



Stewardship news

Volume 6, Issue 3: September 2023

YOUR Thoughts

We are looking for contributors and ideas.

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

Send to: Tara.J.Whitsel@usace.army.mil

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. Editorial views and opinions expressed are not necessarily those of the Department of the Army. Mention of specific vendors does not constitute endorsement by the Department of the Army or any element thereof.

Your Stewardship HQ Update

Environmental Stewardship Training Opportunities

ENS 101 (February 2024)

In FY24, ENS 101 will be offered through the USACE Learning Center as a PROSPECT course. The course will be held Feb. 5 - Feb. 8, 2024 Arkabutla Lake (MS). Cost is \$2407. Please visit <https://ulc.usace.army.mil/CrsScheduleNewFY.aspx> to enroll.

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 FY25.

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.

To request additional information on any course please reach out to Tara.J.Whitsel@usace.army.mil

Protect and Preserve: Kansas City District (NWK) Works To Manage Habitat For Endangered Species

Article By: *Abigail Voegeli, Public Affairs Specialist*

Every year on the third Friday in May, people around the world observe Endangered Species Day. This day is a chance to learn about fish, wildlife, and plants in need of protection. For many USACE employees, this day is another day in a career dedicated to preserving vulnerable wildlife and ecosystems.

The U.S. Fish and Wildlife Service and the National Marine Fisheries Service share the responsibility of administering the Endangered Species Act, which includes maintaining the federal endangered species list. Within NWK there are many endangered animals, such as bats and whooping cranes. There are also other species besides animals, such as *Geocarpon minimum*, a tiny green succulent. Despite the wide variety of endangered species in the district, for many species, the common denominator behind their decline is the same.

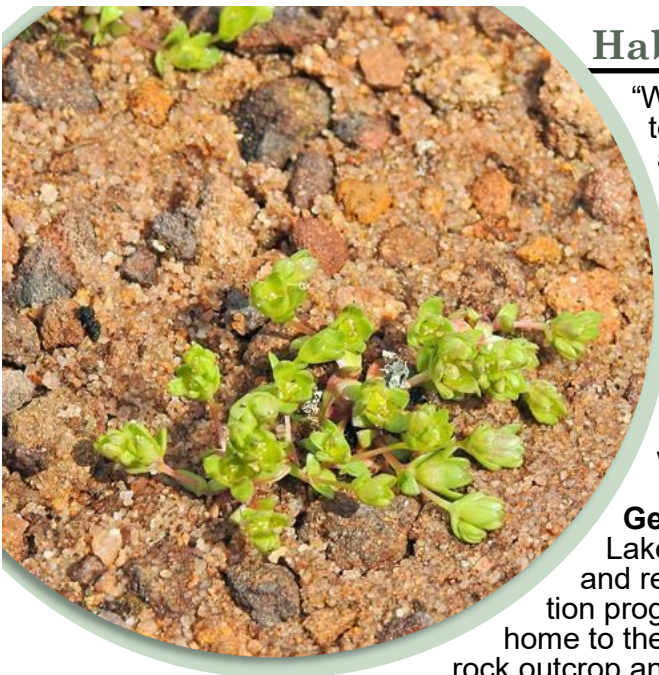
Whooping Cranes

The lakes found in the western part of NWK – Kanopolis, Wilson, Harlan County, and Milford – are a few examples of the habitat USACE manages for endangered species. These lakes offer great stopover habitat to migrating whooping cranes located in areas with limited water resources.

Photo: Whooping Cranes by Ryan Williams, Kanopolis Lake



Habitat for Endangered Species Continued



“Whooping cranes migrate from northern Canada all the way to the Gulf of Mexico, and along the way, they need to stop and rest and roost overnight,” said Ruona, NWK biologist. “Those lakes offer stopover habitat for them.”

Ryan Williams, a natural resource manager at Kanopolis Lake, explained the migration process for the cranes. “Migration stays can range from overnight up to 18 days or more,” he said. “April through May, and then October through November is when they pass through.” According to Williams, Kanopolis Lake was the temporary home for at least two percent of the world’s population of whooping cranes this spring.

Geocarpon

Lakes are just one type of habitat that USACE works to protect and restore. A lesser-known type of habitat in USACE’s conservation program is a glade, specifically a channel sandstone glade, home to the geocarpon succulent. These glades are a special type of rock outcrop and are prevalent at Harry S. Truman and Stockton Lakes in

Missouri. “Geocarpon thrives at the base of these rock outcrops, within depressions filled with dirt and sand,” said Derrick Phillips, an environmental specialist at Stockton Lake. “The plant itself is very small. It used to be more widespread, but habitat destruction has isolated it to these glades.”

Bats

In addition to habitat loss, USACE natural resource employees are also concerned with disease prevention. At Harry S. Truman Lake, employees work to protect various threatened and endangered bats from a disease known as white-nose syndrome. White-nose syndrome is an invasive fungus introduced to the U.S. approximately two decades ago and is killing bats at a significant rate. Conservation efforts at Harry S. Truman Lake project office include placing metal barriers over caves where bats live in order to prevent disruption, as well as monitoring a nearby levee pump system to ensure the caves do not flood in high-water events. Wildlife biologists also conduct surveillance and health studies to monitor the health and number of the bats. Larry Smith, a natural resource management specialist at Harry S. Truman Lake, explained these efforts are not just for currently endangered bats, but also those they hope to prevent from becoming endangered. “There are other species out there that are not on the threatened or endangered lists yet, but if this white-nose syndrome continues to spread or habitat is lost, we could see others added to that list,” said Smith.



Photo above: Blackwell Cave at Truman Lake with protection for bats. Photo provided by Kyle Ruona

Conservation approach

According to Ruona USACE’s conservation work comes in various lines of effort. One mainline effort is control of invasive species impacting the endangered species’ habitat. For example, USACE is working to stop the spread of a common grass known as *Phragmites australis*, which takes up the shoreline at the lakes, blocking visibility and deterring whooping cranes from roosting. Another line of effort is active habitat management, such as prescribed fire in areas that are dependent on natural disturbances. Integrated management practices like prescribed fire help sustain natural ecosystems, and requires conservation workers to look at the problem set from multiple angles and with multiple considerations.

Habitat for Endangered Species Continued

Partnerships and Monitoring Success

USACE works closely with state and other federal agencies while carrying out these practices and monitoring success. USACE employees manage the land and conduct annual surveys, while federal and state agencies monitor efforts and provide input. These federal and state agencies are critical partners in the effort to protect endangered species, helping USACE employees like Smith and his team to continue their work. Smith reflected on the efforts he and his team make every day for these endangered species. "We're out here monitoring them, we protect them, we try to get in budget packages to get funding to keep these areas maintained," he said.

Throughout the year, Smith's office develops budget requests to cover the cost of environmental stewardship, and he handles all the funding for Harry S. Truman Lake to cover threatened and endangered species. Funding is an important piece in managing the land. This year, the Kansas City Dist. received a total of \$98,000 in BIL funding to support habitat management for endangered species. Additionally, \$180,000 at Wilson Lake and \$20,000 at Kanopolis Lake was funded through the Water Resources Development Act special funding to remove invasive aquatic plants degrading whooping crane stopover habitat. Through funding efforts, active management and control of invasive species, Smith said they are doing what they can to keep these habitats as spaces where endangered species can thrive. The work they are doing is literally life or death for some of these species.

Engineering With Nature: Large Wood On Kootenai River

The Libby Dam Natural Resources Management Office kicked off their first year of large wood nourishment as part of USACE's Engineering with Nature (EWN) funded pilot project to help improve habitat in the Kootenai River below Libby Dam. The project, led by co-principal investigators, Zac Corum (Hydraulic Engineering Section), and Dr. Andy Goodwin (ERDC Environmental Lab) seeks to beneficially reuse woody debris impacting operations and maintenance by placement in the river rather than the current management practice—contract burning and firewood.

Large wood nourishment at Libby Dam is being modeled after a project at Howard Hanson Dam where similar efforts contributed to a significant increase in habitat on the Green River at a much lower cost than it would take using traditional engineering and construction methods.

Sampling for Daphnia

POC: Sarah Burnet, Portland District

Zooplankton (which includes Daphnia) are commonly sampled in lakes since they are an important part of the aquatic food chain. Daphnia filter-feed on algae and bacteria and are a food source for many species of invertebrates and fish. Daphnia are also commonly used as an indicator of change in the water quality since they are sensitive to contamination or pollution.

With the samples collected in USACE reservoirs, NWP biologists look for shifts in zooplankton species presence or absence, as well as abundance, which could indicate changes in the health of the water body, changes in fish grazing pressure, or increases in non-edible algae for zooplankton feeding, alongside the other data collected during the water quality surveys.

NWP conducts reservoir surveys by sampling every month from April to October, from 20 ft deep to the surface.

Photo below:

Water quality sampling by Portland District biologists.



Photo Upper Left: Conducting the first round of placement at Alexander Creek. Photo Lower Left and Right: Collecting logs at burn piles. ID tags are being used to track wood in the river as part of the monitoring phase of the project.

Stewardship BIL Work



1 PROJECT NAME: Harlan County Lake

PROJECT POC: Tom Zikmund, Harlan County Lake Operations Project Manager

PROJECT DESCRIPTION: Over 11,000 feet of riprap was placed along the shoreline of Harlan County Lake. After a 2019 flood, areas of the lake's shoreline had eroded 50 to 100 feet, with some areas eroding as much as 400 feet since 1985. Even without experiencing flood conditions, the lake's shoreline is susceptible to erosion. Harlan County Lake received funding through BIL to make the necessary repairs to protect important cultural sites from further shoreline erosion. The project started in October 2022 and was completed in January 2023.

BENEFITS TO THE NATION/COMMUNITY: At first glance, the riprap that has been placed along the banks of Harlan County Lake, NE might not look like much. However, this seemingly insignificant riprap plays a critical role not only in the mitigation of further shoreline erosion, but also in the protection and preservation of two cultural sites at the lake. The White Cat Village was first recorded in the 1940s by Nebraskan archeologists. The site marks an 18th century village that was occupied by the descendants of today's Plains Apache Tribes. Home to the remains of houses, fire pits and storage pits, White Cat Village is an important cultural and historical site to the Plains Apache Tribes, who originally inhabited this area. The Tipover Cove site is significantly older and contains several sites that were occupied over the course of thousands of years. The cultural sites of Tipover Cove were used by the descendants of the Pawnee Nation because of its location where Tipover Creek once met the Republican River.

2 PROJECT NAME: Rathbun Lake Invasive Species Control for Prairie Restoration

PROJECT POC: Jordon Griffin, Rathbun/Long Branch Lakes Natural Resource Manager

PROJECT DESCRIPTION: Rathbun Lake received \$180k in BIL funding for the control of invasive species impacting the area's prairie ecosystem. Dylan Wagner Services out of Winterset, IA was awarded the contract to mechanically remove invasive shrubs and trees, such as autumn olive and bush honeysuckle, utilizing a rubber tracked skid steer with mulching head. Approximately 325 acres of invasive shrubs and trees were removed from 26 areas over 28 days. The Kansas City Dist. utilizes an integrated pest management program through mechanical, chemical, and biological controls to remove invasive species. Over the next year these areas will receive prescribed fire and chemical applications to aid in the restoration.

BENEFITS TO THE NATION/COMMUNITY: The invasive species control will aid in restoring native prairies beneficial to monarch butterflies, pollinators, ground nesting birds, and other species in need of conservation. Native prairie ecosystems are more resilient to climate change and able to sequester more carbon. The prairie plant community have deep root systems able to sustain long periods of drought and store larger amounts of carbon compared to invasive plant species.



Photos Above: Invasive species control for prairie restoration at Rathbun Lake. Left photo is before, right photo is after treatment

Stewardship BIL Work

2 PROJECT NAME: Harry S. Truman Dam & Reservoir Glade Restoration

PROJECT POC: Larry Smith, Harry S. Truman Lake Natural Resource Management Specialist

PROJECT DESCRIPTION: Harry S. Truman Dam & Reservoir received \$30k in BIL funding for the restoration of glades ecosystems that aids in the conservation of the federally threatened Geocarpon minimum plant. Golden Valley Brush Clearing out of Clinton, MO was awarded the contract to remove invasive trees, shrubs, and plants encroaching onto and degrading glade areas at Harry S. Truman Dam & Reservoir. Approximately nine acres of habitat restoration occurred at two glade areas over 30 days. Special consideration was put into the type and timing of work as to not adversely affect the Geocarpon minimum.

BENEFITS TO THE NATION/

COMMUNITY: The glade restoration work enhanced habitat for the threatened Geocarpon minimum, as well as other uncommon animals like collared lizards and eastern narrow-mouthed toads. In addition, restoring the glades to their native status creates habitat for over 100 plant species. Glade conservation is important to the state of Missouri and an important part of the Missouri State Wildlife Action Plan.

Forester Recognized as Hero of the Month in Rock Island District (MVR)

Benjamin Vandermyde is the Forestry Lead at the Mississippi River Project. He is recognized as MVR's Hero of the Month for May 2023. He has an integral role in Project Forest Management Operation and Maintenance efforts as well as forestry support to ecosystem restoration programs in MVR. Ben and the forestry team recently hosted two of three Annual Forestry Coordination Meetings, with the third on April 17, 2023, marking the 43rd year the Project has met with wildlife agencies including U.S. Fish and Wildlife Service, Iowa Department of Natural Resources (DNR), Illinois DNR, and Missouri Department of Conservation who manage Project lands under agreements through the Fish and Wildlife Conservation Act. The meetings were also held jointly with Project counterparts in adjoining pools in MVS & MVP.

Ben and team also hosted a virtual Upper Mississippi River (UMR) regional USACE forestry meeting and a joint site visit for field staff in MVP, MVR, and MVS in 2023. This UMR regional USACE forestry coordination allows for information sharing and alignment on protocols, data management, and best practices. Ben has been working closely with Project Management and Contracting to provide supporting documents for a Multiple Award Task Order Contract for Forest Services including tree planting, timber stand improvement, herbicide, and other forestry services. This five-year contract will follow the Blank Purchase Agreements for forestry services used from 2017-2022, where Ben served as the Contracting Officer's Representative (COR) on nearly \$2.2M for UMR and O&M Forest Service call orders for UMR Habitat Rehabilitation and Enhancement Projects (HREP) and O&M. He is also the COR on two current Forest Inventory contracts covering 4,150 acres for UMR and O&M pre-project monitoring and current conditions for forest stand prescription development, as well as a stand-alone tree planting service contract for nearly \$500k for the Beaver Island HREP. Ben is currently providing forestry support to five active HREPs including Pool 12 Forest HREP which is entirely focused on forest restoration over thousands of acres in the Pool.



Photo Above: Glade restoration efforts in progress. Photo Right: Benjamin Vandermyde



Planting the Seeds for Success on Goose Island (MVP)

Article authored by Melanie Peterson, Public Affairs Specialist

The spring melt meant that Goose Island was underwater for most of the spring, which meant tree planting had to be delayed until it was hot and muddy. However, MVP foresters Andy Meier, Sara Rother, and Lewis Wiechmann were up to the challenge, taking one foot of mud and two feet of reed canary grass at a time, to plant the island's new seedlings.

"One of USACE's environmental stewardship goals is to improve the habitat in the floodplains," Rother said. "We're reestablishing a forest cover to shade out the invasive reed canary grass and promote regeneration for a future forest and a future seed source for wildlife."

"Looking at land cover data going back to the time of European settlement, in Pools 3-9, the area has gone from about 45% of the area being forested to about 26% of the area being forested, so about a 50% loss," Meier said.

"One of the most resilient trees to flooding, deer, vegetation, and environmental stress is the swamp white oak tree, Meier said. "Compared to other trees, swamp white oaks have a longevity of 250-300 years. On the other hand, cottonwood trees live 100-120 years and maple trees live 120-140," he explained.

Elevation is also a factor when planting trees on an island. "At lower elevations, trees like swamp white oak, river birch, and honey locusts can handle a little bit more flooding," Meier said. "On higher elevation sites where there's less flooding, trees like hackberry, bitter-nut hickory, northern red oak, and other species thrive better in floodplain areas."

"In the long run, we're trying to maximize diversity across the landscape. The more diversity in species, the more resilience to environmental threats. We think in long time scales," Meier said.

Most of the regeneration that is naturally occurring in the forests is ash and elm. "That's why having a diverse forest is important. Historically, these forests were all maple-ash-elm forests with those as the predominant species. Two of those three are affected by diseases. What happens if a disease comes along that affects maple trees?" Meier said.



The St. Paul District Celebrates the Completion of the First Tribal Partnership Program Project in the Mississippi Valley Division

Article authored by Melanie Peterson, Public Affairs Specialist

On a hot summer day in June, a group of MVP employees and representatives from the Prairie Island Indian Community ventured in boats to Buffalo Slough, near Red Wing, MN, to celebrate the Sturgeon Lake Tribal Partnership Program with a ceremonial tree planting.

The project was the culmination of four years of work and was the first Tribal Partnership Program project completed in the MVD and the second nationwide.

Col. Eric Swenson, district commander, gave brief remarks, before offering tobacco. “When you offer tobacco, it often comes with an ask. My ask is that we can open our minds and hearts to this partnership and connection to the earth. I ask that we can actively listen to each other and grow this relationship for the betterment of all the people who depend on this island and this great river,” Swenson said.

Michael Childs Jr., Prairie Island Indian Community treasurer, spoke and offered a tribal prayer. “In my lifetime, I’ve seen the erosion of this island. It’s quite stark to see how things have changed. It’s good to see some of the restoration work,” Childs said.

About 25 people helped to plant bur oak and hackberry trees under the instruction of Andy Meier, Corps forester. There was a mix of employees from USACE and members of the tribe, including several children that participated.

The \$1.3 million project is important to reestablishing muskrat, beaver, and deer habitat, as well as protect a large bald eagle’s nest. It also reestablishes floodplain forest habitat with native trees and eradicates (or reduces) invasive reed canary grass. The project is vital to our nation in protecting and preserving culturally significant land.

The restoration and stabilization efforts of the island further protects Buffalo Slough where there are at least 29 mussel species, of which the density tripled to 1.7 million mussels from 2010-2017.

The tribal project partnership agreement was signed in February 2021 and construction began in July 2021. Construction was completed by the MVP’s maintenance and repair crew and the rest of the trees were planted by USACE staff and a contractor.

<https://www.dvidshub.net/news/448557/st-paul-district-celebrates-completion-first-tribal-partnership-program-project-mississippi-valley-division>



Some Interesting Reading & Viewing



Did You Know?

The Armed Forces Pest Management Board (AFPMB)

1 Water Sports Industry Association. The Water Sports Industry Association (WSIA) announced the launch of its Boat Decontamination Database. The database provides verified diagrams and instructions to decontaminate boats to help prevent the spread of aquatic invasive species (AIS). This collaborative effort, based on input from AIS experts from around the country, demonstrates the towed boat industry's dedication to mitigating the threat to anyone who enjoys the waterways. Visit the database at <https://decon.wsia.net/>

 [Click here !](#)

2 The National Cooperative Highway Research Program. The National Cooperative Highway Research Program has developed and shared 16 regional guides, regional accessory materials, and a communications toolbox to help inform Department of Transportation staff and leadership and the general public about pollinators. A conduct of research report that explains the research process along with gaps in knowledge and practice for future research opportunities is available at <https://www.trb.org/NCHRP/NCHRPWOD362.aspx?scaud=NCHRP>

Regional Guides



Volume 1
Alaska



Volume 2
California



Volume 3
Florida



Volume 4
Great Basin



Volume 5
Great Lakes



Volume 6
Hawaii



Volume 7
Inland Northwest



Volume 8
Maritime
Northwest



Volume 9
Mid-Atlantic



Volume 10
Midwest



Volume 11
Northeast



Volume 12
Northern Plains



Volume 13
Rocky Mountains



Volume 14
Southeast



Volume 15
Southern Plains



Volume 16
Southwest

 [Click here !](#)

recommends policy, provides guidance, and coordinates the exchange of information on all matters related to pest management throughout the Department of Defense (DoD). Vector borne disease, particularly malaria, resulted in far more casualties among US Forces in the South Pacific during World War II than combat operations. In response, the Army formed Mosquito Survey Units and the Navy formed Malaria Control Units (known as Skeeter Beaters). Their success resulted in the Services permanently establishing pest and vector surveillance and control capabilities and the establishment of the Armed Forces Pest Management Board.

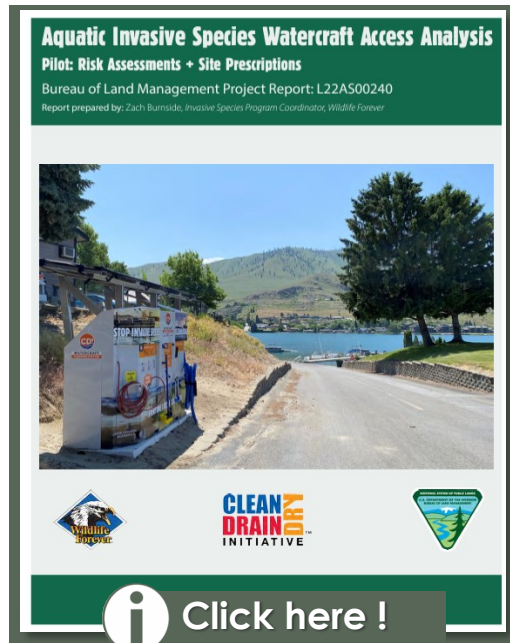
3 New AFPMB Website. The Armed Forces Pest Management Board is excited to announce the launch of their new website at <https://www.acq.osd.mil/eie/afpmb>. The new website features a modern design and improved functionality that will make it easier to access the information you need. Please visit the new website and explore its features!



Some Interesting Reading & Viewing

4 Wildlife Forever's Invasive Species Risk Assessment Tool.

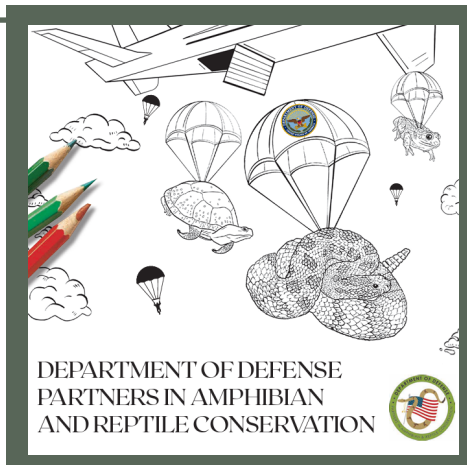
Wildlife Forever has developed an Invasive Species Risk Assessment tool designed to identify invasive species threats while offering mitigation strategies to prevent their spread. In collaboration Bureau of Lake Management western offices, a pilot risk assessment was conducted on a total of 12 public access points. The resulting report includes strategic placement of boat cleaning stations, informational signage, and recommendations to better engage the public and protect our waters. <https://www.wildlife-forever.org/wp-content/uploads/2017/05/BLM-Pilot-Risk-Assessments-and-Site-Prescriptions.pdf>



5 DoD PARC Coloring Book.

Get your crayons and colored pencils ready because DoD Partners in Amphibian and Reptile Conservation's (DoD PARC) coloring book is now complete! A great product for both adults and children alike, the DoD PARC coloring book highlights 15 amphibian and reptile species, some of which are DoD mission-sensitive species. For each species, the book includes an illustration to color, range map, photograph, and text describing its importance to the DoD.

A digital version of the coloring book can be downloaded on DENIX: (<https://www.denix.osd.mil/dodparc/resources/education-and-outreach/>) There are a limited number of hard copies that can be shipped to military installations at no cost. To request 10 or less copies of the coloring book, please email your mailing address and the number of requested copies to: christopher.e.petersen4.civ@us.navy.mil



To learn more about this new partnership, join us for an informational webinar on Wednesday Oct. 4, 2023 from 1:00 – 2:00 EST, and check out the Backcountry Hunters and Anglers website: <https://www.backcountryhunters.org/>

Join from the meeting link: <https://usace1.webex.com/join/heather.d.burke>

Join by phone
1-669-234-1177
1-844-800-2712
Access code: 1998 74 7937

Incase You Missed It...

National MOU with Backcountry Hunters and Anglers.

A national Memorandum of Understanding (MOU) with Backcountry Hunters and Anglers (BHA) has been signed. Backcountry Hunters and Anglers is a 501c(3) nonprofit organization that seeks to ensure North America's outdoor heritage of hunting and fishing in a natural setting, through education and work on behalf of wild public lands, waters, and wildlife. These goals are pursued by building a sense of ownership and engagement with hunters, anglers, and other public land users by encouraging individual contributions to improving management of public lands.

The purpose of this MOU is to provide a framework for cooperation between USACE and BHA to develop and expand collaborative engagement on the broad and diverse communities of interest in wildlife-dependent outdoor recreation, and sustainable wildlife habitat. Under this MOU, BHA and USACE strive to:

- Collaborate on projects, including potential cost sharing activities;
- Implement stewardship projects, education, outreach, and research efforts;
- Increase public awareness through education, special events, and advocacy of the value and benefits (social, economic, physical, and environmental) derived from participation in sustainable outdoor recreation on public lands.

A few examples of programs offered through BHA include the collegiate program, hunting for sustainability, armed forces initiative, and stewardship program. Past and current partnering efforts between BHA and USACE include collaboration on hunting/fishing events, lake clean-ups, and other special events, construction of accessible fishing docks and archery ranges.

This MOU can be used as a great tool to start a conversation with your local BHA chapters or national office and think about potential projects where we can partner together on to meet our shared missions and goals. A copy of this agreement is posted on the NRM Gateway at <https://corpslakes.ercd.dren.mil/employees/cecwon/mou.cfm> and <https://corpslakes.ercd.dren.mil/partners/national.cfm?Partner=backhunter>

Civil Works R&D Statements of Need

You have likely heard of “SONs”, but what are they and who can submit them?



What are SON's? Statements of Need (SoNs) define requirements for innovation in Civil Works missions. Within the USACE organization, SoNs bridge between the experiences of the field practitioners, the strategic vision of Headquarters, and the Communities of Practice with the research programs that provide support to the field through the USACE research facilities and their many collaborators. Proposed SONs can apply to a single or multiple mission areas including: Flood Risk Management, Navigation, Aquatic Ecosystem Restoration, Emergency Management, Hydropower, Natural Resources Management, and Water Supply.



Who can submit a SON? SoNs are submitted by District and MSC practitioners having first-hand knowledge of the specific problems and limitations encountered in the execution of the diverse activities encompassed by the USACE mission.

Tactical R&D	Activities address time-sensitive challenges impacting the USACE mission that require rapid innovation through science and technology, typically requiring between one and three years to achieve intended outcomes.
Strategic R&D	Activities address long range, enterprise-level mission challenges identified by USACE leadership, typically requiring between five to ten years to achieve intended outcomes.
Innovation R&D	Activities denote project-centric R&D activities that are executed with project funds in direct support of one or more USACE projects as identified by MSC leadership. These activities, which focus on incorporating scientific advances and technological innovations on USACE projects to address unique challenges, may extend from one to multiple years.

An online submission form has been developed to aid in preparation of SONs that clearly articulate a problem and that effectively convey associated operational impacts and significance, and the specific tools, guidance or outcome envisioned as products of the proposed effort. Leading questions and short examples are provided for clarity. A simple, conversational presentation of the problem and context, supported by any necessary background or technical information, is encouraged to facilitate understanding and to demonstrate technical merit and need.



When to submit a SON and where can I learn more? SONs can be submitted at any time, but must be submitted by December 1st of each calendar year in order to be considered for funding in the subsequent FY; SONs received after December 1st will be retained, and reviewed and ranked in the next FY, for possible funding in the following funding cycle. Visit the Civil Works R&D Statements of Need page on the Gateway to learn more. The SONs pages required a CAC enable device. <https://gateway.ercd.dren.mil/son/index.cfm?Cop=Env&Option=Start>

