

# Our Mississippi

PARTNERING TO KEEP  
AMERICA'S RIVER GREAT

SUMMER 2019



## Return of the classic river cruise

**CAPT. DAMON KENNEDY** is guiding the white paddle wheeler with red gingerbread trim through a Mississippi River gorge of ancient limestone, past nesting eagles that a passenger spots with a scope and a scene so natural it could have been from Mark Twain's day—save for the fact the day's cruise has a Taco Tuesday theme and margaritas are being offered at \$1 off.

The *Minneapolis Queen* is just one member of a growing family of vintage riverboat royalty that transports travelers back to what's widely called the most romantic era of river cruising but with a decidedly modern twist.

In addition to the short river cruises like these on scenic stretches of the Mississippi, an ever growing number of cruise liners better known for trips down the Rhine or across the Caribbean now hold riverboat cruises on the Mississippi. Instead of European capitals, their stops are towns like Memphis, Tennessee and Natchez, Mississippi. Some of the vessels are restored paddle wheelers from the Victorian heyday, others billed as the "new modern riverboat" and designed by boat-builder owners.

ABOVE: Launched in 2016, American Cruise Lines' *America* is a new-generation paddlewheeler that comes with a putting green on top deck, "Mark Twain library and chart room" and private decks. It's one in a series of new ships built specifically for Mississippi River cruising.

The *American Harmony* made its maiden voyage in August, and with

multi-story glass atriums, private balconies and 22-day itineraries that start at \$12,000 a person (and run up to \$22,000), cruises on this specially designed vessel bear little resemblance to the steamboats of old. But river cruising's excitement and pace haven't changed. As *National Geographic Traveler* wrote in a piece called "The return of the American steamboat vacation" about a trip on the classic riverboat the *American Queen*:


*Today, you can cruise Twain-style on luxurious vessels even a creative author couldn't dream up.*

"Days on the river pass slowly... Passengers settle into card games in the handsome Mark Twain Lounge or relax with a beer and a book in the Gentleman's Card Room (beneath a mounted fish and a stuffed bear). At Front Porch of America, hot dogs and board games come with soft-serve ice cream, which you can take to a rocker on the deck to gaze at the stands of cottonwood and black willow that stretch as far as the eye can see. The Grand Saloon, modeled after Ford's Theater, hosts bingo games and song-and-dance revues like Hooray for Hollywood, a show of high-saccharine hits à la 'Over the Rainbow.' After dinner, couples fox-trot to a live band."

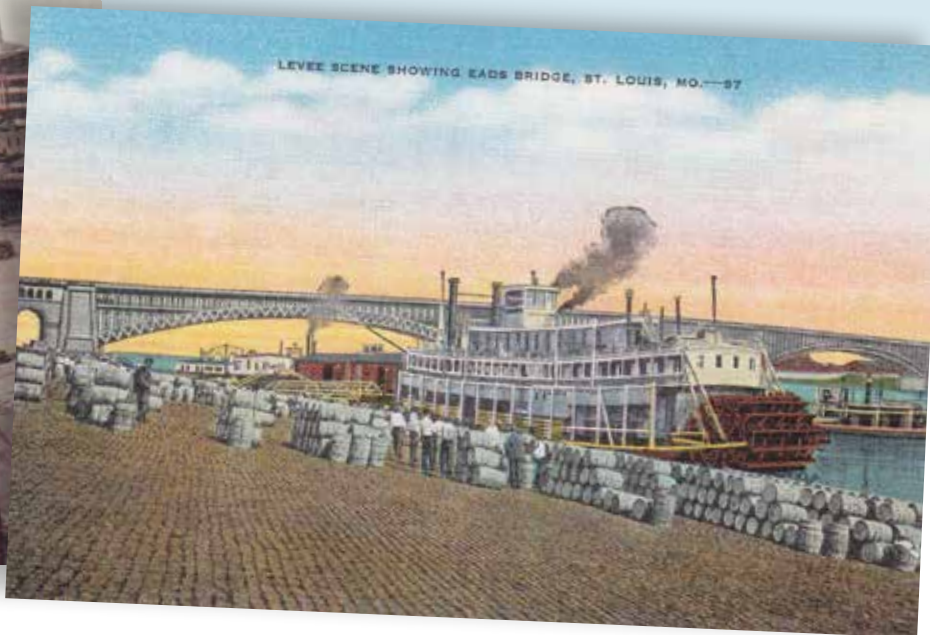
Much has happened since that 2012 voyage. The *American Queen* has integrated shore excursions that capture river history and culture and launched a new vessel, *American Duchess*.

*Continued on page 2 >>*



 **Our Mississippi** is a quarterly newsletter of the U.S. Army Corps of Engineers about its work in the Mississippi River Basin. It is published in cooperation with other state and federal agencies and other river interests with whom the Corps collaborates and partners toward long-term sustainability of the economic uses and ecological integrity of the river system.





ABOVE: In these postcard photographs, steam-powered paddle wheelers dock at the levee in St. Louis, where it was common to see more than 150 boats at a time by the 1830s. Then, before additional work by the U.S. Army Corps of Engineers made the northern river navigable, rapids north of the city made this the northernmost point that many boats could travel.

River towns from Minneapolis to New Orleans boast some variation of traditional paddleboat cruises, and American Cruise Lines is midway through launching its five-ship series of modern riverboats, some offered with Twain themes throughout the voyage.

The comeback of river cruising has meant an economic boon to river cities like Twain's home town of Hannibal, Missouri. A major riverfront renovation is underway, partly so that two cruise liners can dock on the shoreline at once, says Melissa Cummins, community relations manager for the Mark Twain Boyhood Home and Museum. Her attraction is a stop on every cruise ship on the upper river, the museum's executive director a frequent on-board speaker.

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The appeal of such immersion on the Mississippi, passengers tell her, is that river towns have kept the charm of days gone by, she said, and love—as Mark Twain did—telling tales of fascinating characters they'd met along the way.

### Days of old

The steamboat's true heyday—the era between those flat-bottomed keelboats that depended on river current (or paddling) to move and the railroad—was relatively short-lived in river history terms.

As Twain wrote: “Mississippi steamboating was born about 1812; at the end of thirty years it had grown to mighty proportions; and in less than thirty years more it was dead!”

But the popularity was instant, the showboats the floating entertainment palaces of the 19<sup>th</sup> and early 20<sup>th</sup> centuries, bringing theater, saloons and music to river towns with organ-like steam calliopes, packet boats brought both passengers and cargo like cotton, sometimes stacked so high you couldn't see out.

The combination of increased traffic and an unpredictable river in some ways ushered in the existence of the U.S. Army Corps of Engineers. The agency that would become the Corps was first formed to remove snags that wrecked some steamboats.

“Snag removal was the first job that Congress

authorized the agency to do,” says Brian Rentfro, U.S. Army Corps of Engineers historian for the Mississippi Valley Division and Mississippi River Commission. “The next part was strengthening river banks to keep the channel from meandering and keep erosion from causing more trees to fall in and create more snags. The next phase was building levees. You can't have the navigation without the flood control, and then there was the story of dredge boats. They still had to dredge hot spots to keep the river open.”

Even with many obstacles removed, river travel was treacherous in a way that today's passengers on a luxury—or taco—cruise could scarcely imagine. Between 1811 and 1851, 21% of river accidents were caused by explosion, according to an Army

history of steamboats. In a 10-year period in the 1830s, 272 steamboats were destroyed after less than three years of travel. A survey of shipwrecks on the Mississippi River bottom within the Corps' St. Paul District shows the ships wrecked by explosion, fire, snags and sometimes risky piloting driven by intense competition. At one time, St. Paul gave free wharfage for the season for the first boat to arrive from below, making river races an economic necessity to some.

Kerosene lighting didn't help either, notes Clarke “Doc” Hawley, a riverboat historian, calliope player and former captain of the *Belle of Louisville*, the *Delta Queen*, the *American Queen*, *Creole Queen*, the *Natchez* and more.

“They were lighted by coal oil, which was the cause of a lot of the steamboat fires—those chandeliers,” he said. “In the winter, you had to light them for breakfast, lunch and dinner so you could see the menu—or even where to stick the fork in.

“It wasn't like if you had an oil lamp or chandelier in a house—those weren't dangerous unless you knocked one over. But say you're going down the river with the current 15 miles an hour, and you hit a sandbar. When you hit that sandbar, if the boat is a big one, the boat goes “stop!” and the oil would come out and go all over the dining room, and the boilers were right under the dining room, so that was the end of that.” —K.S.

## A River Tale

**Charles Dickens took a steamboat trip on the Mississippi River. He wasn't impressed.**



When Charles Dickens booked passage on an American river steamboat in 1842, his first thought—understandably, given the risks of steamboat travel of the day—was room selection.

“We had been a great many times very gravely recommended to keep as far aft as possible, because the steamboats generally blow up forward,” he wrote in a book about his travels, *American Notes for General Circulation*.

Dickens and his wife traveled from his native England for a lengthy tour of the U.S. when railroads were three decades from crossing the Mississippi River.

“What words shall describe the Mississippi, great father of rivers!” he wrote. “An enormous ditch, sometimes two or three miles wide, running liquid mud, six miles an hour: its strong and frothy current choked and obstructed everywhere by huge logs and whole forest trees ... For two days we toiled up this foul stream, striking constantly against the floating timber ... which renders it no easy matter to remain in bed.”

He found the western American steamboats curious and frightening. “The whole is but a few inches above the water's edge. Seeing the great body of fire that rages and roars beneath the frail pile of painted wood ... the wonder is, not that there should not be so many fatal accidents but that any journey should be safely made.”

Refreshments and meals were equally depressing, Dickens wrote. “We drank the muddy water of this river while we were upon it. At each (meal), there are a great many small dishes and plates upon the table, with very little in them.”

### DAY CRUISES ON THE MISSISSIPPI

There's one way to really understand the poetry of river literature; take your own trip down at least one small stretch. Here are a few ways to do that, the old-school way.

**The Natchez:** While other trips cruise the river near New Orleans, the *Natchez* is the only true steamboat. Get serenaded by calliope favorites on the ninth steamer to bear the name *Natchez* since 1823. STEAMBOATNATCHEZ.COM

**The Minneapolis Queen:** This cruise is a deal—\$19 for adults, \$10 for kids, and more if dinner's included, for the chance to traverse the only natural canyon on the Mississippi. Departs from downtown Minneapolis. TWINCITIESCRUISES.COM

**LaCrosse Queen:** There's live music with dinner during sunset one of the prettiest bluff-lined stretches of the river—and as a special treat, the boat locks through Lock and Dam 7.

LACROSSEQUEEN.COM

**Memphis Riverboats:** Pick from an Elvis music cruise, river history and more. MEMPHISRIVERBOATS.NET





# RETURN OF THE *Tern*

**Trail cams are known for the wildlife surprises** they inevitably offer. Rarely do they provide evidence of a potential endangered species comeback the way one did this summer at the U.S. Army Corps of Engineers' Riverlands Migratory Bird Sanctuary.

"Our trail cameras, located on the tern nesting barges, captured an image of an adult least tern with bands from 2017," says Insiyaa Ahmed, a member of the environmental stewardship team at the Army Corps' Rivers Project Office in West Alton, Mo. "This is the first confirmation we have of a returning tern banded at Riverlands."

Biologists have been monitoring and banding least terns at the migratory bird sanctuary since 2009 when they set up a nesting barge for habitat and research in the middle of Ellis Bay. One confirmed case of a tern returning over a 10-year project period may not sound like much until you consider this: There have been no documented or confirmed nesting successes in the wild on the Upper stretches of the Mississippi from roughly St. Louis, north, since the 1960s. The only exception was a successful nest in Pool 24 between Clarksville and Hannibal, Missouri, at another Corps-run project affiliated with its Environmental Management Program that lowered the navigation pool to expose mudflats for vegetation and migrating birds.

The interior population of the least tern, just eight inches long when full grown, has been on the endangered species list since 1985, increasing its visibility and making it a conservation priority for federal agencies working on rivers within the central U.S.

Overall population numbers have since risen dramatically on the free-flowing lower river, but the bird remains in peril on the impounded northern stretches. There, the locks and dams that keep the river navigable for barge traffic and commerce have changed the hydrology—and nesting habitat. The river no longer forms natural sandbars as it once did, and that's the bird's preferred nesting habitat, said Ryan Swearingin, the wildlife biologist who heads up the tern barge project.



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The project at Riverlands seeks to mimic nature in a particularly unusual—but so far effective—way. Biologists built a modified sandbar on top of an old steel barge that was retired when the Corps purchased a new navigation dredge. Teams took everything off the deck and covered it with a four-inch layer of sand, seeking to replicate the substrate of a Mississippi River sandbar. They added driftwood and placed it strategically around the barge to offer a place for tern chicks to get out of the sun and potentially avoid predators. The fledglings are kept safe, too, from predators, too, in a particularly extreme way. An electric fence was set up last year after a greedy mink snuck onboard and wiped out an entire year's worth of nesting chicks last year.

"We partner with the World Bird Sanctuary and staff that have a master bander permit; it allows them to put leg bands on birds, and we coordinate with them," Swearingin said, adding the bands are tiny enough to go on legs roughly the size of the tube inside an ink pen.

The record number of chicks banded was 65 in 2017, and while this year they stopped at 46, more continued to hatch in spite of an unexpected challenge. One of the two barges that had been linked together for the platform sprung a leak and had to be hauled to shore for repair, leaving a smaller platform. River flooding may have made up for that, Swearingin notes, given "we were the only show in town" with suitable nesting habitat not inundated by the flood.

Gathering evidence of a particular tern's return is tough since they tuck their (tagged) leg under a wing when flying. But then the cameras caught the red band—the color tagging crews used in 2017—offering more hope of project success.

"This was initially started to hopefully bolster the local population," Swearingin notes. "The larger the colony can get, the more easily they can ward off predators. If these artificial habits and habitat restoration could help lead to a de-listing of the species, it would be a great thing." —K.S.



ABOVE, CLOCKWISE FROM TOP LEFT: The nesting barge floats in Teal Pond within the Riverlands Migratory Bird Sanctuary. Surrounded by fencing, it's not as scenic as a traditional river sandbar, but it's far superior when it comes to offering protection from the tiny least tern's many predators. The project which includes banding tiny legs no larger than the tube inside an ink pen, is helping to develop a sustainable colony on the Upper River that might not need such artificial nesting help. The photo, bottom right, offers visual evidence of project success. This bird, banded in 2017, returned to the barge to nest.



**THE PERSISTENT HIGH WATER LEVELS** of the Mississippi River this year are generally good news for its watery residents able to go with the flow to new and sometimes better habitat. Though flooding can take a toll on the restoration projects built to improve their lives, in all that water lies some unique opportunities to benefit habitat as well.

Dr. Jack Kilgore, research fisheries biologist at the U.S. Army Corps of Engineers' Engineer Research and Development Center in Vicksburg, has seen more than 200 days above flood stage on the Lower Mississippi at Vicksburg. And that, he says, is mostly good news for the creatures he studies.

"Floods are food for fish," Kilgore said. "More water means access to more habitat, more food, and more reproduction." The broad floodplain and the deep river channel of the Lower Mississippi are ideal habitat for "big river" fishes, such as shovelnose and pallid sturgeon, flathead and blue catfish, and alligator gar. They are used to living in swift flowing water, so the 2019 floods enhance their populations.

At the northern end of the river, the high waters are offering a rare opportunity for "big river" fish species to pass through the navigational lock and dam system unimpeded. Nick Schlessler, large lake biologist with the Minnesota Department

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—DR. JACK KILGORE



of Natural Resources, has already seen paddlefish that were tagged in Pools 14 and 16 in southern Iowa arrive 300 miles upstream in Pool 4 at Lake Pepin, Minnesota.

The final survey results for 2019 may show reduced populations of species like sauger in Lake Pepin as those populations take advantage of the open river conditions to keep moving upstream. In 2011, Lake Pepin experienced a significant drop in its resident sauger population when a fair number of sauger moved into Pool 3 during high water.

He also anticipates they might find the skipjack herring, a Minnesota state endangered species, in this year's population surveys. This silvery flat-sided fish was considered extirpated from the upper reaches of the Mississippi by 1928 and reappeared after record floods of 1986 and 2011. The survival of the skipjack herring is essential for the ebonyshell mussel, another Minnesota state endangered species, and one that depends on the fish to complete its lifecycle.

### Invasive carp also go with the flow

There is a downside to all this new fish access. State and federal managers are watching carefully for the high water impacts on distribution of invasive big-head and silver carp—the fish no resources expert want to see further spreading. Kilgore expects the current floods to contribute to the upstream movement of their populations. "The Lower Mississippi is a buffet for Asian carp" he said. "The high water creates more places for them to swim, forage, and spawn."

Mark Cornish, Chief of the Environmental Planning Section at the U.S. Army Corps of Engineers Rock Island District works on an interagency group seeking solutions to Asian carp. He is concerned that these carp have moved upstream through Lock and Dam 15, which has been open for more than 90 days this year. In normal years, it is closed 95 percent of the time.

"Once the researchers can regain access to receivers, the data on the fish's movements is going to tell us an awful lot about how we could potentially manage dams in future to reduce fish movement or at least understand it," he said.

### Floods affect habitat restoration too

Projects designed through the Upper Mississippi River Restoration Program on the Upper Mississippi River are designed to take fluctuating water levels into consideration says Karen Hagerty, who manages the project's science and long-term monitoring elements. But this year's flood may have tested that resiliency.

# Fish like floods



CLOCKWISE FROM ABOVE: Fish species like the ancient shovelnose sturgeon love fast-flowing water that comes with floods, says fisheries biologist Jack Kilgore (FAR LEFT). Fish including sturgeon and paddlefish can get entrained in the spillways designed to relieve flooding pressure on the river, so fish biologists including Killgore hold a rescue effort as spillways close. On the upper river, open river conditions at lock are great for species like the skipjack herring that can reach new spawning grounds.

"Our evaluations have just begun but a number of projects, completed or under construction, may have been affected by the high water conditions this year," Hagerty said. "But while some construction has been delayed a few weeks, no projects in the Rock Island District have been deferred."

While fish respond well to natural flooding, it also increases sedimentation, which can rapidly fill in deep areas during high water, said Dan Dieterman, Mississippi River habitat specialist with the Minnesota Department of Natural Resources. While the river will carve a new deep area when that happens, it takes a while. The portions of the river with a managed channel are less able to recreate that important type of fish habitat unaided, he said. Planted trees are especially hard hit.

Despite its challenges, high water may provide an opportunity to address a pressing habitat need on the Upper Mississippi. Dieterman describes the loss of periodic low water conditions that allow mudflats and sandbars to grow as the number one challenge for habitat in the Upper Mississippi.

"Surprisingly, under existing management policies, drawdowns can only be done with high water flows," he said. "With more water in the river, it is easier to maintain navigation and still lower the water level. Potentially, there is more opportunity with high midsummer flows, such as we are seeing this year." —D.D.





## Projects draw attention to plastics in the Mississippi

**In a laboratory just downstream** from the Melvin Price Locks and Dams in Alton, Ill., Dr. Anthony Dell peers down the microscope at countless tiny, colorful pieces of plastic, so little as to potentially go unnoticed, while nearby, plastics of a more familiar form float.

Instead of the fish and invertebrates scientists generally study here at the National Great Rivers Research and Education Center, he and colleagues have instead floated white plastic bowls like you'd use for a picnic, bright red Solo cups, chips bags and water bottles—all to test how quickly each type of plastic breaks down and what that might mean for the countless critters and humans that ingest what remains.

Dell is a research scientist at NGRREC and is leading development of the new "Mississippi River Plastic Pollution" (MRPP) consortium that includes partners at Lewis and Clark Community College, Saint Louis University, and a forensic science laboratory at the University of Staffordshire in Great Britain that specializes in the breakdown of plastics and microplastics—applying expertise gained in CSI cases to the health of those who depend on the river. Photos of the new projects underway in NGRREC's mesocosms—controlled outdoor laboratories that mimic natural conditions—aren't going to capture the imagination in the same way as a dolphin or sea turtle tangled in a plastic grocery bag. But the results have the potential to be every bit as startling.

Microplastics, generally no larger than a Mardi Gras bead, can fill the guts of animals, making it difficult for them to consume normal food. They also are known to attract other pollutants like a magnet. That magnifies the potential poisons for anything that ingests them. And they come from so many sources—from the breakdown of bags and bottles to tiny plastic beads found in things from fleece jackets to toothpaste—that they're ubiquitous in water column and river sediment. Even so, the impacts have rarely been studied or focused on in freshwater systems—until now.

Some 100 Great Lakes mayors recently called upon manufacturers to halt use of microplastics in personal care items. Mississippi River mayors through the Cities and Towns Initiative have launched their own project, one that includes the United Nations as a partner, to both improve plastic recycling capabilities in river towns and to convince plastic-producing companies to pledge to reduce usage by 20 percent.

"We're talking a basin that drains 31 states, and 40 percent of the Gulf of Mexico's plastic problem comes right out of the Mississippi River," says Colin Wellenkamp, the Cities and Towns Initiative's executive director. "This plastic waste as it makes its way downriver doesn't remain whole; it gets torn up, broken apart and turned into toxic confetti. The fish eat it, we eat the fish, it gets sucked into water treatment facilities, gets caught into water used for things like the beverage industry. It makes itself

known throughout the food chain."

No one sees the problem as vividly as those participating in river cleanups as their full-time job. One of the most shocking hauls of plastics came in a cleanup near Memphis, says Meghan Elgan, education and projects coordinator for the clean-up organization Living Lands and Waters. Volunteers collect tens of thousands of plastic bottles each year, and that's by far the majority of the tons of waste collected annually in U.S. rivers.

Researcher Dell said he'd heard plenty about plastics in the marine system, especially about larger pieces affecting sea birds and fish and marine mammals—but not much about plastics in freshwater or terrestrial ecosystems.

"Only for the last five to 10 years have scientists started exploring the plastic cycle in freshwater ecosystems," he said, "despite that 90 percent of plastic that ends up in marine systems coming from rivers."

Going forward, the MRPP consortium will concentrate on a few key themes related to understanding the "plastic cycle" in the Mississippi River basin, including where the plastic is found in the environment, which animals interact with the plastic, and what (if any) are the broader ecological effects. As an ecologist, Dell is especially interested in understanding how plastics are affecting river ecosystems and the countless microbes, plant and animals species that comprise them—many of which are central to the human society.

"Ultimately, our group hopes to contribute to an understanding of how much plastic there is in the Mississippi River basin, where is coming from and how does it move around, and what impacts it is having on the ecosystem, including humans" he said. "Is it changing species interaction and affecting structure of the entire food web? Or is it basically everywhere and not doing anything, which is of course possible, but is not what early work in this area is showing." —K.S.

ABOVE: Dr. Anthony Dell uses a mesocosm filled with Mississippi River water to see how quickly various forms of plastic break down.



### BE PART OF THE SOLUTION

- Pick up trash in your surrounding area.
- Bring your own reusable cups, straws, silverware, napkins and use when getting takeout meals or beverages.
- Avoid any personal care products that list "poly" as an ingredient.
- Use reusable grocery bags, sandwich bags, food covers and paper towels.
- Avoid purchasing fleece and other synthetic clothing and wait until it's actually dirty to wash the clothing you already own.
- Take the Living Lands and Waters challenge: [facebook.com/groups/livinglandsandwatersgroup](https://facebook.com/groups/livinglandsandwatersgroup)

SOURCE: LIVING LANDS AND WATERS





## LIFE ON A MISSISSIPPI DREDGE

# Long hours, close ties, and homemade

If you've ever been on or near the Mississippi River, you may have seen a striking configuration of boats nestled together, one that look like a four-star hotel with decks, chairs and staterooms attached to a large propulsion vessel. The other appears to be a loud industrious workhorse connected to nearly 10,000 feet of steel pipes, spewing water and sand onto shore. Combined, you get something like a little city in the middle of the river.

This "boat-convention" is home to 53 crew members, all of whom work to make it possible for everything from trade to tourists to move up and down the mighty Mississippi.

You are looking at the life, and the work, of a dredge boat team.

The Dredge *Goetz*, christened in 2005 and working near Davenport Iowa this day on one of a series of hazardously hot summer days, deepens the Mississippi River to at least nine feet to insure that large vessels, like barges, can pass easily. A hydraulic cutterhead spinning underneath the Mississippi's surface dislodges rock, sand and debris from the bottom on the river, turns it into a slurry, and sends it through a pipeline to the shore, creating massive sandbars used to restore wetlands and encourage riverside recreation.

Dredge crews work from the moment the river thaws to the beginnings of the winter freeze, operating 24 hours a day, seven days a week, with round-the-clock teams working 12-hour shifts. As this year's flooding has greatly increased the need for maintenance dredging, there are plenty of opportunities for overtime work, and many on the crew undertake these extra hours willingly. This year's flooding, says the dredge Captain Brian Krause, could easily surpass 1 million cubic yards of

sediment moved, by the *Goetz* alone, and it is one of several dredges working on the Mighty Mississippi.

### A close-knit lifestyle

Dredge life is a world of hard hats, shared rooms, long hours and intense camaraderie, as crew members get to know each other on an intimate level that resembles the familial. Mike Siebel, dredge leverman, says that he "can tell you more about this crew's eating habits than I can my own son's."

The teams, which travel from the *Goetz* to their lodging on the Quarters Barge Taggatz via motorboats for breaks, meals, and shift changes, work together for seven twelve-hour consecutive days, returning seven days later to repeat the cycle.

Some, like Cook Steward Ilona "Loni" Moen, are going on a three-week stretch without a break. No replacement cook could be found, and Moen is dedicated to the crew, despite having to miss two major family events. "We give up a lot to do this job" adds Susie Tsolakov, Cook Assistant and former Cabin Attendant, who still tries to maintain the condition of the ship's laundry room, lounge, and other facilities even as she works full time in the kitchen to fill in the slack until a vacant cabin attendant position can be filled. Tsolakov, too, feels committed to her crew. One year, she put up Christmas decorations to cheer teams working over the holidays. Today, she has baked chocolate chip cookies for crewmen to sample while on break.

While the crew does experience the downsides of being far from family for extended periods of time, they also tout the benefits of life on the river. Team





## Have your say on river flooding and sediment

The Rock Island District of the U.S. Army Corps of Engineers is joining with the Upper Mississippi River Basin Association to address the disruption of river communities, farmers, shippers and local residents from an increase in major flood events and increase in need to dredge the sediment in a rather unusual way: simply listening.

The groups have been hosting Saturday “open space” events in which people who come set the agenda and lead discussions. There’s no presentation at all by experts. Instead, conversations have and will focus on reducing flooding risks, maintaining the navigation channel, reducing river sediment and preparing for a future of long-term drought. Attendees are asked to share what impacts to them have been and how residents and leaders can come together to better address the issues.

The open forums begin in July and continue Aug. 24 in Godfrey, Illinois, at Lewis and Clark Community College and Sept. 7 at Cape Girardeau, Missouri, at Southeast Missouri State University. Thoughts can be shared online, too, at: [mvr.usace.army.mil](http://mvr.usace.army.mil).



## The Dredge Goetz by the Numbers

- 4** Women on Crew (out of 53)
- 3** Minimum number of years it will take to complete dredging due to this year’s flooding
- 26** Rooms on the *Taggatz*
- 7** Rooms on the *General Warren*
- 30** Loaves of bread baked per week
- 4,000** Dollars spent per week on groceries
- 10,000** Gallons of potable water on the *Taggatz*
- 146,000** Cubic yards of sediment dredged from the floor of the Mississippi River in a 12-day period (most recent job)

# cheesecake

members say they love working on the water, traveling to new places, and running their equipment with efficiency and competence. Many spoke of the excellent health and retirement benefits that their jobs provide.

Meals, though, came up often as an advantage of life on the *Goetz*, thanks to Moen’s flair and creativity in the kitchen. Tenderloin steak, meatballs with mashed potatoes and corn, and Moen’s cheesecake are all crew favorites. Only one “fail” was mentioned—a gumbo.

“We don’t have many southerners on this boat,” reasons Moen, who crafts an eight-week rotating menu but confides that “I wing it every week.” For example, with today’s weather soaring once again over 100 degrees, lunch’s scheduled lasagna will be replaced by a salad and sandwich bar.

The brains behind these steak-and-cheesecake-loving sailors is the ebullient Captain Krause, who boasts 23 years’ experience on the river, during which time he has occupied every position on the dredge with the exception of leverman. While Krause, sporting a brand new and still-itchy rope tattoo on his forearm, enjoys all parts of his job from PR to paperwork, his favorite role is piloting the propulsion vessel, the Motor Vessel *General Warren*, which packs 3,000 horsepower. “It’s a totally different mindset being away from the computers and many busy workers,” he says. Also, the view is spectacular from the pilothouse.

Krause, who knew the four previous dredge captains from the St. Paul District where he and the dredge *William A. Thompson* and the *William L. Goetz* both originate, is very connected to his crew. Tzolakov, who also happens to be an LPN, previously worked at a local nursing home and helped care for Krause’s father at the end of his

life, and one of the previous captains was the father of Krause’s good friend. Many on the crew have relatives in the industry who worked with the Captain in the past.

Krause loves to see his crew take pride in their work. “People have no idea what we do,” he says, noting that he loves to share information about dredge life. It’s important, he notes, for the public to be aware of the service his team provides.

And a close team it is. A death in someone’s immediate family is always followed by a group donation of some kind. When Siebel’s father died, a massive wreath appeared at the funeral, even though none of the *Goetz* team knew Siebel’s dad personally. When Krause’s dog of 17 years died, full time Engineering Equipment Operator and part-time woodworker Channing Helgeson made a soapstone memorial to his captain’s companion, the artwork now displayed prominently on Krause’s desk. Helgeson has gifted his creations to various other crew members, including a mini-computer replica for Administrative Assistant Support Vincent Perez, a reticent, soft-spoken man with a dry sense of humor who, it has been reported by anonymous sources, “is fun to have a beer with.”

Krause’s 12-hour shift is nearing its end. It has been a busy day. Groceries have come in from the Riverview Boat Store in Bellevue, Iowa, and need to be transported and unpacked. The *Goetz* has finished one cut and must be moved upstream to begin again. All pontoon pipes must be dismantled and repositioned.

While the *Goetz* never takes a break, Krause gets to—at least for a few hours. Tonight, he, together with Perez and Thomas Burrow, St. Paul Survey Technician Inspector, will head into Davenport, IA rest their sea legs a bit, and watch a baseball game. The River Bandits are playing. —L.H.C.





## National Loon Center moving toward reality

*The quavering wail* of the common loon epitomizes the sparkling lakes and wilderness spirit of the Mississippi River headwaters. Its continued presence is threatened by human disturbance and pollutants such as lead and mercury. But new hope for the loon's future is rising on the shores of Cross Lake, Minnesota, where a community partnership has formed to celebrate, protect, and study loons.

The National Loon Center is dedicated to the survival and protection of loons and to educating people about how they can help. It will be located on the U.S. Army Corps of Engineers' Cross Lake Recreation Area, which adjoins the lakes where one of the largest migratory gatherings of loons occurs.

Leah Heggerston, executive director of the National Loon Center is excited about the project's prospects. "For Minnesota, it seems perfect as the loon is the state bird," she said.

The popular recreation area already includes a 122-site campground, day use area, boat ramps, and accessible fishing pier. The Center will encompass an interpretive center, outdoor demonstration areas, and a freshwater education/research center. Other features will include docks, floating boardwalks, and outdoor exhibits, bird sanctuaries and a floating classroom to study water quality and invasive species. The center will operate year-round through an onsite partnership with the Corps and the Brainerd Lakes Area Chamber of Commerce.

The summer of 2019 saw two vital steps in creation of the center. The Minnesota state legislature appropriated \$4 million from the Environment and Natural

Resources Trust Fund towards a National Loon Center. The U.S. Army Corps of Engineers presented a 25-year lease to the National Loon Center Foundation for use of land within its Cross Lake Recreation Area. The grant from the state of Minnesota will go toward the shoreline restoration and non-building features of the Center.

"Having the boat dock and boardwalk in place will continue public access while allowing the shoreline to be protected for water quality and loon habitat," said Becca Nash, director of the Legislative-Citizen Commission on Minnesota Resources. The LCCMR makes recommendations to the Minnesota legislature for how the Environment and Natural Resources Trust Fund dollars should be spent.

The newly completed no-fee lease is a first for the St. Paul District of the U.S. Army Corps of Engineers.

"We determined that construction of the National Loon Center fits with our mission," said Will Wolkerstorfer, project manager for the U.S. Army Corps of Engineers - St. Paul District. "It will promote our environmental stewardship responsibilities and won't impact existing recreation." An immediate benefit will be the replacement of the old day-use restrooms.

A separate partnership agreement between the U.S. Army Corps of Engineers and the National Loon Center will establish the details for use of the land for the shoreline restoration, docks, boardwalk, and outdoor exhibits. With that agreement in place, construction could begin in the fall of 2019, after the main tourist season. Partnerships will continue to be key as the project develops.

"It's awesome working together," said Corrine Hodapp, the U.S. Army Corps of Engineers Cross Lake Recreation Area manager. "The collaboration will help greatly with education and public outreach."

Heggerston highly praises the project's many partners. The Center and the University of Minnesota are already working on water resources curriculum together. The University has been instrumental in the center's feasibility and market studies. Formation of a scientific loon council is already underway. Community organizations, university, and state and federal agencies are also engaged.

Project completion is targeted for 2022 and will require a total investment of \$10 million. The National Loon Center Foundation launched a capital campaign on July 20 to raise the balance needed. [NATIONALLOONCENTER.ORG](http://NATIONALLOONCENTER.ORG) —D.D.



**Vince King, Elvis Tribute Artist  
Houston, Texas**

"I've been an Elvis tribute artist for more than 15 years, and it's wonderful to see fans of all ages smiling and singing along. There's this whole other Elvis world out there, a huge hard-core community of fans, and thousands of them come together each August for Elvis Week in Memphis. I do about 150 shows a year, and two years ago I was named Grand Champion at the Elvis Presley EXPO Competition and People's Choice Winner at the King of the World contest in Memphis.

"Elvis had that special something, that indescribable 'it' that a charismatic few have. But he also had enormous talent: a richness in his voice, which was why his music has endured. So I do my best to respect Elvis' image, his music, and all he did. I've studied his moves, mannerisms, the way he stood, the way he moved his hands, and the way he held his mic. When I perform, it's all about giving his fans a chance to experience what an Elvis concert was really like. You know, the Mississippi Delta and its gospel tradition inspired so much of his music: its roots speak to the story of the South, but Elvis' gift made it America's music too and shared it with the world." —J.T.

LOONS: KIM SCHNEIDER.



ABOVE: This architectural rendering shows the airy interior space of the National Loon Center being planned in partnership with a U.S. Army Corps of Engineers recreation center.



# Keeping the river *natural*

## Master plan manages the tricky play/protection balance

Some of the most pristine stretches of the Mississippi River—favorite recreation lakes and dramatic bluffs with distant views—lie within the 240-mile stretch from Minneapolis to Guttenberg, Iowa. It's a migratory flyway (in some cases permanent home) to 325 species of birds, home to 118 different types of fish and rare species of mussels, and the location of many historic resources, not surprisingly since humans of every era have picked rivers as transportation and settlement hubs.

How the U.S. Army Corps of Engineers will manage and protect the lands and also walk the tricky balance between protection and access for recreation is the impetus behind a new master plan. While the Corps has multiple missions relating to the river, this plan guides the use and development of natural and recreational resources of some 52,000 acres of Corps-managed land. A companion plan being updated as well classifies management actions on federally owned lands.

The public offered input on what they'd like to see in the plan at a series of meetings held through July across the project area. Many comments focused around a new bicycle path, the desire for more and better sandbar beaches and continued access for paddling, fishing and hunting, said Megan O'Brien, the Corps' plan formulator. The public will have another chance to give their input on the draft plan later this year.

While most public lands will continue to be managed for multiple purposes, classification is helpful in future decision-making, says Trevor Cyphers, fishery biologist and head of the report's environmental sections.

"If a certain parcel of land is classified for wildlife management, ourselves or the Fish and Wildlife Service will try to focus on restoring native species, giving them best chance can to sur-



**Brian Gray, Lockmaster  
Lock and Dam 2**

"As a child we would go to Lake Pepin every once in awhile. I would see the river from the pontoon point of view. It didn't dawn on me there was a towing industry; it was simply pleasure. But I've seen all aspects of it now.

"I became lockmaster in 2012. What strikes me most about my job is the technology of how this whole place was constructed. To have the capability of building this even today seems like it would be a major undertaking, but to be able to have done it almost 100 years ago is pretty amazing. And yet it's a pretty simple operation. We just use gravity to raise and lower our lock chamber.

"The towing industry runs 24:7, and we never know when tows will be here. There are challenges sometimes. We have high flows right now, and sometimes it's hard for tows to get to the wall. The river wants to carry them out toward our dam. But it's pretty amazing what these pilots can do. We can be conversing with them that whole time, and you get a pretty good feel for what their life is like. They work six hour shifts, six on and six off every day. Used to be in the day we'd save our newspaper and give it to them so they'd have news to read. Now they're on cell phones, so it's kind of obsolete.

"What's coming upriver is fertilizer, concrete material, and going down would be oats, corn, soybeans, oil products and scrap from the Twin Cities. It's interesting, like the fertilizer for instance. You see it as a chemical coming up river and don't think about it, but it's critical for all the farmers in the Upper Midwest. You realize how important it is for the river to remain viable.

"We get visitors, too. A traffic counter at our parking lot shows we get 50,000 cars driving down here a year. Water does something to people, and you never know what you'll see. Eagles are here. Heron. You see otter once in awhile and some mink. Or you'll see a coyote going across the ice, or an eagle catching fish and flapping wings across the water to get it to shore.

"Right now, My Mississippi is the reason I get up in the morning and come in here every day. It's a challenging job, and I love it. I love the fact I can be outdoors and combine the beauty of the river with actually doing my job. I'm a lucky guy."



Master plans help keep the river attractive to both wildlife and the people increasingly drawn to the Mississippi for recreation.

live," he said. "If an area is classified for low-density recreation, a place where there are a number of beaches or bike trails, that helps us determine what to do there too."

The National Historic Preservation Act of 1966, as amended, requires that federal projects take cultural and historic resources into consideration, said Vanessa Alberto, a Corps archaeologist heading up that section of the report. The focus for the Corps when it comes to historic resources is the protection and preservation of resources such as shipwrecks or Native American and other historic artifacts. The Corps also preserves history through educational resources like interpretive panels on such topics as the pearl button industry, the historic locks and dams themselves or reminders of eras like the fur trade.

"We have information going back 13,000 years we knew that people were living in the area—that's when the most recent glacial advance retreated," Alberto said. "From then up until today, the river has continued to be used."

The master plan, she says, is the baseline guiding document for how the Corps manages the river and Corps-owned lands into the future. —K.S.

**FOR MORE:**

[mvp.usace.army.mil/  
UpperMississippiRiver  
MasterPlan/](http://mvp.usace.army.mil/UpperMississippiRiverMasterPlan/)

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usace.army.mil](mailto:UMRMasterPlan2019@usace.army.mil)



OUR MISSISSIPPI KIDS

# How to make a bird feeder at home!

## Pinecone bird feeder

### What you need

- Pinecones
- Nut butter or vegetable shortening
- Bird seed mix
- Twine, string, or yarn

### Instructions

- Clean your pinecone by shaking off any dirt or broken bits. Tie a long piece of twine or string to the base of the pinecone. It should be long enough to hang the pinecone from a tree branch or porch. Smear the outside of the pinecone with nut butter or vegetable shortening. Try to get it inside all the gaps!
  - Pour bird seed mix into a shallow container. Then roll the covered pine cone in the bird seed mix.
- Hang the bird feeder from a tree or from your porch. (Avoid using very thin string, such as fishing line, to tie up your bird feeder because it can create a tangling hazard for birds.)
- Watch for birds visiting your feeder!

## Citrus Bird Feeder

### What you need

- Citrus fruit like oranges or grapefruit
- Bird seed mix
- Wooden skewer
- String or twine

### Instructions

- Cut the citrus fruit in half and scoop out the fruit, leaving only the rind intact. It should look like a small bowl.
- Poke three evenly spaced holes along the upper edge of the citrus half, and loop long pieces of string or twine through the holes.
- Poke the skewer through the citrus horizontally to create a perch for the birds.
- Fill your bowl with bird seed mix. Keep your string out of the way so you don't accidentally bury it under seed!
- Hang your bowl outside from a tree or other structure.
- Watch your feeder for birds throughout the day—especially in the mornings and evenings as birds are more active during these times.



## Send us pictures of birds at your feeders!

[editor@ourmississippi.net](mailto:editor@ourmississippi.net)

## Can you see the **dino** in that bird?

Look more closely at the next bird you see heading down the Mississippi River flyway, and you might be getting a glimpse into the ancient past. Experts say that dinosaurs almost all had bird behaviors. Fossils from the Archaeopteryx (the oldest known bird, shown in a 3D rendering at right) show marks left by feathers, and experts have correlated bird behaviors with many other dinosaur species. Plant-eating dinosaurs would feed young for several weeks so they could grow from their birth size of 16 inches to four feet before leaving the nest. The remains of two carnivores found since their remains were buried in a sandstorm found them in the position still of brooding eggs on their nest—just as birds do. From eagles to hummingbirds, birds are the most successful and varied branch of the dinosaur family. SOURCE: BIRDS OF THE UPPER MISSISSIPPI RIVER AND DRIFTLESS AREA (STORIES FROM BIG RIVER MAGAZINE).



Archaeopteryx, 3D rendering



Great Blue Heron



Bald Eagle



Sandhill Crane

Match the dinosaur-like bird with a key feature of its modern-day behavior.



*Can dive at speeds up to 100 mph*

*Cleans itself with mud, dances and bugles*

*Snares prey by walking slowly or standing still for long periods of time*



# Follow the river-inspired blues trail



ABOVE: “Kingfish” Ingram performs at Club Ebony, one treat awaiting on the Mississippi Blues Trail. RIGHT: Lucious Spiller plays at Red’s in Clarksdale. BELOW: More iconic trail stops.



**O**n stage at Club Ebony in Indianola, Mississippi, with the image of B. B. King grinning over his left shoulder and a few hundred admirers sitting within 20 feet, Christine “Kingfish” Ingram belts the blues. A Clarksdale, Mississippi, native who is barely two decades old, is the up-and-coming bluesman who is reviving the Delta blues while his career explodes simultaneously. His head shuffles from shoulder to shoulder while his guitar and voice howl and groan the stories of the Delta.

At a time when the blues might be considered a dwindling genre, heat is rising in Mississippi thanks in part this Clarksdale native and to the Mississippi Blues Trail.

“So many blues lyrics are personal expressions of direct experiences with what life throws at you,” states Greg Johnson, Blues Curator at J.D. Williams Library in University, Mississippi. “The river symbolizes so much to folks in the Delta. It’s still a force to be reckoned with.”

See how the river and the blues are intertwined as you explore more than 200 trail markers in Mississippi alone noting artists, clubs, historic events and more along the Mississippi Blues Trail, starting with The Gateway to the Blues Visitor Center in Tunica.

Robert Johnson sold his soul to the devil for guitar prowess to New Roxy’s tale of Sam Cooke being born close by to the Riverside Hotel (once the hospital for blacks) where Empress of the Blues Bessie Smith died after a car accident, the city tells each story proudly. Downtown accommodations like Travelers Hotel as well as the rural Shack Up Inn let you lounge in history while restaurants like Hooker Grocery, Abe’s BBQ, and Our Grandma’s House of Pancakes fuel your body and fill your soul.

But you might say it all started—as B.B. King exclaimed—at Dockery Farms in Cleveland, when Charley Patton’s moved there to work as sharecroppers and the redefine the delta’s gift with a voice that would be as mighty as the river.

Patton’s gruff, loud voice established the cathartic blues sound as the river carried him away from the working plantation life and directed him toward juke joints (now called juke joints) along the river’s cities, where drinking, dancing and relaxing were key. The blues became a soundtrack of expression, where lyrics and melodies captured the suffering, anguish and hopes of the sharecroppers. His most popular song “High Water Everywhere” mourned the Mississippi River flood of 1927. “The water at Greenville and Leland, it done rose everywhere,” he sang. “I would go down to Rosedale, but they tell me it’s water there.”

Others would continue the legacy. South to Indianola at the B.B. King Museum and Delta Interpretive Center, you learn of King’s beginnings in the cotton fields, his days at KWEM in Memphis and his road to being named the King of the Blues. Pay your respects at his burial site, just outside the museum, and finish the night at Club Ebony where King played as a young man.

This night, it is the young performer Kingfish on stage, the one many believe will reinvigorate the blues scene with his dazzling guitar and gut-wrenching vocals. He affirms the claim of Johnson, the blues curator, that as long as young audiences keep re-discovering the blues, it will never die and the future is wide open. —J.G.

## Festivals not to miss

### September 20

Mississippi Blues Festival, Greenville, Miss.

### October 17-20

Deep Blues Fest & Delta Busking Stages [DEEPBLUESFEST.COM](http://DEEPBLUESFEST.COM)

### October 17-19

Mississippi Delta Tennessee Williams Festival [DELTAWILLIAMSFESTIVAL.COM](http://DELTAWILLIAMSFESTIVAL.COM)

### December 6-7

Burdine’s Blues & Greens Festival at Shack Up Inn [BBGFESTIVAL.COM](http://BBGFESTIVAL.COM)

### April 16-19, 2020

17th Juke Joint Festival [JUKEJOINTFESTIVAL.COM](http://JUKEJOINTFESTIVAL.COM)



BLUES TRAIL PHOTOS: SEEING SOUTHERN PHOTOGRAPHY.

There you get an overview of the trail—and the genre itself.

“The museum serves to educate the blues historian and the blues novice on the history and the origin of the music that was developed out of the cotton fields of the region,” says Webster Franklin, president of the Tunica Convention and Visitors Bureau.

If there ever was a city rooted in the blues, though, it is Clarksdale, Mississippi. Tagged “Home of the Blues,” Clarksdale promises live music 365 nights a year in venues like New Roxy, Levon’s Bar and Grill, Ground Zero, and the legendary Red’s Juke Joint promising cold beer and sizzling blues from local favorite Lucious Spiller.

Thanks to the music, this once dying town is experiencing a renaissance. From the Crossroads (Highways 61 and 49) where

FOR MORE:  
[msbluestrail.org](http://msbluestrail.org)



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### Welcome the new Commander

Maj. Gen. R. Mark Toy is the newest commander of the Mississippi Valley Division of the U.S. Army Corps of Engineers. Toy took command in late July from Maj. Gen. Richard G. Kaiser, who has been assigned

as Deputy Commanding General for the U.S. Army Corps of Engineers in Washington D.C.

Toy, highly decorated for both his domestic and military posts, comes to Vicksburg from Cincinnati, Ohio, where he most recently served as commander of the Corps' Great Lakes and Ohio River Division. During that assignment, he was temporarily deployed to Kabul, Afghanistan, where he led a task force comprising Army Corps personnel and the Joint Improvised Explosive Device Defeat Organization. He previously had served several posts, domestically and abroad.

As MVD's 40th commander, Toy will be responsible for the Corps' water resources programs in a 370,000-square-mile area that includes portions of 12 states.

In addition, Toy will be president-designee of the Mississippi River Commission, the presidentially appointed agency that oversees the comprehensive Mississippi River and Tributaries flood control and navigation project, as well as the entire Mississippi River and its tributaries.

### Record flooding crushes duration records

The entire Mississippi River basin flooded this year in what Jared Gartman, chief of readiness and contingency for the U.S. Army Corps of Engineers Mississippi Valley Division called a "total system flood" that crushed records for duration on much of the river and had caused \$2 billion in damages by just the end of March. That doesn't include the cost of repair of the more than 30 levees damaged along the river.

Gartman joined river mayors with the Mississippi River Cities and Towns Initiative in a summer press conference to discuss the unprecedented impacts. The flood fight was the longest on record for New Orleans at 240 days of active flood fighting by just June, and water levels didn't start falling until July 29. In that district, the Corps opened the Bonnet Carré Spillway twice for the first time since its construction in 1931. Impacts, though, were spread up and down the river into towns like Alton, Illinois, where floods idled some 700 workers, and Greenville, Mississippi, where 14 sewage pump failures in impoverished areas created havoc. The single bright spot was the cooperation across levee districts as well as volunteerism.

"This is a great example of the Midwest," said Mayor Frank Klipsch of Davenport, Iowa, Co-Chair of the Mississippi River Cities and Towns Initiative. "All people are coming together to not only help with the immediacy of the problems, but then redoubling their efforts to help people get back into their businesses."

### TNC tool targets restoration priorities

With limited funding for restoration, coupled with growing needs, decision makers look to find the spots where their work will have the greatest impacts on areas like wildlife habitat, flood risk and wildlife quality. The Nature Conservancy is helping out with a new interactive, web-based and data-driven tool that seeks to identify such places in the Mississippi River Basin.

TNC's tool draws upon a recent TNC analysis of comprehensive flood risk to allow users to interactively choose subsets of data layers of interest to them and view the resulting effects on the portfolio of priority sites identified throughout the basin.

The tool couples potential flood event impacts with other data to identify priority floodplains for conservation or restoration.

The tool also integrates spatial data depicting current and likely future development in floodplains to project estimated flood damages and population exposure. It also estimates potential losses to flooded agricultural lands and soon will also include information about projected changes in rainfall intensity, duration and frequency, and social vulnerability. Officials say the tool will be most useful when applied in partnerships with local planners and decision-makers; TNC currently is working with a U.S. Army Corps of Engineers-funded Silver Jackets Flood Risk Management process in Missouri to identify land for purchase for flood protection purposes.

Scan here with your smartphone to go to the Our Mississippi website. Here, you can subscribe to our e-edition, read past editions and find river-related education materials.



Send story ideas to [editor@ourmississippi.net](mailto:editor@ourmississippi.net)

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