



US Army Corps
of Engineers®

Stewardship

news

Volume 5, Issue 4: December 2022

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

POC: Roseana Burick, ENS Business Line Manager

Welcome to HQ Michael Richards! Mike joins the NRM team at HQ as the new Land Use Program Manager (Vice Crossland). In cooperation with Real Estate, he will work all land-use issues to include disposals, shoreline management, boundary and encroachments, outgrant work, and HQ determination. Mike's position was effective Oct. 24, 2022, and his duty station is Washington, D.C. His career with USACE began as a temporary Park Ranger in the Tulsa District. He worked at several locations including three USACE Districts and two national parks. Mike has also served as the SWL Recreation Budget Business Line Manager, a SWL representative on the SWD Recreation Budget team, a member of a HQ Shoreline Management team, a SWD representative on the Recreation Leadership Advisory Team (RLAT), the Chair of the Recreation Coach Assist and Train Teams (CATT), a member of the HQ Special Use Fee team, and the Chair of the SWL Leadership Program.

Environmental Stewardship Training Opportunities

Feb. 6-10, 2023: ENS 101 @ Georgetown Lake (SWF)

Mar. 7-8, 2023: Hydrilla Workshop (ERDC) @ Lake Seminole (SAM) - [More details on page 7.](#)

Mar. 21-22, 2023: NRM Aquatic Invasive Training in partnership with the University of Florida @ Sam Rayburn Lake (SWF)

May 1-5, 2023: ENS 102 @ Rivers Project Office, National Great Rivers Museum (MVS)

Aug. 21-25, 2023: ENS 101 @ Raystown Lake (NAB)

Sep. 12-13, 2023: NRM Aquatic Invasive Training in partnership with the University of Florida @ Raystown Lake (NAB)

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

Funding & Environmental Stewardship: Mount Morris Dam

Buffalo District leveraged Infrastructure Investment and Jobs Act (IIJA) funding to complete a \$42k environmental stewardship project that included removal of invasive brush and felling of beetle-killed trees at the Mount Morris Dam and Recreation Area in September 2022. As part of this effort, 100 individual trees that had been killed by the invasive beetle, Emerald Ash Borer (EAB), were removed.

These hazardous trees threatened to fall onto roadways and parking lots. Additionally, approximately 2 acres of invasive brush, primarily autumn olive (*Elaeagnus umbellata*) and tatarian honeysuckle (*Lonicera tatarica*), were cut and chipped using a forestry mulcher. The funds were effectively used to complete environmental stewardship objectives at the Mount Morris Dam and Recreation Area, thereby reducing agency liability, improving habitat, and providing economic stimulus.

Photo: Natural Resource Specialist, Tom Wenzel, oversees invasive brush mulching operations along the edge of an old meadow at the Mount Morris Dam and Recreation Area.



Jennings Randolph Lake Hosts 17th Annual Bill Nesbit Memorial Hunt

Article provided by Bill Donnellan

On Nov. 14—Nov. 15, 2022 the Jennings Randolph Lake (JRL) Project, Baltimore District, hosted the 17th Annual Bill Nesbit Memorial Hunt for persons with a disability and wounded veterans. This year 16 individuals, eight of which were veterans, participated in the hunt. A total of 23 deer were harvested over two days.

Upon completion of the hunt, staff and volunteers reflected on the 2-day event. Successful execution of this hunt required months of planning and organizing with the support of dozens of volunteers. Preparation included planting and expanding food plots, upgrading hunting blinds and equipment, coordinating applicants, and much more. This year's participants ranged in age

From 8 to 80. Bringing new individuals into the hunt ensures the continued growth and success of this special event. Over the course of 17 years, the hunt has provided an outdoor experience for 180 hunters and 34 days of hunting for individuals who may not have had the opportunity to do so otherwise.

This year, project staff saw an increase in volunteers from several organizations including the USDA and Potomac Edison.

- The Elk District Volunteer Fire Company (EDVFC) has been a great supporter of the event. This year, they graciously opened their fire hall to serve as the morning meeting point, prepared bag lunches, and served dinner to participants and volunteers both nights.
- JRL staff not directly involved in planning the event—such as administrator, Diana Foster, and her husband, Billy Foster—cooked chili in a Dutch oven over a fire in the campground both days.
- Volunteer Marla Donnellan provided all the baked goods for two days for everyone including biscuits, muffins, and scones.
- The project maintenance staff cleared areas prior to the hunt and placed several hunting blinds in new locations.
- Volunteer Dave Pyles brother, Mike, donated a custom-made knife to be used as a prize on the second night of the event.
- Park rangers, Fran Gullion and Bill Donnellan, oversaw the selection of the hunters and ensured the safe execution of the event.

The project staff express a heartfelt thank you to everyone who has and continues to contribute and participate in this event. The dedication displayed is amazing. Without our USACE volunteers, this event would not be possible. It truly was a team effort to make this event happen.



Photos Clockwise: Safety meeting presented by West Virginia Natural Resource Sgt. Mike Lott. First time hunter, Hunter Rhoades, gets ready to go to his blind at the start of the hunt. Eighty-year old Vietnam veteran, Robert Helsley, with Army veteran, Josh Gank, (safety instructor for the hunt). West Virginia NRP, Lt. Colonel Trader, came to learn more about the event to see how it could possibly be implemented in WV State Parks in the future.

Rivers Project Office Staff Recognized for Sturgeon Efforts

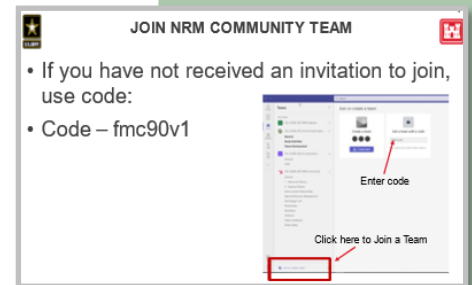
The St. Louis District and Rivers Project Office teams and partners at the Missouri Department of Conservation were recognized in September for their excellent work on lake sturgeon spawning below Melvin Price Locks and Dam. This project incorporated computer modeling, lock and dam gate manipulation, fish sampling and tagging, and collecting water measurements, all with the goal of using navigational structures to alter water flow and promote spawning conditions for the state-listed lake sturgeon.

Not only was this an exceptional example of partnership and coordination among state and federal agencies, it was also successful. For the second time, lake sturgeon were spotted spawning below Melvin Price, the only area in Missouri known to have this occur. Several lake sturgeon were also captured, tagged, and released with the hope that we will be able to study their movement and behavior along the Mississippi River. This project can hopefully be used as an example for how navigational structures can be used to create favorable sturgeon spawning conditions.

Congratulations to all the biologists, engineers, and partners involved in this unique partnership and for earning the Missouri Department of Conservation Regional Partnership Award!

JOIN NRM COMMUNITY TEAMS

If you haven't already received an invitation to this new site, open MS-TEAMS, click the Join a Team link, enter code fmc90v1 or type "/join" in the search bar followed by the code.



Photos: St. Louis District and Rivers Project Office recognition for lake sturgeon spawning efforts.



Stewardship Around USACE



1 Mill Creek Goat Grazing Contract, NWW—For over a decade, the Mill Creek project has successfully used goat grazing to reduce vegetation on the Mill Creek Levees and the Yellowhawk/Garrison Creek canals. Goats easily access the rip-rap areas that preclude mechanical vegetation removal and reduce herbicide use near the water. Vegetation removal is critical to allow visual inspection of the levees to ensure their integrity and public safety. Goat stomach enzymes destroy over 90 percent of plant seeds, which makes goat grazing highly effective for vegetation Control. Based on past success, the grazing contract was expanded to include Bennington Lake's Russel Creek outlet canal in preparation for an upcoming BIL-funded project to repair expansion joins within the canal. In coordination with the contractor, USACE personnel recognized that goats typically remove noxious invasive plants before desirable shrubs, forbs, and native plants. To leverage these benefits and further reduce the use of herbicide, the Mill Creek team is planning to expand goat grazing on wildlife lands beyond the flood risk management structures in the future.



Photo Top Right: Goats grazing invasive reed canary grass along Yellowhawk/Garrison Canal. They have also become an annual favorite viewing event for visitors at the park. Photo Middle Right: Goats grazing the steep bank of Russel Creek Canal which would be difficult and an increased safety risk for USACE personnel to mow. Photo Top Circle: Prescribed burn at Sam Rayburn Lake, SWF.

2 Dolomite Glade Restoration, SWL—The Mountain Home Project Office's local forester, Trevor McIntyre, has been working with Express Forestry Service to help restore local dolomite glades around Bull Shoals Lake to their natural existence. A total of 52.5 acres on Bull Shoals Lake are part of the current glade restoration project for the past fiscal year (FY).

Glades are rocky open areas within sparsely wooded areas of upland woodlands. Because of some characteristics such as high elevation, thin soil, exposed rock, low quantities of trees, and the direction these glades face, the glades are usually hot and dry areas. The species of plants and wildlife that have adapted to glades around the Bull Shoals Project resemble the plants and wildlife one would expect to be found in desert or prairie areas. Over time, invasive species (e.g. cedar trees) grow and form a dense barrier, preventing sunlight from reaching other vegetation closer to the ground. The glade restoration project has included removal of invasive vegetation. Project managers anticipate performing prescribed burns in the future. Burning the area after vegetation removal clears leftover debris and also allows minerals and other nutrients to be deposited back into the soil. This helps promote the growth of native vegetation specifically adapted to glades.

Glade that has been cut



What glade can look like after restoration



Stewardship Around USACE

3 Wright Patman Lake, SWF—Recently, Piney Woods and Wright Patman Lake representatives, along with USACE archaeologists, met with stakeholders from the Texas State Historic Preservation Office and the Caddo Nation Tribal Historic Preservation Office to showcase the success of the Rabbit Island cultural resource site protection project that was completed in 2018. The meeting allowed all parties the opportunity to realize its use for future projects and the need to adapt them to each specific location.

4 Town Bluff, SWF—Biologists from Stephen F. Austin State University spent a week in September catching alligator snapping turtles on a Town Bluff wildlife management area in order to fit them tracking devices. Efforts are being made to study the population dynamics and life habits of these turtles in order to better determine state and federal threatened and endangered species status recommendations. Town Bluff has been identified as some of the best habitat in Texas. The team caught nine alligator snapping turtles in the week, with two males weighing over 80 pounds.



5 Wallisville Lake, SWG—In partnership with Texas Parks and Wildlife Department game wardens, staff from USACE Galveston District hosted their annual gator hunt at Wallisville Lake for combat-injured veterans. This has been a successful way to manage alligator populations in support of environmental stewardship objectives while simultaneously maintaining its Wounded Warrior outreach program.

6 Sam Rayburn Lake, SWF—In September, Sam Rayburn Lake Manager, Reece Nelson, and Park Ranger, Tyler Slovacek, met with members of the Rayburn Realty Association to discuss the following topics: maintenance and improvement plans, flowage easement and fee title, challenges working with the federal government, and best information coordination efforts with adjacent landowners and potential developers around the lake. All participants came with great questions and plans for the future. Regular and recurring meetings are already, and will continue to be, held.



ERDC with Arkansas Fish and Game Commission and DeGray Lake Field Office to Restore SAV for Fisheries Habitat

Article provided by Lynde Dodd, ERDC, Lynde.L.Dodd@usace.army.mil



Collaborative efforts are underway to identify and demonstrate strategies to establish native-dominated submersed aquatic vegetation (SAV) to support healthy fisheries in reservoirs with fluctuating water levels. Degradation of quality aquatic habitat can be attributed to a variety of ecological or environmental factors, and within man-made reservoirs, these factors can be magnified by both reservoir age and seasonal operation. Decomposition of flooded timber over time coupled with other disturbances, such as sustained high water, can lead to limited structure and can be detrimental to native SAV. Recovery may not be possible due to depleted (or non-existent) seed banks/sources, herbivory, and/or presence of invasive aquatic plants prompting active revegetation efforts. Techniques to establish suitable species in the littoral zone under stable hydrology may not translate to reservoirs with moderately to highly fluctuating water levels (± 3 to 5 m relative to full pool). A successful approach to restoring or reestablishing SAV community post-disturbance must address factors that are conducive to establishment and/or recruitment including water quality, species and site selection, proper water depths for outplantings/seeding, management of invasive species, and protection from aquatic herbivores.

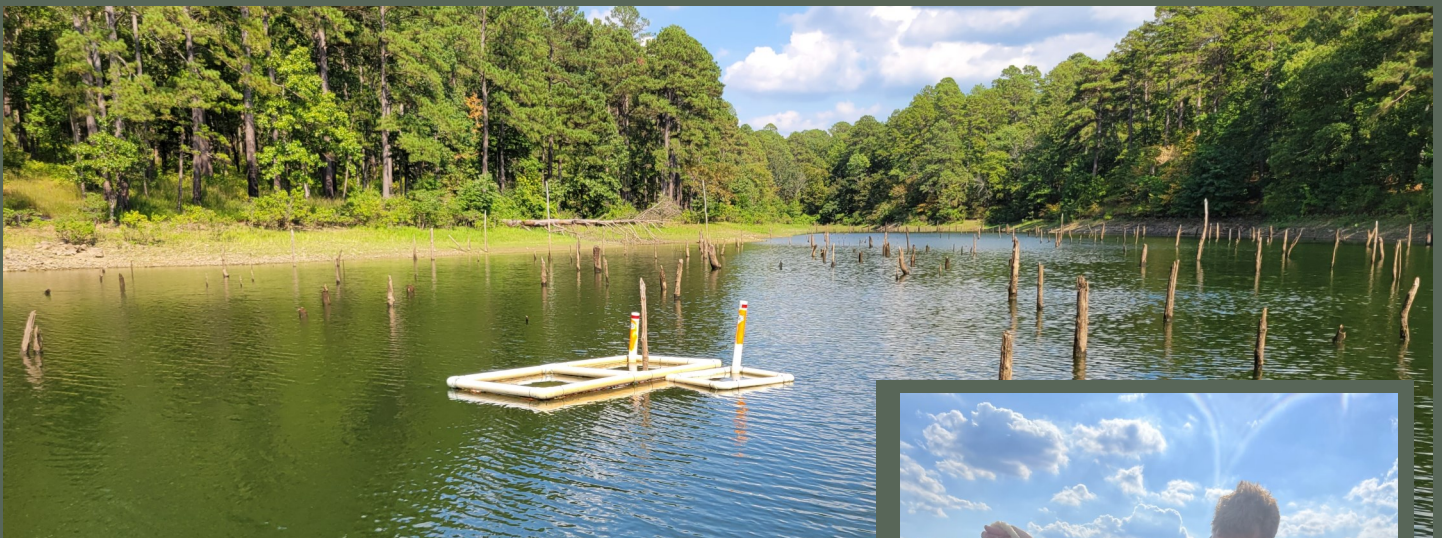


Photo Above: Floating SAV exclosures.

A four-year SAV revegetation project funded by Arkansas Fish and Game Commission through a Cooperative Research and Development Agreement with the US Army Engineer Research and Development Center in collaboration with Mississippi Valley District (DeGray Lake Field Office) will focus on establishing SAV >10-ft deep. Researchers based out of ERDC's Lewisville Aquatic Ecosystem Research Facility working with project partners in Arkansas reservoirs will investigate: 1) what species of SAV are most suitable for revegetation based upon factors that limit establishment and recruitment under variable water levels common to flood control reservoirs and 2) the most efficient and cost-effective methods for SAV plant propagation of transplants for installation in multiple reservoirs. Building upon small-scale pilot studies on SAV establishment, field experiments will be scaled up to larger demonstrations.

Photo Top Circle: DeGray Lake, AR.



Photo: MVR Natural Resources Specialist holding sampling rake with native SAV.

Restore SAV for Fisheries Habitat Continued

Pilot revegetation sites on MVR's DeGray Lake evaluated in Aug. 2022 provided data to identify factors that may have contributed to either success or failure of establishment efforts via floating exclosures ("founder colonies") containing several submersed aquatic plant species. Reasonably clear water (1.59 m visibility) revealed presence of native (and very desirable) species in protected exclosures. Continued monitoring and data collection are needed to confirm establishment and recruitment of SAV in unprotected areas near founder colonies, but early results indicate that floating exclosures may be valuable in SAV restoration in deeper water.

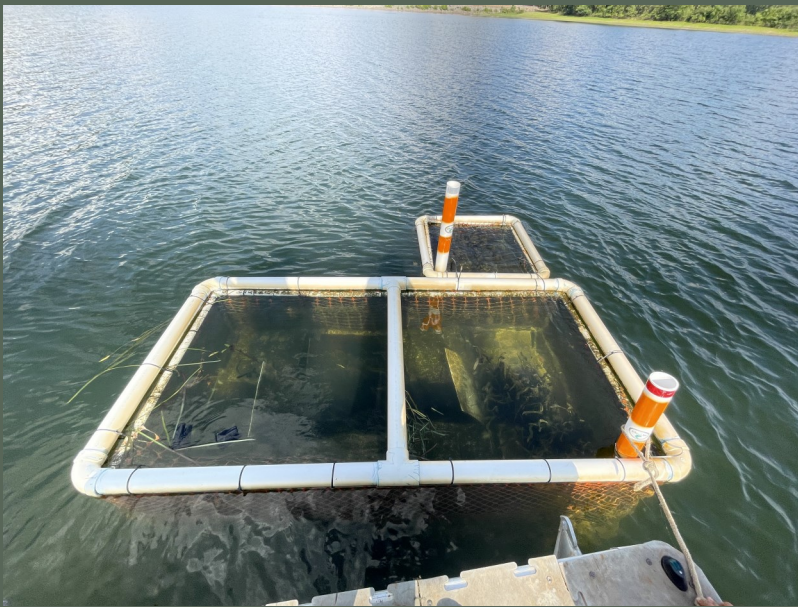
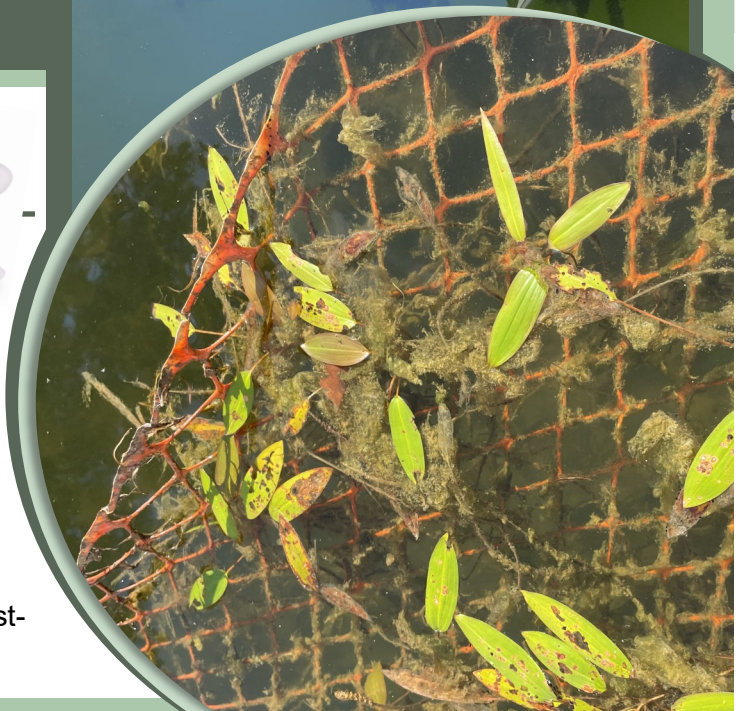


Photo Above: Floating exclosure with American eelgrass. Photo Top Right: ERDC research biologist evaluating water clarity. Photo Middle: Close up of American eelgrass. Photo Bottom Circle: SAV species longleaf pondweed.

Collaborating on Hydrilla: Hydrilla Workshop

The establishment of hydrilla presents numerous challenges to the management of our reservoirs as it continues to spread across the country. USACE, through the Aquatic Plant Control Program, will host a two-day workshop on hydrilla and hydrilla management at Lake Seminole on Mar. 7—8, 2023. The intent of this workshop is to share ongoing research and technology related to the control of hydrilla and collaborate with natural resources managers on the challenges faced in the management of this invasive species. We would like to obtain perspective from both projects that have new infestations as well as those that have been managing hydrilla for years. If you are interested in attending and would like more information, please contact Ian Markovich and Tara Whitsel.



Mississippi River—Putney Landing Restoration

4



The Putney Landing Site is a 21.3-acre Middle Woodland Havana tradition habitation and mortuary complex site situated along Campbell Slough, a backwater of the Mississippi River in Henderson County, Illinois. Approximately 8.6 acres of this National Register of Historic Places-eligible property lies on Federal fee-titled land. The Putney Landing Site is one of only two recognized Hopewell Interaction Sphere (HIS) regional exchange centers along Pool 17-18 stretch of the Mississippi River. HIS regional exchange centers were widespread across the eastern U.S. with hotspots centered along the Mississippi and Ohio River valleys. At the Putney Landing Site, these exotic items included ceramics, human and animal-shaped figurines, marine shell, obsidian (from Idaho), Galena (raw lead), non-local cherts, and many copper items, such as bracelets, beads, gorgets,

awls, and ear spools. The site retains a wealth of information about midcontinental Middle Woodland people's daily lives and mortuary practices, particularly from the period of the site's most intensive occupation (120 B.C. – A.D. 200).

Although less than one percent of the site has been professionally excavated (about 0.1 acre of excavation), those investigations have yielded over 24,000 ceramic sherds, along with an abundance of stone and bone tools, dietary evidence (botanical and faunal materials), and at least 90 subsurface features, mainly storage pits. The prehistoric residents intensively occupied the site on a seasonal basis to tend to mortuary activities and to harvest and process the area's rich aquatic and forest-based natural resources. Since its original documentation in 1957, the site has been recognized for its potential to contribute significant information to local, state, and national heritage. Additionally, many Native American organizations and federally recognized Native American tribes consider it a significant and important prehistoric site.

In 2016, the Putney Landing Site was damaged by significant excavation and looting activities on the prehistoric mounds and along the shoreline. While restoration efforts were completed in 2017 by USACE, historic flooding on the Mississippi River caused additional significant erosion to the shoreline, exposing cultural resource artifacts. Once again, USACE initiated measures to slow the rate of erosion and buffer against future looting only to be impacted by additional flooding in 2020.

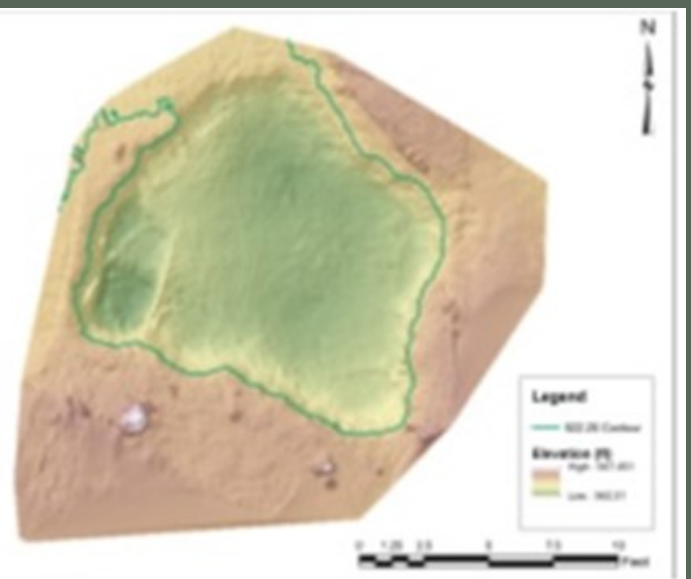


Photo Left: Unauthorized excavation and looting of the Putney Landing Site. Photo Right: 3D LiDAR Scan of Looted Mound. Photo Top Circle: Riprap placement along the shoreline of the Putney Landing Site.

Since then, the Mississippi River Project has worked with shovel-ready plans and specifications to complete a shoreline restoration and protection of the Putney Landing Site. The project repairs consist of placing sand fill on the eroded bank to establish a 2H:1V slope, and then placing a minimum 9" RR-1 bedding stone over the repair area followed by riprap placement. RR-5 riprap was placed on top of the bedding stone to 24" thick at a 2H:1V slope as indicated in the plans. The riprap includes a 36" thick weighted toe in the river. No excavation is permitted on site.

Coordination with stakeholders has been an integral component to the restoration of the Putney Landing Site. Initially, 53 federally recognized Native American tribes were contacted about the excavation and looting damages in 2017. Of those 53, six tribes have asked to be engaged with the restoration efforts at Putney Landing Site. Those tribes are:

- Eastern Shawnee Tribe of Oklahoma
- Iowa Tribe of Kansas and Nebraska
- Kaw Nation
- Miami Tribe of Oklahoma
- Ponca Nation
- The Osage Nation

In addition to the Native American Tribes, the Illinois State Historic Preservation Office has been actively engaged since 2017 and continues to support the importance of the restoration efforts.

2016

- Putney Landing Site was damaged by significant excavation activities and looting on prehistoric mounds and along the shoreline.
- MVR reported Archaeological Resource Protection Act (ARPA) damages to Illinois State Historic Preservation Office (IL SHPO); coordinated with the Advisory Council of Historic Preservation and 53 federally recognized Native American tribes.

2017

- Mandatory Center of Expertise for the Curation and Management of Archaeological Collections (MCS-CMAC), USACE, St. Louis District performed ARPA damage assessment.
- Restoration efforts to excavated mounds were completed by USACE MVR District and Project staff.

2019

- O&M funds were received; followed by plans and specifications for a shoreline restoration project at Putney Landing.
- Historic flooding on the Mississippi River occurred causing further significant erosion to the shoreline; exposing additional cultural resource artifacts.
- The initial budget package for construction of shoreline protection was created.

2020

- Mississippi River Project staff placed sand from local DMMP along shoreline to slow down erosion and provide buffer against future looting of valuable cultural resources.
- Efforts were short-lived due to future flooding.

Photo Right: Erosion prior to protection efforts at the Putney Landing Site.



Some Interesting Reading & Viewing



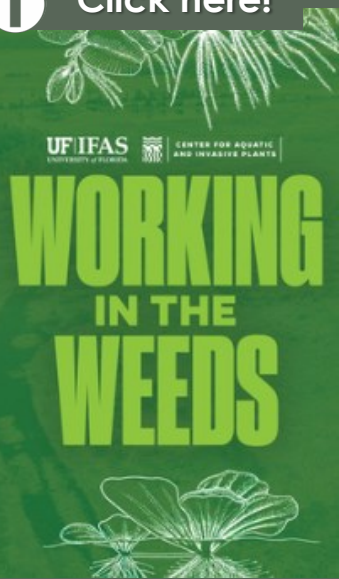
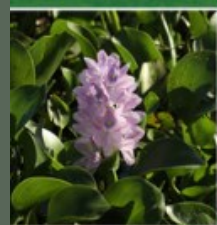
Invasive Podcasts

The University of Florida Center for Aquatic Invasive Plants created a new Podcast in 2022 called "Working in the Weeds."

This podcast "connects scientists with stakeholders, clarifies issues surrounding invasive plants, and highlights research being conducted at the Center" among other topics in invasive species management. The podcast airs twice monthly and can be found on all major podcast platforms, including Apple, Spotify, Google, Overcast, and Stitcher. The podcast website may be found at the following link: <https://anchor.fm/ufifascaip>.

<https://plants.ifas.ufl.edu/resources/podcast/>

 **Click here!**



1 Weed Bio-Control Factsheets. The North American Invasive Species Management Association (NAISMA) Classical Biocontrol Committee announced the publication of new, peer-reviewed weed biocontrol factsheets for use by managers and landowners. Subject matter experts are developing this series to cover invasive plants and their associated biological control agents in North America. Eighty factsheets for 40 weed systems will soon be published and freely available online. Factsheets for 15 weed systems are available now.

✦ **Weed factsheets** cover plant identification, history, distribution, ecology, habitat, and comparisons to look-a-like species.

✦ **Biocontrol agent factsheets** provide information on agent identification, life cycle, impact, habitat requirements, history, and current status for all biocontrol agents or accidentally introduced species associated with their host plant species.

There are currently 15 completed factsheet systems including alligatorweed, Brazilian peppertree, Cape-ivy, common gorse, giant reed, hydrilla, knotweeds, Mediterranean sage, melaleuca, Old World climbing fern, rush skeletonweed, Scotch broom, tropical soda apple, waterhyacinth, and water-lettuce. To access these factsheets and see a list of others soon to come, please visit <https://naisma.org/naisma-resources/biocontrol/biocontrol-factsheets/>

 **Click here !**

ALLIGATORWEED BIOCONTROL AGENTS

HISTORY AND ECOLOGY IN NORTH AMERICA

Nathan E. Harms¹, Ian A. Knight¹, and Paul D. Pratt²

¹US Army Engineer Research and Development Center, ²USDA-ARS Invasive Species and Pollinator Health Research Unit

Agasicles hygrophila Alligatorweed flea beetle

Agasicles hygrophila is a biological control agent approved in the USA for release against alligatorweed.

CLASSIFICATION

RANKING	SCIENTIFIC NAME	COMMON NAME
Kingdom	Animalia	Animals
Phylum	Arthropoda	Arthropods
	Insecta	Insects
	Coleoptera	Beetles
	Chrysomelidae	Leaf beetles



2 Invasive Plant Science and Management. Improving chemical control of non-native aquatic plants in run of the river reservoirs. <https://www.cambridge.org/core/journals/invasive-plant-science-and-management/article/abs/improving-chemical-control-of-nonnative-aquatic-plants-in-runofftheriver-reservoirs/7ECD58E8B86BCEA5E9131626581A98DC>

The project was conducted as part of the Aquatic Plant Control Research Program (APCRP) and was funded through appropriations from the Department of the Army, Appropriation No. 96X3122, Construction General, the Sanders County Eurasian Watermilfoil Task Force, and the Aquatic Ecosystem Restoration Foundation.

 **Click here!**

Photo Top Circle: Alligatorweed bio control agent by Cherrie-Lee Philip, USACE.

Some Interesting Reading & Viewing

3 U.S. Register of Introduced and Invasive Species, Version 2.0 Release. Introduced (non-native) species that become established may eventually become invasive so tracking all introduced species provides a baseline for effective modeling of species trends and interactions, geospatially, and temporally.

The United States Register of Introduced and Invasive Species (US-RIIS) (ver. 2.0, November 2022, <https://doi.org/10.5066/P9KFFTOD>), as of 2022-10-23, is comprised of three lists for the localities of Alaska (AK, with 545 records), Hawaii (HI, with 5,628 records), and the conterminous (or lower 48) United States (L48, with 8,527 records). Each includes introduced (non-native) and established (reproducing) taxa that are, or may become invasive (harmful) in the locality, are not known to be harmful there, and/or have been used for biological control in the locality. To be included in the US-RIIS, a taxon must be non-native everywhere in the locality and established (reproducing) anywhere in the locality. Native pest species are not included.

Each record has information on taxonomy, a vernacular name, establishment means (introduced unintentionally, or assisted colonization), degree of establishment (established, invasive, or widespread invasive), hybrid status, pathway of introduction (where available), habitat (where available), dates of introduction (where available), associated taxa (where applicable), native and introduced distributions (where available), and citations for the authoritative source(s) from which this information is drawn. All versions of the US-RIIS builds on a previous dataset, A Comprehensive List of Non-Native Species Established in Three Major Regions of the U.S. (ver. 3.0) (Simpson et al., 2020, <https://doi.org/10.5066/p9e5k160>).

In summary, ver. 2.0 of the US-RIIS has 14,700 records in the master list and 12,571 unique names. The list is derived from more than 5,800 authoritative sources and was reviewed by or based on input from more than 30 taxonomic experts and invasive species scientists.

4 U.S. Forest Service Publication—Tracing the Source: How Did Invasive Northern Pike Arrive in the Columbia River Basin? Northern pike are among the most exciting freshwater fish to land because they tend to put up quite a fight. This species is broadly distributed outside its native range due to human transport and subsequent expansion. Where Northern pike have been introduced, native fish like bull trout, which are listed as Threatened under the Endangered Species Act (ESA), are suffering dire consequences as this long-lived, generalist top predator is using native fish as a food source. A recent publication, “Mechanism of northern pike invasion in the Columbia River basin,” describes how a team of tribal, state, and federal biologists, led by Rocky Mountain Research Station Research Ecologist, Dr. Kellie Carim, analyzed genetic information to explore the pathways that Northern pike are taking to invade the upper Columbia River basin. The publication also discusses how the team is using this research to support Northern pike control efforts. <https://www.fs.usda.gov/rmrs/documents-and-media/tracing-source-how-did-invasive-northern-pike-arrive-columbia-river-basin?>

Midwinter Bald Eagle Survey

The 2023 Midwinter Bald Eagle Survey will be held from Jan. 4, 2023 to Jan. 18, 2023, with target dates of Jan. 6-7, 2023. Prior to the 2023 Midwinter Bald Eagle Survey further details will be provided to assist with field data collection for 2023 and entry of past data. At this time, we are transitioning to use of the Survey 1-2-3 tool that will allow surveyors to enter data into an online application and directly upload into the Avian Knowledge Network (AKN). The app is anticipated to be ready for release by mid-December. A webinar as well as a short tutorial video will be provided to ensure all surveyors are familiar and comfortable with the usage of the app.

Incase You Missed It...

From DoD PARC: Check out Episode 14 on the Common Snapping Turtle by following the link below. The Common Snapping Turtle is confirmed present on more DoD properties than any other turtle species. YouTube: <https://youtu.be/P4yPCsxDz94>



Click here!

Friends of Reservoirs Grant Opportunity: Friends of Reservoirs has announced that the FY 2024 round of Large Grant applications is now open for fisheries habitat improvement projects. Applications will be accepted through Feb. 15, 2023.



Click here!

Visit <https://www.friendsofreservoirs.com/grants/applications-open-for-fy2024-large-grants/> to submit your application. Project grant funding ranges from \$10,000 - \$75,000.

USACE has been very successful over the past decade in being awarded these grants. Since 2012, we've received almost \$1.5 million in grant funds at 27 USACE projects. Check out this NRM Gateway page for examples of winning applications and AARs. <https://corpslakes.erdc.dren.mil/partners/ground.cfm?Partner=recfish>



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