increase the risk of a wildfire in the fall by increasing the amount of dry vegetation available to burn. To combat phragmites at Wilson Lake a helicopter was used to spray imazapyr, a non-carcinogenic aquatic-safe herbicide.

This past year, 50 miles of shoreline were sprayed for phragmites along Duval Cove going east of the dam, south to Hell Creek, and then west just past Minooka Park at Wilson Lake.



Photo: An aerial view of phragmites covering the shoreline at Wilson Lake.

“Phragmites will never be eradicated, but both the Kansas Department of Wildlife and Parks and the U.S. Army Corps of Engineers are taking efforts now, and have goals in the future, to reduce the footprint of this invasive species in order to help restore natural habitat at Wilson Lake,” said Fisher.

Results of the phragmites spray will become evident in late spring as the phragmites were sprayed before the plant went dormant for the winter. Planned, future control efforts include spraying other portions of Wilson Lake as funds are available to help eradicate phragmites and restore the natural ecosystem.

USACE Traveling Trunk

There is no better way to share information about invasive species than with the Traveling Trunk!

The Invasive Species Leadership Team developed an interpretive trunk to serve as a tool to enhance the public’s understanding of invasive species, the negative impacts they have, management approaches, and steps we can all take to help stop their spread.

Currently, the ISLT is adding new specimens to the trunks including a sea lamprey replica, Eurasian watermilfoil sample, a round goby specimen, and phragmites exhibit.

Best of all... the Traveling Trunk is FREE to borrow!

Learn how on the NRM Gateway.

<https://corpsslakes.erdc.dren.mil/employees/invasive/outreach.cfm>

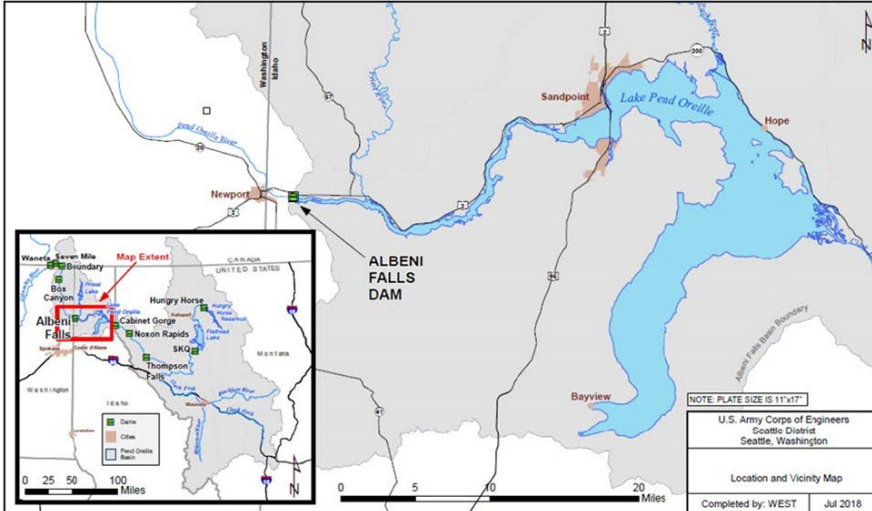
 **Click here !**



Photo (Top Circle): The contracted helicopter sprays imazapyr on phragmites along the shoreline of Wilson Lake.

Managing Flowering Rush in the Pend Oreille near Albeni Falls Dam, Idaho

Albeni Falls Dam (AFD) was authorized for construction under the Flood Control Act of 1950 and was built from 1951 to 1955. The project's missions include hydropower, navigation, fish and wildlife management, recreation, and flood control. The dam's main function is to control flooding and maintain the elevation of the Upper Pend Oreille River and Lake Pend Oreille which is one of the deepest and largest lakes in Idaho, with a surface area of over 148 square miles.



Over the past 20 years, multiple locations in and around Lake Pend Oreille and the Pend Oreille River have been study sites for invasive aquatic weed control treatment methods, as well as sites for active treatment and eradication of invasive aquatic weeds. These locations include seasonally submerged USACE lands with a primary focus on the treatment of flowering rush (*Butomus umbellatus*) and Eurasian watermilfoil (*Myriophyllum spicatum*). Through a newly signed 10-year Supplemental Environmental Assessment (SEA), the project has been authorized to manage aquatic invasive species in and around fee owned parcels within the project boundary.



In partnership with the US Army Engineer Research and Development Center (ERDC), herbicide treatment areas have ranged from 12 acres (1998), up to as much as over 1,000 acres (2006). These larger treatments primarily targeted Eurasian watermilfoil. In 2010 and 2011, ERDC oversaw bare ground flowering rush trials to determine in-water treatment efficacy of several chemicals. In-water treatment combinations, using triclopyr and fluridone, only showed partial success in controlling flowering rush. However, a second research trial in 2015 using replicated bare-ground treatments, applying imazapyr proved to be very effective. Later on, the submerged application of diquat was conducted in 2016 and 2017 at Oden Bay and this treatment also showed some promise to control the flowering rush and watermilfoil.

Photo circle: Robert Hoff, Arkabutla Lake leads a field session during ENS 101.

Environmental Stewardship Training Opportunities

ENS 102 (April 2024)

In FY24, the 3rd pilot course of ENS 102 will be offered. The class will be held at Caesar Creek Lake (OH) Apr. 15 - Apr. 18, 2024. Cost is \$0.

Please email Tara Whitsel at Tara.J.Whitsel@usace.army.mil for additional details and to register. This course is scheduled to be available through PROSPECT in FY26.

Aquatic Invasive Management (September 2024)

In partnership with the University of Florida, the workshop will be held Sep. 10-12, 2024 in Windsor, CT. The workshop provides current and historic USACE involvement in invasive aquatic plant management, best management practices for APM, herbicide physiology, contract management, and outreach related to aquatic plant management. Please email Tara Whitsel at Tara.J.Whitsel@usace.army.mil for additional details and to register. *This workshop is currently waitlist only.*

ENS 101 (November 2024)

In FY25, ENS 101 will be offered through the USACE Learning Center as a PROSPECT course. The course will be held Nov. 4 - Nov. 7, 2024 at Lake Sonoma (CA). Cost will be determined in FY25 PROSPECT schedule.

Aquatic Invasive Management Workshop (February 2025)

An additional workshop is being planned for February 2025 located in Kissimmee, FL — specific details and locations to be provided.

Please email Tara Whitsel at Tara.J.Whitsel@usace.army.mil for additional details and to register.



Flowering Rush continued



For a variety of reasons, including budget, lack of staffing, and COVID restrictions, research and treatment efforts were halted from 2017 through 2022. However, this 5-year gap in treatment shined a light on the long-term efficacy of previous treatment plots. It was identified from the 2015/2017 flowering rush bare ground treatment trials, that multiple treatments are necessary to obtain an acceptable level of control, and even after 5 years, researchers are still seeing a reduction in rhizome bud density and regrowth in those previously treated areas. While a decrease in regrowth in the previous treatment plots was observed, researchers have also discovered an increased propagation rate of flowering rush and Eurasian watermilfoil in untreated plots on USACE property in the Pend Oreille.

In the summer of 2023, ERDC and AFD NRM staff targeted 28.9 acres of submerged established flowering rush stands, located in six different plots (averaging 3.6 to 10.2 feet in depth) throughout the project area. Contractors performed the application using two different EPA approved aquatic registered chemicals: diquat dibromide (Reward label) and endothall (AquaStrike label). During the pre and post treatment assessment surveys, flowering rush health and plant community assessments were performed to quantify the effectiveness of the treatment. As a general rule of thumb, submerged treatments attack the fleshy plant matter of flowering rush. Upon contact the treatment causes “burn down” or cell death in the vegetation that sits above the substrate. While the results are still preliminary, the photos below show a 3-month post treatment comparison between a Reward treated plot (upper left) of flowering rush and an untreated stand (upper right). Also pictured below is a 6-week post treatment assessment (bottom left) showing the “laydown” of the flowering rush grass like projections which typically poke through the surface of the water and stand much more erect (bottom right).

If left unmanaged, flowering rush and Eurasian watermilfoil can degrade water quality (including impacts on irrigation and potable water), and dominate, or entirely eliminate natural vegetation which decreases aquatic biodiversity. Both species also negatively impact native fish and wildlife habitat (including the ESA listed bull trout in Idaho), harbor swimmers itch, and interfere with shoreline activities such as wading, swimming (entanglement), watersports, and angling. Both species can form extensive and dense monoculture stands that shade native vegetation, reduce dissolved oxygen (DO) levels, reduce spawning habitat for native species, and increase predation from invasive fish, which all result in substantial deleterious effects to the overall aquatic and riparian ecosystems.



To achieve a more systemic treatment (attacking rhizome and plant material below the substrate), in addition to submerged treatments, the project will be pursuing bare ground treatment of flowering rush with isopropylamine salt of imazapyr (Alligare Imazapyr 4SL label) in the spring of 2024. Ultimately, there are multiple tools to address flowering rush issues. AFD staff and researchers plan to use chemical, mechanical, and manual methods of plant removal. With a consistent management program, flowering rush populations will decline over time, and the need for herbicide applications for controlling it should also decline. The long-term goal of the treatment strategy is to reduce flowering rush populations to the point where little to no herbicide treatments (or other management approaches) are required, and a recovery of desirable native submersed plants will occur. Once the invasive vegetation is controlled, the desirable native submersed vegetation will be released from flowering rush competition, allowing the native vegetation to rapidly grow and flourish in the treated areas along with improving water quality, fish, and wildlife habitat.

The staff at Albeni Falls Dam would like to give a special heartfelt thank you to ERDC staff along with the supporting universities and agencies, including Dr. Kurt Getsinger, Damian Walter, Jeremy Crossland, Dr. Joe Bisesi, Dr. Ben Sperry, Dr. Bradley Sartain, Chase Youngdahl, and the many others who contributed to the success of this program. Without their assistance and support, this effort would not have been possible. For more information, please contact Andrew Huddleston 208-220-0385, (Andrew.J.Huddleston@usace.army.mil),

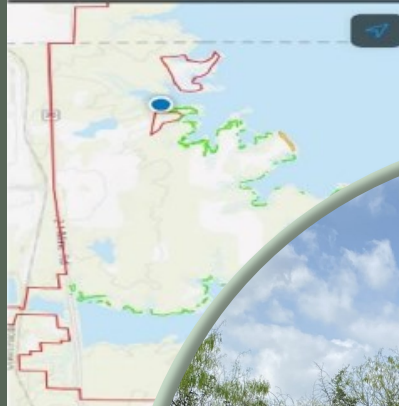
Restoration After Phragmites

POC: Cassie Magsig, Rend Lake

The USACE Water Operations Technical Support Program (WOTS) provided expertise in techniques for shoreline and wetland revegetation in areas managed for common reed (*Phragmites australis*) at Rend Lake and selected Rend Lake for testing a new mapping program. A research biologist with the Engineer Research and Development Center (ERDC) Environmental Lab's Aquatic Ecology and Invasive Species Branch was funded through the WOTS Program to conduct an on-site study of Rend Lake. ERDC provided recommendations for revegetation of shorelines, mudflats, and wetlands with native riparian and aquatic plant species that are compatible with Rend Lake operations. Additionally, ERDC selected Rend Lake as one of the locations to test a new shoreline mapping data collection program. The data collected will be used to assist with targeted invasive species removal and revegetation efforts.

Key Takeaways for Rend Lake

- Utilization of the WOTS resources and other ERDC efforts provided needed answers and new direction, leading to robust improvements of Rend Lake's aquatic ecosystems.
- The results of the WOTS effort assisted in Rend Lake in creating plans and communicating invasive treatment efforts with stakeholders, the community, and visitors.



Photos clockwise: ERDC Research Biologist and Rend Lake Staff collect native shoreline plants for transplanting in areas previously treated for common reed. ERDC Research Biologist Lynde Dodd identifies shoreline plants at Rend Lake. Screen capture of mapped vegetation along the Rend Lake shoreline. Surveyor testing shoreline data collection and mapping applications.



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Stewardship Around USACE



1 Beaver Lake (SWL) - Prescribed Fire
Natural Resources Staff at Beaver Lake have been busy executing burn plans for recreational and natural areas along the shoreline of Beaver Lake including Blue Springs, Lost Bridge North Campground, and Dam Site Island. Prescribed burns decrease fuel load on the forest floor and help prevent wildfires and improve wildlife habitat while decreasing invasive species. Additionally, the Arkansas Game and Fish Commission (AGFC), through a partnership with the Beaver Lake Project Office, has been removing invasive Eastern Red Cedars from the shoreline. AGFC removed the cedar trees to open the habitat for other tree species that provide more ecological benefits. The cedar trees removed were relocated by boat and sunk in the lake to improve fish habitat. AGFC maintains a map of these locations and provides this information on their public website for anglers wanting to take advantage of the newly established fish habitat.

2 Willamette Valley (NWP) - Prescribed Fire
Prescribed burning is a critically important tool to maintain and improve ecological function in prairie and oak habitats. The Willamette Valley Project achieves these actions through an Economy Act Agreement with the Bureau of Land Management (BLM). USACE biologist determine where burns are needed and the BLM writes the burn plans, deploys, and commands interagency wildland fire resources as needed for safety and success. For over 30 years, the Willamette Valley Projects have successfully coordinated outreach, permitting, and burn prioritizations with a larger partnership that include the City of Eugene, Lane County, BLM, and The Nature Conservancy (TNC). Across the partnership, prescribed fire actions may be led by TNC, Ecostudies Institute, Oregon Department of Forestry, US Fish and Wildlife Service, or BLM burn bosses.



3 Waco Lake (SWF) - Prescribed Fire
In January 2024, Texas Forest Service (TFS), in cooperation with USACE at Waco Lake conducted a prescribed burn at Reynolds Creek Park. Waco Lake worked with TFS Wildland Urban Interface Office under the SWF/TFS MOU to plan the burn. The burn aimed to remove invasive species such as Ashe Juniper and Johnson grass as well as restore specific areas to natural grasslands comprised of Little bluestem, Big Bluestem, and Indiangrass. Another significant purpose of the prescribed fire application was to remove dead grassland and woodland fuels to reduce the risk of wildfire for public safety. The burn unit was 292 acres and utilized park roads and the lakeshore as firebreaks. Thirty-six personnel from TFS and the Texas Intrastate Fire Mutual Aid System conducted the burn while eight Waco Lake ranger, maintenance, and civil engineer technicians facilitated fire watch and controlled public access. TFS provided 252 labor hours as well as 20 hours of preparation work for the areas prior to ignition of the burn. This was a great example of the strong partnership Waco Lake has with TFS and both organizations look forward to future projects.



Past issues of Stewardships News can be found on the NRM Gateway homepage!
<https://corpslakes.ercd.dren.mil/nrm.cfm>

 [Click here !](#)

Stewardship Around USACE

4 Libby Dam (NWS) - Annual Winter Eagle Survey & Veterans Fishing Experience

For over 43 years, every January USACE Park Rangers and NRM staff, volunteers, and partners nationwide participate in the annual mid-winter bald eagle survey. At Libby Dam, NRM staff, volunteers, and Kootenai National Forest Service staff participated in the survey observing 257 eagles this year! This was an increase from 247 observed last year.



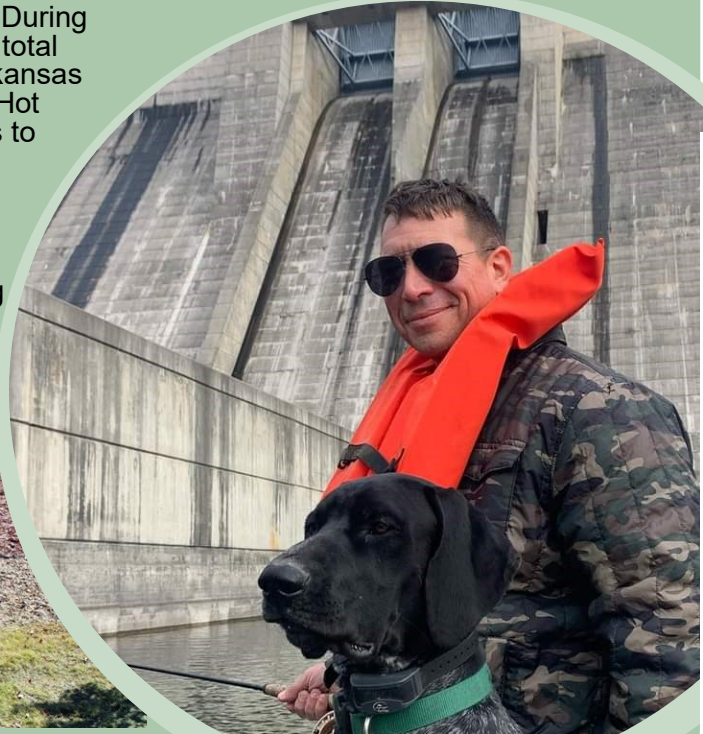
Libby Dam staff also coordinated a special opportunity for Camp Patriot selected veterans to fish below the dam. Kootenai Angler provided the guides and gear for the veterans and Libby Dam staff provided the access. Interim Natural Resource manager Tana Wilson met with the guides and veterans prior to launching and provided a safety brief along with float plan.



5 Lake Ouachita (MVK) - Annual Hunt

Lake Ouachita hosted its annual Mobility Impaired Deer Hunt with four hunters participating during this year's event. During the hunt, all hunters harvested at least 1 deer with five total deer harvested. The hunt is in partnership with the Arkansas Spinal Cord Association and 22 businesses surrounding the Hot Springs, AR area that donated food, services, and giveaways to make the event a success.

Natural Resource Specialist and Lake Ouachita POC for the 2023 hunt, Jon Munz, shared: "The comradery between the staff and hunters is becoming more of a family tradition as if we were gathering around a campfire at deer camp swapping stories. This event is much more than just harvesting a deer and you feel that when we come together each year for the hunt." The personnel at Lake Ouachita are already looking forward to next year's hunt.





ERDC Researchers Learn about Natural and Nature-Based Features (NNBF) at Blue Marsh Lake

Impact Statement: Blue Marsh Reservoir has installed multiple Natural and Nature-Based Features (NNBFs) for reducing shoreline erosion and improving habitat. The insights gained from the performance of these NNBFs will be useful at other reservoirs.

Blue Marsh Lake, located in Philadelphia District (NAP) has constructed multiple Natural and Nature-Based Features (NNBFs). ERDC researchers Dr. Travis Dahl and Kathleen Harris (both of ERDC Coastal and Hydraulics Laboratory [CHL]) partnered with NAP's Northern Area Facilities Manager Dave Williams to plan the visit. They met with NAP personnel including Scott Sunderland, Ranger Brianna Treichler, and Jake Helminiak and toured the NNBFs installed around Blue Marsh Reservoir. Many of these features were only visible because of the seasonal drawdown. The group saw a range of NNBFs, including a retaining wall that incorporates large stone and live stake plantings paired with submerged rubble mound habitat structures.



Photo above: Kathleen Harris (ERDC-CHL) takes notes about the cabled Christmas trees installed for fish habitat while standing on a sawtooth deflector. Photo top circle: Brianna Treichler (NAP, third from left) explains the bank stabilization installed in 2022 to Scott Sunderland (NAP), Kathleen Harris (ERDC-CHL), and Jake Helminiak (NAP). Rubble mound habitat structures are visible at the current waterline behind the group.

In 2021, Blue Marsh installed a series of sawtooth deflectors using large stone to reduce shoreline erosion. This installation was successful and received positive comments from recreational users, particularly anglers, leading to implementation of similar designs at other locations in the reservoir. One of these installations includes a kayak launch at the level of the summer pool to increase access and another coupled the deflectors with various off-shore habitat structures constructed from wooden planks or conifer strings.

The lessons learned from the efforts at Blue Marsh will be valuable for other USACE reservoirs experiencing shoreline erosion issues and will be incorporated into an overview of reservoir NNBFs being prepared by ERDC.

This site visit to Blue Marsh Reservoir in the USACE Philadelphia (NAP) was conducted as part of the Natural and Nature-Based Features in Reservoirs work unit of the USACE Flood and Coastal Systems (FCS) Program. This study is being conducted in support of Statement of Need (SoN) 1630: "EWN-NNBF Planning Matrix and Manual for Reservoir Sediment and Erosion Control".

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