Our Mississippi

PARTNERING TO KEEP AMERICA'S RIVER GREAT

Celebrate the **Year of Trails** along the Mississippi River

A TRUE COMPANION TO THE MISSISSIPPI RIVER,

a 3,000-mile trail follows the waterway on its journey from Minnesota to Louisiana. Starting at Lake Itasca and meandering south, the river and trail travel side by side through wide-open prairies and rolling green hills and pass by prim antebellum mansions and juke joints. As they make their final approach to the Gulf of Mexico, the trails make a worthy finale among colorful murals and a picturesque view of the New Orleans skyline.

The Mississippi River Trail is iconic, and for good reason. Visitors can travel along it, by bike and by foot, getting a snapshot of the geography and culture that define cities in the 10 states bordering the river.

As a nod to the importance of the trail that hugs the river's banks, as well as the hundreds of other trails that carve out their own routes near the river, 2017 has been named the "Year of

ABOVE: The Big River Crossing, connecting Tennessee and Arkansas, is the largest pedestrian/ bike bridge across the Mississippi; it's also popular for sunsets. Trails." The designation comes from The Mississippi River Connections Collaborative (MRCC), a joint effort promoting the treasured landscape of the river. That includes the nearby paths that wind through pine forests, limestone bluffs and wetlands.

"It's truly an American experience when one goes the length of the Mississippi River," says Terry Eastin, executive director of the Big River Strategic Initiative, which is a collection of projects to celebrate the Mississippi River and its surrounding landscape.

This year's spotlight on trails is well-timed, too: Tennessee and Arkansas recently welcomed a newcomer to the trail system, an engineering marvel that converted a historic closed roadway adjacent to an active rail line to a pedestrian and bike bridge. The 1.5-mile Big River Crossing that connects Memphis, Tenn. with West Memphis, Ark. is now the longest public pedestrian and bike bridge across the Mississippi River. It's also a remarkable viewing area for sunsets or a great watch tower if you want to pause and become hypnotized by the river's ever-changing landscape.

The bridge also connects to a newly opened 73-mile leveetop bike and pedestrian trail, making it the first time since 1893 that parts of the levee have been open to the public, according to Eastin.

Since about 2001, the growth and demand of trail systems has been exponential, Eastin says. In response to that growing interest, the "Year of Trails" will highlight and promote at least 100 events coordinated by MRCC partner organizations, including businesses, non-profit groups and government

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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.







CLOCKWISE FROM LEFT: This scenic trail runs through the Route du vin, a wine trail that encompasses six wineries in Ste. Genevieve County and also includes trails of the more traditional variety. Multi-use trails are increasingly popular along the Mississippi River, particularly those crossing the river or running atop the levees. The Mississippi River Water Trail stretches for 121 miles from Saverton, Mo. to St. Louis and includes this wildlife-rich stretch near West Alton. The Mississippi River Trail runs along or near the Great River Road for 3,000 miles of walking and biking beauty.



agencies. The events will including hiking, biking, running and paddling activities for youth and families, all aimed at showcasing the river. Plus, it will be an opportunity to educate the public about the trail systems, with lessons about responsible trail use. The events will also be used as a way for volunteers to take part in trail maintenance and upkeep.

Enhancing tourism—and health

The trails that weave their way around the Mississippi are valuable for a few reasons, Eastin explains. For starters, they promote good health, encouraging people to hike, bike, run and paddle. They also have the potential to increase tourism, enticing more visitors to plan a getaway anchored around a bucket list hiking destination or pull their car over and poke around with a hiking stick before finding a spot for lunch. The trails, Eastin says, are also a boon for the environment as they help reduce the carbon footprint with more people exploring by foot or bike, rather than automobile.

This year's focus on the trails is part of a running series of "year of" events coordinated by the MRCC. A brief history of how the events came about: In 2010, a formal Memorandum of Understanding was signed between the Midwest and Southeast Regions of the National Park Service and the U.S. Fish and Wildlife Service and the Mississippi River Trail, a group whose mission is to connect people and communities with the river. The Mississippi River Parkway Commission signed on a couple of years ago. While not an official signatory, the U.S. Army Corps of Engineers has been involved in many of the collaborative's projects.

So far, the "year of" events have been the most public aspect of the collaborative, drawing thousands of participants, perhaps teaching them a new skill or hobby, as well as piquing their interest in the Mississippi River.

The "Summer of Paddling" in 2012 was the first in the series, with kayaking and canoeing events along the Mississippi. (Among the events was a canoe trip captained by mascots from the Army Corps of Engineers, U.S. Fish and Wildlife Service and the St. Louis Cardinals). Other year-long series have focused on cycling and fishing. Last year was deemed the "Year of Birding," a tribute to the bald eagles, white pelicans and others that migrate along the Mississippi Flyway.

Just as diverse as the bird species are the types of trails you can explore along the Mississippi this year (and in future years). Take for instance the Quad Cities area, where, within a few miles you can go from a large urban area to being along the riverfront surrounded by bluffs, prairies and nature preserves, says Joe Taylor, President and CEO of the Quad Cities Convention and Visitors Bureau.

"We are very blessed to have riverfront trails along the Mississippi," he says. "You get both nature and the city here in the Quad Cities."

In Wisconsin, hike the high bluffs in Wyalusing State Park and you'll get a scenic view of the confluence of the Mississippi and Wisconsin rivers. At Reelfoot Lake State Park in Tennessee, naturalists will lead bald eagle and waterfowl tours through the flooded forest. Or, you can get a history lesson along the Civil War Trail at Columbus-Belmont State Park in Kentucky.

The wealth of trails offers a chance to be active most anywhere along the river, whether you're a visitor or you live along it, says Roxane Krutsinger, a natural resource specialist with the Army Corps of Engineers.

Think of this trails year as a choose-your-own adventure of sorts.

In addition to hiking, for example, the Mississippi Water Trail is a 121-mile water trail on the Upper Mississippi River around St. Louis, Missouri, where rustic campsites and picnic areas dot the shores. Or, the Great Rivers Greenway connects the St. Louis region with greenways which are great to explore by bike or foot.

Of course worthy of a visit, too, is the new Big River Crossing, which debuted in October 2016 and, already, is drawing up to 20,000 people a week who cross over the bridge between Tennessee and Arkansas. The Big River Crossing is part of a larger effort to have a single trail from the headwaters to the gulf that doesn't use roadways, according to Helena-West Helena Mayor Jay Hollowell. Parts of the existing Mississippi River Trail is on roads and atop levees, with off-road sections for bicyclers and walkers only.

Overall, the Mississippi River boasts more than 50 state parks, 60 national historic landmarks, 50 interpretive centers, 20 scenic overlooks and 124 mayorled municipalities, he notes.

"The more we can connect all these attractions, the better," Hollowell says. -B.A.

From culinary to cultural, you'll want to explore these trails, too.

Along the Mississippi River, thriving cities showcase their unique culture with various "trails." Worthy of exploring with the same gusto as Lewis and Clark, here are five trails of the non-woodsy

Beer-issippi trail in St. Cloud, MN: Here, you can get a taste of the mighty Mississippi—quite literally. The Beaver Island Brewing Company brews its beer with water sourced directly from the Mississippi. The brewery's name is a nod to the "Beaver Islands," which are a formation of islands in the river located near St. Cloud. The islands were discovered by Zebulon Pike, an explorer and the namesake of Pike's Peak in Colorado. The brewery's tagline? "Dam. Fine. Beer." As you navigate the burgeoning local craft beer scene in the St. Cloud area, another noteworthy stop is The Urban Lodge Brewery in Sauk Rapids, Minn. First order of business? Request a table on the rooftop patio; through the trees you can spot the Mississippi River. GRANITECOUNTY.COM.

> A biscuit trail in Natchez, Mississippi: This charming Southern city, perched on the highest bluff of the

Mississippi River, earned the righteous title of "Biscuit Capital of the World." In fact, the flaky, buttery biscuit is so famous here, it has its own festival, complete

with a biscuit queen. While you won't find a "biscuit trail" advertised per se, there are enough to plan a trip around. King's Tavern bakes pot-pies in a wood-fired oven, with a creamy sauce full of veggies and your choice of chicken or crawfish, with a bacon-thyme biscuit crust. Also worth a visit, Biscuits & Blues is known for its "hot biscuits and cool blues." And, at Natchez Coffee Company, breakfast biscuits are stars of the menu, and you can sample them with hot pepper jelly cream cheese or blackberry honey butter. VIS-

Route du Vin trail in Missouri: In all, Missouri has 125 wineries and 10 wine trails. But the Route du Vin trail is a topographical gem that neighbors the river, winding along the lush

countryside near historic Ste. Genevieve and featuring six distinct wineries. A trail stand-out is Cave Vineyard, where visitors can sip wine inside, you guessed it, a cave while listening to the babbling creek nearby. The winery believes French settlers mined the cave for Saltpeter to make gunpowder. RDVWINETRAIL.COM

A Blues Trail in Mississippi: Dozens of sites throughout Mississippi make up this trail, from the hometowns of musicians like B.B. King to clubs and churches where notable musicians played. The trail is getting applause from musicians, like blues singer-songwriter Bonnie Raitt who says visiting the sites can help you understand "why this music came out the way it did." And, electric blues and harmonica player Charlie Musselwhite says this of the trail: "It shows what Mississippi has given the world." Some of the stops near the river include one in Vicksburg at a storied night club known as the Blue Room and another in Natchez that pays tribute to Clarence "Bud" Scott, Sr. who led one of the most popular dance bands in the Mississippi-Louisiana region during the early 1900's. MSBLUESTRAIL.ORG

A Creole Crescent food trail in New Orleans: As a testament to just how

unique the culinary scene is along the Mississippi, consider this: Within Louisiana itself, there are eight distinct food regions, each of which gets its own food trail. The

> Creole Crescent trail will help you navigate the rich culinary scene of New Orleans—from the puffy, powder sugar-coated beignets at the iconic Cafe Du Monde to the Creole Filé Gumbo at Lil' Dizzie's Cafe, a lesser-known but equally impressive stop on the trail. For a dinner spot as cool as the city's jazz, head to Sylvain's for a scrumptious buttermilk-fried chicken breast sandwich. LOUISIANA TRAVEL.COM/CULINARY/CREOLE-CRESCENT -B.A.



Throughout the "year of the trails," dozens of events will take place on trails along the Mississippi, from hikes on wooded bluffs to paddling down water trails. Here's a snapshot of events that will be happening throughout 2017 to celebrate the trails. For a complete list: facebook. com/MississippiYearOf.

APRIL 29: The Itasca to Hubbel Pond hike is a 6.5 mile hike, covering the south section of Itasca State Park. This will be the first in a series of 12 hikes put on by the North Country Trail hiking group. A naturalist will guide the hike through the glacial landscape.

Details: The hiking event is scheduled from 12:30 p.m. to 4:30 p.m. Meet at the North Country Trail Head Parking at the South Entrance to Itasca State Park. DNR.STATE. MN.US/STATE PARKS



MAY 6: Hike the Mississippi Palisades State Park in Savanna, Illinois, where you'll come across wildflowers and get a view of the Mississippi River from the park's highest bluffs.

> Details: The hike will begin at 2:30 p.m. and will be led by the Blackhawk Hiking Club, which is leading numerous hikes throughout the year. Hikers will meet at the park's main pavilion. BLACKHAWKHIKINGCLUB.ORG

JULY 4: Take a walk over the Big River Crossing, a 1.5-mile bridge linking Memphis, Tenn. with West Memphis, Ark. The bridge is outfitted with more than 100,000 Philips LED lights, and can put on quite the color show. BIGRIVER CROSSING.COM

Details: The bridge will feature a special holiday display on July 4.



Sediment resettlement

St. Paul plan looks to 40 years of storage solutions

Events such as heavy rains, eroding river banks and even normal river cycles fill the Mississippi's river bottom with sediment. The constant flow of sediment creates an ongoing need to use mechanical or hydraulic dredging to keep the river deep enough to keep barge tows passing along the critical navigation highway.

The movement of sediment is most evident within the Chippewa River in Wisconsin, a main tributary of the Mississippi. Removing the material is vital to ensuring vessels can safely navigate the 9-foot channel. But where that material will get stored—or in the best case, productively used—is the subject of a new report, to be released this spring, by the U.S. Army Corps of Engineers' St. Paul District. The plan looks toward 40 years of potential accumulation.

The sand, or sediments, deposited from rivers like the Chippewa range in size from gravel to sand to fine clay, and they're the building blocks for the river's channels, wildlife habitat and much of the delta and coast. In Louisiana, the 2017 Coastal Master Plan calls for diversions of the Mississippi in ways that might let the sediment settle out and create critical coastal barrier lands. And all along the river, dredged material has been used to create wetlands, build islands, establish bird nesting grounds, sand icy roads and much more.

But with the identified need to remove 15 million cubic yards of dredged material from just the St. Paul District's Pool 4 and Pool 5 over the next four decades, easy solutions will need to be supplemented by more challenging ones, says Paul Machajewski, of the district's operations division.



"One of the current challenges facing the team is finding suitable land to permanently manage the dredged material that is removed from the Mississippi River," he said.

Creation of river islands, cities looking for fill material and other previously convenient and ecologically friendly storage solutions are becoming less obvious and even when used won't be enough to hold the expected volumes, leading to the likely need to acquire new land.

That's especially true in the area where the Chippewa River meets the Mississippi, near Wabasha, Minn.; there, a relatively younger river is cutting into its banks and producing sediment that flows into the Mississippi and settles out. Every year the district removes between 800,000 and 1 million cubic yards of material between Minneapolis and Guttenberg, Iowa, as a way to keep the channel at the authorized level of 9 feet. Nearly 40 percent of the material is concentrated just south of where the Chippewa River meets the Mississippi.

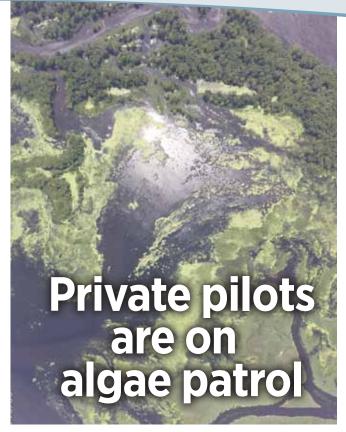
Acquisition of land is a sensitive issue, notes Craig Evans, the district plan formulation chief, and the district is working hard to find a balance between needs for people, the environment and a navigation system on which an inexpensive supply of goods and services depends.

"When you look at the macro scale, it's incredible the impacts these decisions can have on greater society," he said.

As the plan is implemented, the Corps will continue to look for ways to use the dredged material in beneficial ways, planners say. In the meantime, mounds of sand are yours for the taking.

"When it's cost effective to the American taxpayers, we'll look at areas such as island construction, provided we have support from our partner agencies," says Patrick Moes, district spokesperson. "In the meantime, we will still promote the free use of our dredged material for various projects to include everything from construction projects and fill material to winter road maintenance."

The Corps will be taking public comments on the plan this spring, posted at www.mvp.usace. army.mil/.



WITH A GPS-ENABLED CAMERA clipped to the small airplane he built in his garage, Dave Nelson—a retired engineer—took a series of flights over the Mississippi River, snapping aerial photos of algae blooms.

Nelson, of Rochester, Minn., is among dozens of citizen scientists who have volunteered for a NASA-led project, flying over waterways and gathering the data that is now helping scientists spot and monitor potentially dangerous algae blooms.

While algae performs a vital role in marine and freshwater ecosystems, scientists are concerned about a certain type of algae blooms: cyanobacteria, or blue-green algae. This toxic type of algae can affect drinking water, kill fish and prompt water closures, limiting recreation.

To help address the problem, NASA's Glenn Research Center launched a project where private pilots gather data which then becomes publicly available. Students, teachers, researchers, policymakers, and water quality managers from agencies such as the U.S. Army Corps of Engineers can then access the data from a site hosted by the University of Cincinnati, free of charge.

For his route above the Mississippi River, Nelson took weekly flights between April and September 2016, flying from Lake Pepin in Minnesota to La Crosse, Wisconsin. He was careful to fly the same route each time to gather consistent data. At times, what appeared to be algae from the air looked so thick you could walk on it.. While the flights alone can't discern if the algae is toxic, the images captured by private pilots can help pinpoint areas where scientists should take ground and water samples.

A main goal of the project is to develop an early warning system so that communities can monitor the algae blooms in their coastal neighborhoods, says Rafat Ansari, a senior scientist at NASA who is leading the citizen science program. The hope is to gather a comprehensive, coast-to-coast image bank that can help scientists predict water quality changes.

In 2011, Ansari and his wife were on a flight, traveling over the Ohio shore of Lake Erie. Ansari said his wife took note of how intensely green the water looked from above. When they landed, they had lunch at a restaurant that was near the lake, and they saw that the lake had been closed for swimming because of the high levels of bacteria.

That was the 'aha' moment that spurred the citizen science program. Because private planes can fly low, pilots could be a key player in helping gather data for scientists. Plus, Ansari notes, there are 600,000 private pilots in the United States, a previously untapped resource that can help in water-quality research. —B.A.



THE SCENE: A Midwestern summer day is interrupted with a flurry so intense it dupes weather radars into thinking it's a storm and can even cause cars to careen off the roadways. Not a snowflake is in sight and there's no ice on the roadways, and Old Man Winter can't be blamed because he already made his annual exit.

Sounds like the setup of a riddle, yes? Instead, it's one of nature's phenomenons known as the annual mayfly hatch.

On this day, prehistoric insects emerge from their larval stage to live out an adult life that consists of just hours—a couple of days at most. But they accomplish quite a bit in their limited hours of winged life. A male snags a female with his lengthy legs, they quickly mate in flight, and then the female lays her eggs atop the water. During this fleeting lifespan, they also manage to annoy brides having riverside ceremonies and who weren't expecting the swarm of insects to crash their wedding and, as happened in 2014 in LaCrosse, Wisconsin, completely block the sun. But they delight the fishers who take advantage of this "hex hatch" fish feeding frenzy. (Fly fishermen even model their lures to imitate these prehistoric insects because they're such good bait).



Whether you love them or hate them or are simply fascinated by them, their presence is generally an indicator of good local water quality conditions during the past year and good news for anyone relying on clean Mississippi River drinking water.

While they're around for such a short period of time, the mayflies' hatch is certainly a significant event in the Upper Mississippi region and one that's of interest to scientists. For that reason, the U.S. Fish

and Wildlife Service, the USA-National Phenology Network, along with citizen scientists, have been tracking the annual mayfly emergence through the Mayfly Watch project. Information gathered through the project can help predict the timing of the swarm, which aids in community planning. For instances, cities can take measures such as turning off lights on bridges so they don't become coated in bugs and encouraging drivers to stay off roads that are inundated with mavflies.

Volunteers can join the citizen science initiative by learning how to identify two species that are being tracked and can then report findings via the Mayfly Watch program. Need a little nudge? You can earn a Mayfly Badge in exchange for your participation.

The project has been taking place since 2015. An overarching goal is to educate the public about these bugs' ecological role. Observations of mayfly swarms along the river since 2012 show moderate to heavy emergence events along more than 400 miles of the Upper Mississippi.

"Mayflies definitely are an indicator of the health of the river," said Erin Posthumus, who coordinates the Mayfly Watch project.

In fact, keeping tabs on the mayflies can potentially give biologists more information about a river's health than even chemical tests. In short, here's why: Burrowing mayflies spend the majority of their life in a larval stage, living in the shallow sediments of water. If water quality is poor, they simply can't survive. Biologists also

say the mayflies are sensitive to pollution, which means they can only thrive in sites that have minimal pollution levels.

Delving a little deeper, a study researching the mayflies along the Upper Mississippi and authored by Calvin Fremling of Winona State University and Kent Johnson of the Twin Cities' Metropolitan Waste Control Commission explains that the mayflies are "good indicators of water quality because of their long lives and intimate association with sediments where toxins accumulate."

In fact, the insects pulled a disappearing act from sections of the river downstream from Minneapolis-St. Paul for about 50 years, recovering in the late 1980's following improvements to wastewater treatment. By the summer of 1987, the two most common species of mayfly in the Upper Mississippi, Hexagenia bilineata (the burrower) and Hexagenia limabata (giant mayfly), had reached nuisance levels, resulting in the necessity to clear them from a bridge in St. Paul with the mother of all bug catchers—a snowplow.

While the name "mayfly" would hint the insects would arrive the same month as Mother's Day, the winged insects typically show up later. Along the Upper Mississippi, they usually don't make their grand entrance until July. Smaller, isolated hatches sometimes occur as late as August.

A final thought?

While mayflies might be great for indicating water quality, they're known to be quite pesky at outdoor events. To remedy this, the University of Illinois Extension service suggests reducing outdoor lighting, particularly on or near buildings, before and during a mayfly emergence. You can use sodium vapor lights near buildings to draw them away and replace incandescent lights with yellow bug lights. And look on the bright side. You may be annoyed, but the fish are eating this up. -S.F. & B.A.

Mayfly Facts The order Ephemeroptera, meaning "short lived," has existed since the Carboniferous period, more than 300 million

Adult mayflies do not feed; they live only for reproduction, often for less than a day.

An estimated 18 trillion individuals of *Hexagenia limbata*, the giant mayfly, hatch from the Mississippi every year.



Mayors push for Mississippi River infrastructure investment

A coalition of Mississippi River mayors—with vocal support from everyone from cruise line operators to river industries and states—is asking the Trump administration to fund the U.S. Army Corps of Engineers' Navigation and Ecosystem Restoration Program among other river improvements.

At a series of spring meetings in Washington, D.C., the mayors of the Mississippi River Cities and Towns Initiative announced their request for \$8 billion in funding for river infrastructure and disaster resilience. The \$8 billion is roughly the amount spent currently, and half of that would be spent on NESP, a project that requires parity between money spent on navigation infrastructure and the environment.

Benefits such as clean water are key not only for drinking but also agriculture, business and tourism economies, the mayors stressed, saying their support was contingent upon the plan being implemented as authorized. The Nature Conservancy also announced recent support for NESP.

"President Trump won America's heartland by promising to rebuild our communities and infrastructure, and now he's in a position to deliver on that promise," said Mayor Belinda C. Constant of Gretna, La. and co-chair of MRCTI. "We look forward to working with the administration to protect our nation's most critical waterway, build up our communities and bolster the economy of cities and towns throughout the River Basin."

The mayors met with various leaders on Capitol Hill, including representatives of the U.S. Army Corps of Engineers. Col. Anthony Mitchell, commander of the Corps' St. Louis District, was part of the meeting that included Major Gen. Donald Jackson, Deputy Commanding General of Civil Operations, Col. Michael Derosier, Commander of the Vicksburg District and FEMA Associate Deputy Administrator Roy Wright. Mitchell called partnerships like the one with MRCTI key to improving aging infrastructure and working off a \$60 billion backlog in infrastructure operation and maintenance projects on locks and dams, flood control levees and more.

"Our projects and the water resources we manage generate economic and fiscal benefits that far outweigh the costs to construct or maintain them," he said. "These projects support jobs, facilitate imports and exports and contribute to a stronger economy, environment and quality of life for all Americans."

David Simmons of Viking River Cruises, the largest European cruise company, said Viking is looking to for the first time bring six or eight vessels to the Mississippi River and predicts tourism benefits of cruising will continue to grow—contingent, though, upon clean water and safe infrastructure.

"Our ability to safely take our people and create memories about America for them is extremely important," he said at a post-meeting press conference.

Mayors and other speakers stressed the economic value of river infrastructure and a healthy environment. A recently completed economic profile of just the Upper Mississippi showed it to provide \$600 billion to the economy annually as well as two million jobs.

Mayor Paxton Branch of Tallulah, La., noted that his region suffered a 1,000-year flood last August, underscoring the need for the mayors' request for full funding of a pre-disaster mitigation fund as well as a revolving loan fund that's now run through the Environmental Protection Agency.

"It was literally like someone diverted the Mississippi River for 18 days into the suburbs of Baton Rouge, and we're looking at \$10 billion in losses from that disaster," he said. "These efforts are about both saving lives and sustaining our economy." —K.S.



Col. Michael Derosier, Commander, Vicksburg District, U.S. Army Corps of Engineers

"My first real exposure to the Mississippi River was the August 2015 low water inspection trip with the Mississippi River Commission. The first part of the trip on the MV Mississippi started in the Chattanooga (Tennessee) area. We spent time on the Tennessee River, the Cumberland, and somewhere in the middle of that trip in the middle of the night we entered the Mississippi. You could feel it. The way I would describe it was the power of the river just shook that motor vessel. I asked my bunk mate, 'What's going on?' He said we're going through the confluence area.

"The nation and the region have invested very heavily in the Mississippi River, for many purposes. We have a navigation mission, also flood risk management, environmental stewardship, hydropower, regulation and recreation on the main steam Mississippi and several regional tributaries. The nexus of all of that is the river itself. It draws people to its banks for all of those missions. Everyone has a vested interest in the river and to ensure we align the missions and the requirements to address all those purposes.

"Certainly, this is an extremely enjoyable and fun job. How we manage our resources and how we manage our funding, those are real challenges. We have to make sure we continue to invest in this system for all of the reasons that Congress has authorized and appropriated in order to deliver value to the nation.

"This is the 14th or 15th duty location in which my family has lived along the way in what has now been a 25-year Army career. We try to get exposed to the unique things of each of the different areas. One adventure here started with a colleague at the division who had a gator skull on his desk. He talked about how he'd gone gator hunting a year or two previously. The whole adventure of it kind of excited me, and I was lucky enough to make it through the state's online process and get tags. The most exhilarating part is when you first hook into the gator, and it really starts fighting. There's a lot of force there to reckon with!

"I also took the opportunity to race in the Bluz Cruz, a 22-mile paddle on the Mississippi, because to get on the river in a kayak and compare and contrast that to being on the MV Mississippi really gives you a different perspective on the river and its size and its ecosystem. Everybody has a tremendous amount of respect for the power of the river, but it's also a beautiful place for relaxation and recreation."

Giving wildlife



OWLBERT, THE GREAT HORNED OWL, was brought into the TreeHouse Wildlife Center as a young bird by a kind family that had found him and tried to care for him.

Without a proper wild owl diet, though, Owlbert had developed a condition that had left him with a damaged wing and weak bones prone to breaking. Pam Lippert, a senior wildlife rehabilitator at TreeHouse in Dow, Ill., said that meant Owlbert would never fly or survive in the wild—and he had another problem.

"He was young and had imprinted on humans so he thought of himself as a human rather than an owl," said Lippert.

But Owlbert turned out to be a lucky bird. He is living out his years at the TreeHouse Wildlife center among the rolling farmland and pine woods about 40 miles north of downtown St. Louis.

As a permanent resident of the center, he has also become a celebrity among the region's school children, scouts and adults as an educational bird that helps teach respect for nature and all living things.

Situated on 8½ acres, TreeHouse has a dual mission: to rescue, rehabilitate and release into the wild, native American wildlife and to promote environmental awareness and stewardship through education. Since 1980, TreeHouse has been saving orphaned and injured wildlife—some 750 a year—from pelicans to flying squirrels, bobcats to bald eagles, endangered prairie chickens to redtailed hawks and much more. Those who can't live in the wild usually become



permanent residents, and many have grown up with Lippert, who has worked at the center for 30 of its 37 years.

It's no surprise that TreeHouse and the U.S. Army Corps of Engineers, Rivers Project staff found each other and became partners. Over the years they have worked together to roffer new life to many animals and birds.

'TreeHouse not only rescues and rehabilitates injured birds and animals on both public and private lands, but they also provide education programs to teach the public about their responsibility to the environment, the river and the world they live in," says Kimberly Rea, who is recreation manager at the Rivers Project Office in the Corps' St. Louis District. "There are things people are doing that are harmful and they don't realize it. TreeHouse is making a significant difference through their education program to help people understand their actions have impacts and also to educate them on ways they can make positive changes."

On a recent February weekend, Lippert brought Owlbert and other TreeHouse residents to meet several hundred people at a "Masters of the Sky" event at the Corps' National Great Rivers Museum.

As Lippert walked with Owlbert through the crowds, eager children and adults snapped pictures and asked questions. Caitlyn Campbell, director of education at TreeHouse, also greeted the public with an orphaned opossum named Kitty. Rachel Heaton, director of operations, introduced Einstein, a turkey vulture who had been a pet and prefers to interact with people, and Emrys, a young bald eagle who was admitted with a badly broken wing after being hit by a car.

"Einstein is our diva," Heaton joked.

The partnership has helped the Corps provide services to birds, wildlife, the visiting public and those living in river communities. In October, the Corps and TreeHouse partnered on an event at the Audubon Center at Riverlands to honor St. Louis County Officer Blake Snyder who was killed in the line of duty. Elizabeth Snyder, a former intern at TreeHouse and the widow of Officer Snyder, released a juvenile bald eagle back into the wild at the Riverlands Migratory Bird Sanctuary in West Alton, MO. The Corps is looking for opportunities to further expand the partnership to the benefit of river residents—and wildlife, Rea said.

"Without TreeHouse there would have been times when we would have been unable to save a bird or animal found injured on Corps lands," she said. "We are lucky to have such great partners who are committed to the welfare of our river and the birds and wildlife that call the river home." -M.G.

MY MISSISSIPPI

Mike Breitbach, restaurant owner, Sherrill, Iowa



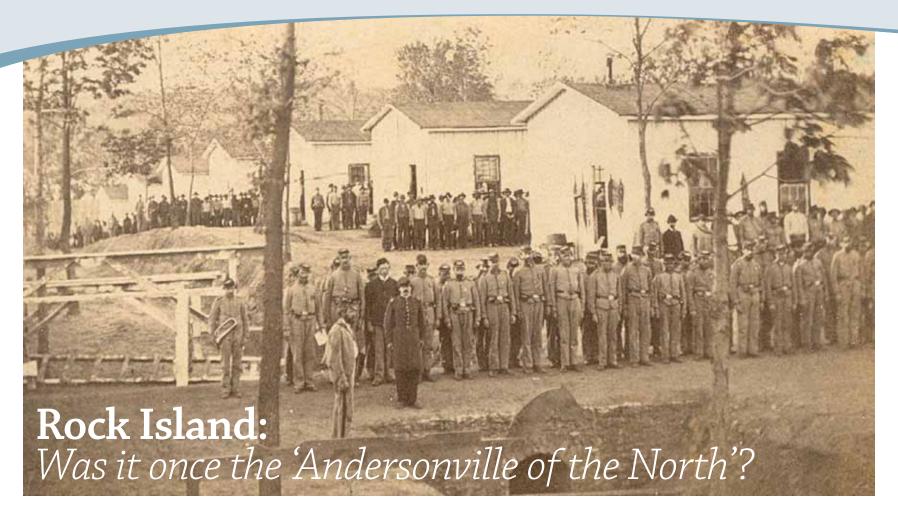
"Breitbach's Country Dining is known as lowa's oldest food and drinking establishment and has been around for seven generations. It opened in 1852 by my great-great grandfather Jacob Breitbach. I started working when I was seven years old, and now I've been here 60 years.

"We've had to rebuild our restaurant twice. The first time, it caught on fire on Christmas Eve 2007 from a gas explosion. The second fire happened 10 months later on October 24, 2008. We couldn't decide for two or three months whether to rebuild again. Then, I walked up to the cemetery and there are six generations buried up there and decided there had to be another building.

"Being about a mile and a half from the Mississippi River affects us a lot because it's a tourist attraction. In fact, we had relatives here from Germany about 10 years ago, and the first thing they wanted to do was dip their hands in the Mississippi River.

"A very touching moment during my time here is when we won the James Beard Award in 2009. They sent myself, my wife, two of our kids, and two of our employees to downtown Manhattan at the Lincoln Center. We were honored for our good food-including our homemade pies and spaghetti soup—and generational hospitality.

"The family operation is tough. You're married to your job seven days a week, and it's hard to get away. You have to sacrifice your life. Like I said, I've been here 60 years. But I'm grateful for my time here and the people I've met. My grandfather said 'to determine success, it's not how much money you have in the bank, it's how many friends you have in the cemetery when you leave."" -T.B.



he winter of 1863-64 was particularly frigid in the Upper Mississippi River Valley, the temperature reaching as low as 32 below zero Fahrenheit. That winter, some 5,000 Confederate prisoners were brought on dreadfully long train rides to a new, and ill-prepared, prison camp at Rock Island. Captain Charles Reynolds was ordered by the ever-practical Union Quartermaster General Montgomery Meigs that: "The barracks for prisoners at Rock Island should be put up in the roughest and cheapest manner—mere shanties, with no fine work about them."

The first prisoners arrived after their defeat at the hands of Union troops at the Battle of Lookout Mountain near Chattanooga, Tenn. More prisoners followed, and over the following 20 months the camp would house a total of over 12,000 prisoners of war from the South; 2,000 would perish there. Today, the remains of 1,950 of those prisoners are buried at the Confederate Cemetery Arsenal, not far from the location of the Rock Island Prison Barracks.

Though tragic, statistics show the death rate was on par with other Confederate prisons of the day. It was nothing to be proud of, but likely also not the "Andersonville of the North," as some called Rock Island.

Why a prison mid-river?

In seeking a location for the Confederate barracks, Rock Island on the Upper Mississippi River in Illinois had ideal qualities and was nearly all owned by the Government. Because it was a natural bedrock fortress elevated above the floodwaters of the Upper Mississippi River, Fort Armstrong was built there in 1816 and Storehouse A was authorized for construction in 1862 (Storehouse A, also called the Clock Tower Building, has been the home of the Rock Island District of the U.S. Corps of Engineers since 1934). The Presidents and Commanders in Chiefs of the Union and Confederacy, Abraham Lincoln and Jefferson Davis, respectively, appreciated the location of Rock Island for its access to both railroad and steamboat traffic. Then in 1861, a committee of Rock Island businessman, headed by Mr. J.B. Danforth, owner of the Rock Island Argus, petitioned Congress to establish a national arsenal on the island.

The myth of Rock Island

During the Civil War, the camp's infamy led to the name "Rock Island" becoming firmly imbedded in the national consciousness—and not in a favorable light. Under the direction of owner Danforth, the Rock Island Argus began to include into a series of weekly articles which documented deaths and supposed malfeasance at the prison barracks, and the national media took notice. In the January 3, 1865 issue of the *New York Daily News*, an article described malnourished prisoners under the title: "Prisoners at Rock Island—Inhuman Treatment—They Feed on Dogs and Rats."

By then, Rock Island had become known as the "The Andersonville of the North," a direct comparison to Confederate prison in Georgia which had an astonishing death rate among Union soldiers who were held there. In 1936, Margaret Mitchell wrote in *Gone with the Wind*: "Ashley was not dead! He had been wounded and taken prisoner, and the records showed that he was at Rock

Island, a prison camp in Illinois. In their first joy, they could think of nothing except that he was alive. But, when calmness began to return, they looked at one another and said 'Rock Island!' in the same voice they would have said, 'In Hell!' For even as Andersonville was a name that stank in the North, so was Rock Island one to bring terror to the heart of any Southerner who had relatives imprisoned there."

But was it a Northern counterpart to Anderson prison or merely a reflection of all prisoner of war camps of the period? Due to the appalling conditions at Andersonville, the death rate was about 30 percent. In contrast, Rock Island's rate was less than half that of Andersonville and generally on par with other Union prison camps. Many of the deaths at Rock Island, about 600, occurred during those first winter months as the result of a smallpox epidemic that was carried to the camp by a few infected prisoners. Thereafter, Rock Island's death toll was lower, but its infamy had been established.

What is not disputed is that between 1862 and 1865, Civil War battles resulted in the capture of thousands of prisoners, distributed between at least 16 Confederate and Union prison camps. Both sides held similar views that captured soldiers were treated egregiously and used for target practice by the guards and subjected to starving conditions that led to prisoners eating rats and dogs. Conditions were described as similar to World War II concentration camps. But after the war, comparisons of death counts and inmate maladies became so politicized that discussions were deemed "Waving the bloody shirt."

Contemporary views

Today, most historians agree the majority of Civil War prisoners endured extreme hardships brought on by the atrocities of wartime conditions and bureaucratic goals which belied the humane treatment of the captured and sufferings. Overcrowded conditions, disease, exposure, indifference, and lack of quality clothing, food, and water were commonplace at nearly all facilities. According to historian William Hasseltine, author of Civil War Prisons: A Study in War Psychology, the prison controversy revealed, "That the atrocities of the prison camps were only phases of the greater atrocity of war itself." Some scholars have concluded that it is less critical to measure the exact amounts of sectional responsibility, than to instead push for recognition of the horrors to insure that history would not repeat itself." —AUTHOR RONALD DEISS IS A HISTORIAN WITH THE ROCK ISLAND DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS.

DID YOU KNOW?

The Army Corps and the Civil War Engineers played vital roles during the Civil War. Schooled at West Point, Union and Confederate Army Engineers focused on the construction of forts, embankments, bridges and floating pontoons, railroads and canals. They also helped with post-war reconstruction efforts, which included improving navigation for commerce.









River OF THE Weird

IMAGINE THE SURPRISE of a pair of Alton, Illinois fishermen when they pulled an **84-pound shark** (BOTTOM LEFT) from the fresh waters of the the Mississippi—some 1,750 miles from the salty Gulf of Mexico. In 1937 when fishermen Herbert Cope and Dudge Collins caught the

shark, the locks and dams that control river depths and often block the march of river fish had not yet been built. But a shark? Despite the skepticism they drew when they displayed it in a town market, it was later identified as the aggressive bull shark, which can live so long in fresh water that one was caught 2,500 miles up the Amazon.

The Mississippi River boasts plenty of other unusual happenings and truths:

Muriel's Jackson Square, the New Orleans eatery best known for its sumptuous Sunday jazz brunch, sets a daily table—complete with bread and wine—for its resident ghost (DRA-MATIZATION PICTURED, TOP RIGHT). That diner, said to be observed in the form of a moving glimmer of light, is thought to be Pierre Antoine Lepardi Jourdan, who once owned the lovely home but lost it in an 1814 poker game. The shock was so intense that he committed suicide on the second floor, now home to Muriel's Seance Lounge. Some doubt the gentleman was the one who threw glasses 12 feet from behind the bar to the brick wall; that may have been a ghost wondering where his or her dinner is!

Those looking to visit locks and dams on the Mississippi will never find Lock and Dam 23, no matter how many times they drive the stretch between Lock 22 and Lock 24. Did it collapse into the river? Get commandeered by aliens? No. It was just lost in the Congressional appropriations process. Money was set aside in the 1920s but the project was later cancelled after construction had already begun at Lock and Dam 24, says Corps spokesperson Robert Anderson, thus messing up the numbering.

Burlington, Iowa, boasts what Ripley's Believe It or Not has deemed "crookedest street in the world." Snake Alley (PICTURED, BOTTOM RIGHT) won the honor over even San Francisco's Lombard Street for having five half curves and two quarter curves and dropping 58 feet over a distance of 275 feet. Aside from being so fun on a bike that it's the site of the Memorial Day weekend Snake Alley Criterium bike challenge, it is also particularly lovely. German immigrants designed the street after vineyard lanes back in Europe, but its bricks were beveled to offer better footing for horses.

The Mississippi River at Alton, Ill., was once home to the "the bird that devours men," or at least its image, in ancient pictograph form. French missionary priest Jacques Marquette wrote in his journal about the image he found high on a cliffside depicting a creature "as large as a calf, with horns like a roebuck, red eyes, a beard like a tiger and a frightful countenance. The face was something like that of a man, the body covered in scales, and the tail so long that it passed entirely around the body, over the head and between the legs, ending like a fish." What's today called the Piasa bird was part of an Illiniwek tribe legend. The image, destroyed over the years, was repainted on the bluff in 1999 (PICTURED, TOP LEFT) and now includes a parking lot and three historic markers depicting its history along Highway 100, a mile north of Alton on the inland side of the Great River Road. -K.S.

President appoints new Mississippi River Commissioners

Two new members have followed in the footsteps of Benjamin Harrison—one of the earliest appointees—and have joined the prestigious and non-partisan Mississippi River Commission, founded in 1879.

President Barack Obama in January appointed Brig. Gen. Mark Toy, commander of the Corps' Great Lakes and Ohio River Division and Rear Adm. Shepard Smith, director of Coastal Survey for the National Oceanic and Atmospheric Administration. The Hon. R.D. James was also reappointed, making him the second longest-serving commissioner in the commission's 138-year history. He has served since 1981.

Commissioners serve as the face of the river and as key liaisons to policy-makers, particularly as they embark on twice-annual river inspection trips that include public hearings. Meetings, like the inspection trips, take place on the commission's official vessel, the M.V. Mississippi

(BELOW) and include stops throughout the watershed. In stops like April's lineup of Hickman, Kentucky; Memphis, Tennessee; Greenville, Mississippi; and Baton Rouge, Louisiana, meeting agendas focus on issues relating both to those stops and other key issues facing the river.

FOR MORE

www.mvd.usace. army.mil/About/ Mississippi-River-Commission-MRC



Meet the Commissioners



Brig. Gen. Mark Toy commands the Great Lakes and Ohio River Division, supervising seven engineer districts in a 17-state area, He previously served as Commanding General of the South Pacific Division and Chief of Staff for the U.S. Army Corps of Engineers, among other appointments. A

graduate of the U.S. Military Academy at West Point, he also holds advanced degrees in environmental engineering and natural resource strategy. While commanding the 84th Engineer Battalion, he won a bronze star.



Rear Admiral Shepard Smith serves as director of the National Oceanic and Atmospheric Administration's Office of Coast Survey. In his role, he oversees NOAA's charts and hydrographic surveys, key in supporting the nation's maritime transportation system. He has worked at NOAA for more than 20

years, focusing on advancing state of the art hydrography and nautical cartography.

He holds a degree in Mechanical Engineering from Cornell University and Ocean Engineering from the University of New Hampshire.

GO BONKERS FOR BIRDS

OUR MISSISSIPPI KIDS

If 4th and 5th graders were to create a field guide for birding, suns might play a prominent role in the picture corners, an owl might be clasping in its talons something that resembles a cartoon puppy, and yet another might swoop down majestically in a display of intricate wing patterns. The result might also rival a Sibley guide in accuracy, color, shape and most definitely in bird personality—especially when you're talking about the program "Bonkers for Birds." Through the program sponsored by the U.S. Army Corps of Engineers' National Great Rivers Museum, students learn about bird behavior, range, features and migration patterns, and

that information is presented with the winning pictures in the form of a student-created field guide. The program has grown from 24 participants in 2007 to 2,700 (from 118 classrooms) this year. Some 100 winners were selected for publication in the guide.

Find the selected species' pictures at **meetingoftherivers. org/html/bonkers**. Or call the Meeting of the Rivers
Foundation at **618.462.6979** to order a printed guide.



Beaks Are Tools

Every bird has a beak that helps it to catch and eat its food.

Draw a line from each bird to the tool that most resembles its beak.











Crows and ravens eat fruit, seeds, insects, fish, and other animals



Warblers need precision for eating insects



Hawks and owls tear meat from animals



Ducks and geese strain small plants and animals from water



Herons and kingfishers like to eat fish



Hummingbirds probe flowers for nectar



Woodpeckers bore into wood to find insects

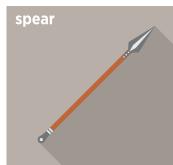


Cardinals and sparrows crack nuts and seeds











TRAVEL A STORIED RIVER

The stories of Laura Ingalls Wilder and Mark Twain let us all grow up along the banks of the Mississippi River. The river flows through literary tales for adults, too, and many iconic river towns star in plots—from the F. Scott Fitzgerald tales of Gatsby-style wealth along St. Paul's Summit Avenue, where the author grew up, to Anne Rice tales set in New Orleans. Double the adventure found on your favorite pages by wrapping in this sampling of stops on your own river-inspired literary tour.



St. Paul. Minnesota

Pass the pretty, castle-style brownstone at 599 Summit Avenue (now a National Historic Landmark), and you'd easily assume that F. Scott Fitzgerald grew up in the moneyed class. But the fact his neighbors had even showier homes, experts say,

inspired F. Scott Fitzgerald's literary themes of wealth and excess. His Winter Dreams and This Side of Paradise were set in St. Paul, and his characters would socialize on a bluff with a Mississippi River view. The Minnesota Historical Society offers occasional 75-minute Fitzgerald site walking tours that start at the Commodore Hotel and end at his birthplace. Or create your own at fitzgeraldinsaintpaul.org.



Pepin, Wisconsin

Pretty Lake Pepin, generally dotted with sailboats. is enough reason to visit the Mississippi River town of Pepin, but so is celebrating what would be the 150th birthday of

author Laura Ingalls Wilder. The broad popularity of the *Little House on the Prairie* series has made an international destination out of this town set amid a stretch of other scenic bluff villages that in some ways have kept the quaint character of time past. Grabbing a slice of pie at Pepin's The Homemade Cafe is a must. The Wilder museum is worthy too; it features a covered wagon like the one the fictional family used to travel west as well as other icons of the era, and you'll find a bonneted crowd and great fiddling if you pull in during Laura Ingalls Wilder Days (Sept. 9 and 10).

Hannibal, Missouri

Mark Twain's childhood home and museum is a mecca for fans of his stories, for the museum features his famous white jacket, pipe, typewriter, writing chair, original letters and a collection of his major work. Visitors can also view 15 original Norman Rockwell paintings, explore the cave that Tom and Huck would play in, watch Twain reenactors in live theater or take a riverboat cruise.

Memphis

It may be better known as a blues mecca than a literary stop, but a visit to Memphis can combine the two at the W.C. Handy House Museum since the "father of the blues' also wrote five books on blues and African American music. Or head to the Natchez Trace Parkway to visit the gravesite of Meriwether Lewis and pay homage to a brilliant scientist and explorer best known for his writings on his expeditions with William Clark.

New Orleans

Pair the metaphysical fiction of New Orleans native Anne Rice with a city vampire tour (hauntedhistorytours.com/vampire), Celebrate the works and life of William Faulker, or just browse the many rare books in one of the country's most charming book shops, at Faulkner House Books along Pirate's Alley off Jackson Square. It's a national literary landmark, and in 1925, the author rented rooms in the same building. A literary festival in March (22-26) is devoted to Tennessee Williams, who once lived in and was inspired by the city. And consider basing your trip at the Monteleone Hotel where Truman Capote's parents lived the year he was born and a display case showcases the many writers who have stayed over the vears. -K.S.

Catch a river fest

From catfish to art, festivals stretching from the headwaters to the Gulf celebrate what the Mississippi River provides—and inspires. Start with this sampling and head for more to:

Food Fests

- Catfish is on most every river restaurant menu, but the World Catfish Festival, listed among North America's top 100 events, adds in art fairs, live music, catfish eating contests and a Little Miss catfish pageant. Belzoni, Mississippi, April 1. BELZONIMS.COM/CATFISHFEST.HTM
- The Ponchatoula Strawberry Festival is Louisiana's second largest free festival behind Mardi Gras. As many as 350,000 visit for music, rides, parades and strawberries, even served tastily in a beignet batter and deep fried. April 7-9. LASTRAWBERRYEESTIVAL COM
- The Crawfish Festival in Breaux Bridge, Louisiana, started in 1960, the year after the Louisiana Legislature named the town crawfish capital of the world. Thousands now come to feast on bisque, boudin, pie. jambalaya to the sounds of Cajun, Zydego and Swamp Pop. May 5-7. BBCRAWFEST.COM

Heritage, Music and Art

- The Riverlands Paddle Festival at the Riverlands Migratory Bird Sanctuary in West Alton, Mo., lets you try various paddling sports in calm but bird-rich Ellis Bay. May 21. FACEBOOK.COM/GREATRIVERWATERTRAIL
- It's all about the blues on the banks of the river credited with inspiring the music at the Mississippi Valley Blues Festival, Davenport, Iowa, celebrating its 31st year June 30-July 1. MVBS.ORG
- For the sounds of the Nitty Gritty Dirt Band, Styx and more country and classic rock legends, head to America's River Festival in Dubuque, Iowa. June 9-10; americasriverfestival.com.
- The Stone Arch Bridge Festival brings 250 artists and three music stages to the banks of the Mississippi River in Minneapolis, Minn., June 16-18. STONEARCHBRIDGE FESTIVAL.COM
- The Stockholm Art Fair is a shopping mecca, held July 15 in Stockholm, Wis. STOCKHOLMARTFAIR.ORG
- French, Dutch, German and more, there's a river heritage festival celebrating the culture, food and ties to the Mississippi River. Head to the French Heritage Festival in Ste. Genevieve, Missouri, the second weekend of June; the Dutch festival (think Klompen dancers, parades and wooden shoes) in Fulton, Ill. first weekend of May; and the German Fest in St. Paul, Minn. June 16-18.



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Camp where the river begins

It's easier than ever to book a campsite at one of the scenic and popular U.S. Army Corps of Engineers recreation areas in the headwaters of the Mississippi River. All sites at all six Mississippi River Headwaters camparounds can now be reserved during peak summer months and can be made up to six months in advance. Reservations could be from one night up to 14 within every month-long period at a given location. Some locations may offer same-day reservation if there are vacancies. The Minnesota campgrounds include Leech Lake, near Federal Dam; Winnibigoshish Lake, near Deer River; Pokegama Lake, near Grand Rapids; Big Sandy Lake, near McGregor; Cross Lake, near Crosslake; and Gull Lake near Brainerd

Book at recreation.gov or by calling 877-444-6777. Note: The Corps accepts America the Beautiful Senior and Access passes, entitling holders to half off camping fees. The Vicksburg District also is making it easier for the public to access its recreation areas—and other services. Download their new app at mvk.usace.army.mil/.

Wear it!

To heighten awareness for the use of life jackets, the U.S. Army Corps of Engineers last year launched a new water safety campaign titled "Life Jackets Worn, Nobody Mourns." The campaign is being held in cooperation with the Corps of Engineers Natural Resources and Education Foundation and targets adult males.

In the last 10 years, 88 percent of all USACE public water-related fatalities were men and 68 percent were between the ages of 20 and 60, according to data compiled by the Corps' National Operations Center for Water Safety. The center also reports that 84 percent of all public water-related fatalities involved people not wearing life jackets and found that the greatest number of water-related fatalities involved people swimming in areas that are not designated for swimming. Also, 27 percent of boating fatalities involved people falling overboard.



Questions or comments

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 $This news letter is a quarterly \ update \ of ongoing \ efforts \ in \ the \ Mississippi \ River \ Watershed \ and \ does \ not \ necessarily \ reflect the views of the U.S. \ Army.$

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