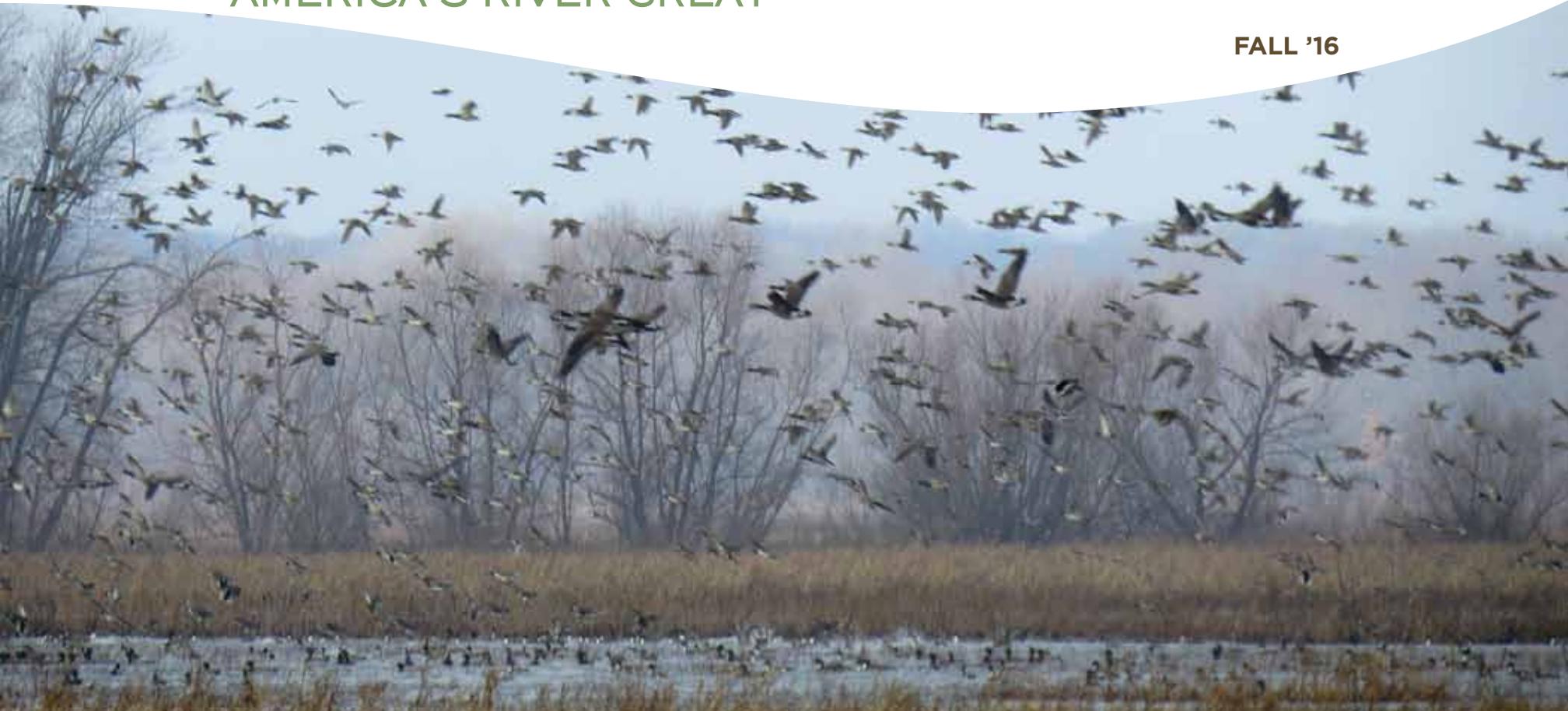


Our Mississippi

PARTNERING TO KEEP
AMERICA'S RIVER GREAT

FALL '16



Autumn on the Mississippi River Flyway

They are the original snowbirds, the tiny winged creatures that make their way from the nation's heartland south come autumn's first chill. Like many human counterparts, they're off to winter along the country's temperate coastal beaches or even more tropical climates of Central and South America—often via the skyway version of Mississippi's Great River Road.

BIRDS NEED DINERS AND MOTELS TOO, so to speak, spots to rest and refuel, and their preferences are in some cases as particular as that of a finicky toddler's. Some find fuel through bugs, others via underwater plants, others fish, and still others find habitat in a bottomland forest. Birds key into the habitat needed to survive the long trip—whether it's aquatic plants, acorns or grassland plants or insects, so "it's important to have that diversity up and down the river to support them all," says Cathy Nigg, refuge manager at the Port Louisa National Wildlife Refuge in Wapello, Iowa. One of several national wildlife refuges on the flyway, it protects 8,375 acres on the Mississippi River and 10,000 on the Iowa.

For so long that even precision-oriented researchers just refer to the timeframe as "eons" birds have been using this, one of the nation's four main flyways, and successfully finding rest and refueling (and in many cases nesting) habitat they need, she

Wildlife Refuges like the one pictured above offer food and refueling for the millions of birds that migration along the Mississippi River flyway each autumn.

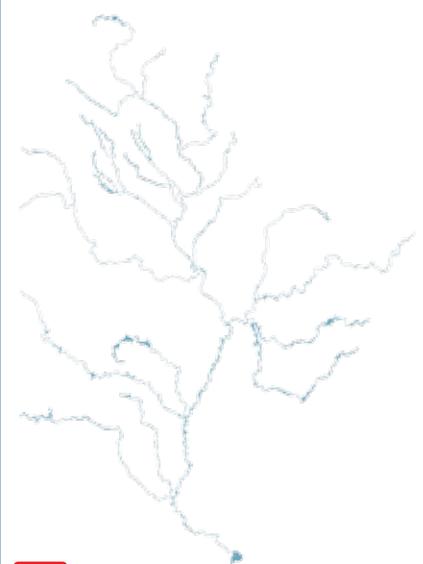
notes. That was true when the river flowed freely and remains true as it's been impounded for navigation and flood control and settlement has populated spots where forests or prairies once stood.

Some species didn't fare well over time, many for reasons entirely unrelated to changes to the river corridor. The passenger pigeons that once dotted skies over the flyway were rendered extinct by uncontrolled hunting, the colorful Carolina parakeet, once common in Missouri, killed off by a combination of the popularity of their feathers for ladies hats, removal of forest habitats for agricultural land and a variety of other causes.

But other migratory bird species have rebounded, and millions of birds still make their way south each fall along the celebrated migration route—some 40 percent of the country's migratory species. Many federal, state and private agencies are working to ensure that in spite of habitat changes, these millions of birds depending on the flyway have what they need to make the journey.

Agencies help some food favorites to grow

The Upper Mississippi River National Fish and Wildlife Refuge is like the all-you-can-eat buffet for birds. A globally



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important bird area reaching down 261 miles of protected Mississippi River floodplain between Wabasha, Minnesota, and Rock Island, Illinois, it's a favorite place for birds to gorge enough to store calories up for the long journey south. Stopping for a snack each year are hundreds of thousands of canvasback ducks, thousands of tundra swans and bald eagles too.

Projects that have boosted water quality, helping sunlight reach the river bottom and boost the growth of plants that many waterbirds need to feed and refuel, have drawn greater number of migrating birds, says Stephen Winter, wildlife biologist at the Upper Mississippi River National Fish and Wildlife Refuge. Clearer water helps allow sunlight to reach the river bottom and boost growth of tasty plants. Something called "drawdowns," intentional U.S. Army Corps of Engineers management of the depth of pools between locks and dams, also

"They will stay here until the ice pushes them out," Winter said. "They're really adapted to being on this river and eating arrowhead, and they're here to put on pounds, to just feast. The fat they put on here carries them through to the rest of migration."

helps the growth of plants like arrowhead, which stabilizes bottom sediments and has potato-like tubers that feed migrating birds. Island restoration projects funded by the Corps-led Upper Mississippi River Restoration Program of which the refuge is an active partner, have also reduced the damaging effect of relentless wind and waves on submerged plants such as wild celery, the favored treat of canvasback ducks.

And the proof is in the viewing—of canvasback ducks by the tens of thousands and similar numbers of showy tundra swans. One researcher studied their migration patterns and found they stay on the refuge, feeding, an average of a full month each fall.

"Tundra swans will stay here until the ice pushes them out," Winter said. "They're really adapted to being on this river and eating arrowhead, and they're here to put on pounds, to just feast. The fat they put on here carries them through to the rest of migration."

At Port Louisa, a migrating bird count tallied 70,000 mallards alone in a single day on the refuge. Other habitat rehabilitation and enhancement projects, also funded through the Upper Mississippi River Restoration, are planned to do even more, Nigg says, projects helping to promote new plants and seeds through improved water level management and also improve floodplain forests for a diverse mix of songbirds. These projects are also restoring forest diversity including oaks and pecans and improving flowering plants.

Sustaining and restoring the floodplain forest habitat is a key area of focus

ABOVE: *Mallards by the tens of thousands stop to rest and feed at the Port Louisa National Wildlife Refuge in Wapello, Iowa; one count tallied 70,000 in a single day.*

for agencies on both the upper and lower river. The Upper Mississippi River Systemic Forest Stewardship plan, prepared by the Corps of Engineers, U.S. Fish and Wildlife Service, State DNR's, and other partners highlights the challenges of sustaining bottomland forests. Maintaining this ancient mix of dense canopy and wetlands is needed to continue to support several hundred migrating bird species including the prothonotary warbler and red-shouldered hawk, while offering other benefits like the filtering of sediments and improving water quality.

"One key is finding ways to regenerate these forests as they mature and eventually die off naturally. Elevated water levels from the locks and dams, and invasive reed canary grass make this especially challenging," says Tim Schlagenhaft, Audubon's Upper Mississippi River Program Manager. "While much of the floodplain forest on the Mississippi has been lost, the river corridor

still supports some relatively large tracts of bottomland forest habitat. The Mississippi River corridor is critical, as much of this habitat has been lost in other areas, especially in the Upper Midwest where agriculture is dominant. Maintaining bottomland forests, by controlling invasive species, managing water levels, and planting trees will ensure this relatively unique and important habitat will continue to support many birds including rare ones like the cerulean warbler and red-shouldered hawk, species that require large and continuous tracts of floodplain forests, and big, old trees for their survival."

Similar issues are being faced on the southern river, where large tracts of forest remain in the two-million-acre active floodplain, or batture, mostly in private ownership. Financial incentives to take cleared floodplain land out of farming and reforest it have been finding success, says Bruce Reid, outreach specialist with the Lower Mississippi River Conservation Committee. The organization also has worked with the U.S. Army Corps of Engineers to alter water level management structures to add "notches" that allow for enough flow through structures designed to keep water contained in the navigation channel to create the types of sandbars that once existed in backwater areas—a habitat preferred by the endangered Interior Least Tern. Listed as in danger of extinction in 1985, the species has made a comeback, due mainly to the restoration efforts.

"Every major class of birds is using some part of the Lower Mississippi River landscape," he said. "Whatever we do to expand and improve that is helping." —K.S.



Secrets of the Great Migration

MIGRATION—how birds know where to go, how to get back—seems part science, part magic. We asked **Dr. Andrew Farnsworth**, research associate with The Cornell Lab of Ornithology, to pull back the curtain on some of the mysteries.

What, briefly, has been the focus of your research related to the science (the how) of bird migration?

I study nocturnal bird migration using advanced remote sensing technologies like weather surveillance radar, acoustic monitoring, and video monitoring. I also study acoustic ecology of migration, in particular flight calling behavior during nocturnal flights.

What prompted that particular interest?

I've been fortunate to be interested in birds since age 5. I was, and still am, fascinated by migration.

What do we know about when birds generally migrate (time of day), why that is and how much that varies by species?

Quite a lot. Most migration occurs at night. Birds are on the move, depending on the species, at many times during the year. The biggest pulses of migration, at night, occur generally in the northern hemisphere from late April through late May and then again from early September through late October. It varies a lot by species, and by where you are on the planet.

How dangerous to birds are city lights, and is there anything that can be done to mitigate problems?

Potentially very. Light is a major disruptive cue to birds, affecting their abilities to navigate and orient. Turning lights off at night in cities and at structures makes a huge difference.

What in their physiology, that we know of, helps birds learn/follow a migration course?

Many things! Birds have incredible sensory abilities, including the ability to calibrate and orient where is the sunset, what are star patterns, what does the magnetic field "look like." They are very sensitive to sound, obviously, but also have a molecule in the eye to help them sense the magnetic field. They learn star patterns and can use patterns of polarized light. They can also remember patterns well! And they probably have a range of other related senses we don't even perceive fully yet.



Unique partnership fosters connections

'What's good for birds is good for people'

Ken Buchholz, appointed Center Director in May 2016 at the Audubon Center at Riverlands, talks about his organization's onsite partnership with the Corps, what he hopes the next face of conservation resembles and why so many birds drop by each fall for a visit (and a meal).

Talk about your partnership with the U.S. Army Corps of Engineers and what makes it unusual.

We saw here the potential for all sorts of habitat protection and restoration opportunities because there's so much land that's protected by the taxpayers through agencies like the Corps of Engineers. On top of that, the Corps' Rivers Project office is not all engineers. They are wildlife biologists and others who understand habitat restoration and water conservation and hydrology and ecology and bring a lot of expertise to the partnership. Even people inside our organization are not used to seeing this kind of working partnership, but it really is working. Our staff and their staff work almost daily together on challenges and projects.

What are some of those challenges?

Water conservation and quality is one. Ultimately, what we believe at Audubon is that what's good for birds and wildlife is also good for people, and what's very, very important for birds and wildlife along the river is water quality. If it's not clean enough to be habitat for the insects and fish that birds and wildlife eat, then it's not clean enough for people.

What's another way in which what is good for birds is good for people?

We know that when people are outdoors and in nature, their physical and mental well-being is better. So getting out to see birds and wildlife—just being outside—is good for people.

Give some examples of how you're encouraging that at Riverlands.

We have always wanted to have educational outreach as part of our conservation work here. We know that people will appreciate what they learn and understand and then they'll come to love it. Also, the face of conservation now is still largely Caucasian. We need to start doing more things now so that everyone is part of the conservation movement. In our education and outreach—and through Audubon's work with the Army Corps—we are engaging more and more kids from minority communities with the purpose in mind of diversifying the movement.

You've established your center in a migratory bird sanctuary. What makes this particular spot so welcoming to birds?

We're at a place where two large rivers meet up with our nation's largest river. These bodies of water provide rare critical habitat, some of the most important flyways on the planet. Indications are there are more than 300 species of birds alone that use the Mississippi River flyway. It's critical for foraging, nesting and what they need to survive. This has been bird habitat long before humans settled this part of the world, and we're hoping it'll be that way for eons to come. Finding a way wildlife, birds and people can all inhabit this river is part of our goal here at Audubon.

What's next?

We'd like to do lot more with connecting people to the Mississippi in a way that allows them to appreciate and enjoy it. One way to do that is paddling, and we want to offer programming and also a concessionaire setup so people wouldn't necessarily have to pack up their own kayaks and life jackets. And we're also starting a project using art to connect people to the river. Oct. 1 through Nov. 18 we'll offer Running Water, an exhibit that takes art to make people really think about how they live in these floodplains and watersheds and how they're vital to our communities.



ABOVE: *Hot air balloons drift over Natchez, Mississippi, where daily activities commemorate its 300th birthday.*

Mayors celebrate river anniversaries, work toward cleaner water and more

A five-cannon salute opened the September meeting of Mississippi River mayors, marking five years of progress for the organization and offering a salute to the Mississippi's original river town.

The mayors of the Mississippi River Cities and Towns Initiative held their annual meeting in Natchez, Mississippi, celebrating that city's 300th anniversary as well as the special history contained within their various towns, states and regions as they ironed out river issues of the future within plantations that haven't changed in some cases at all since the U.S. Civil War.

"It's exciting to come back to the place where settlement along the Mississippi River, from a city standpoint, began," said Colin Wellenkamp, the group's executive director. "You could say Natchez set the tone for everybody else along the Mississippi because they were the first. We're starting a whole period of very important observance of how life came together along the Mississippi River."

New Orleans celebrates its 300th birthday in 2018, and there are also a host of 200 year anniversaries coming up—the state of Mississippi in 2017, Illinois in

2018, the city of Memphis in 2019 and the state of Missouri in 2021. Meanwhile, the U.S Army Corps of Engineers is commemorating 150 years of the existence of districts including St. Paul and Rock Island, both established during exploration of what was then the frontier.

In some ways, the river—like those cities and institutions were at their founding—is still on the edge of a frontier. The mayors in a short five years have become leaders regionally and internationally in areas like climate change and its impact on fertile rivers that produce much of the world's food and issues like the need to keep the water clean for drinking. Some 20 million people in 50 cities currently depend on the Mississippi for drinking water.

In Natchez, the mayors unveiled a new initiative that's part of its flagship clean water effort, focused on the unique way mayors can impact the biggest threat to clean water—agricultural runoff—when the pollution source is generally outside their respective city limits. Instead of focusing on runoff, already targeted by other initiatives, they're partnering with Walmart Stores Inc. to create incentives for companies within their cities, those like Kellogg and General Mills

that are within but further up the agricultural supply chain, Wellenkamp said, to purchase products made via practices that have reduced nutrient runoff.

The initiative also ties into the extensive work mayors have done to reduce impacts of climate change across the globe; just this summer, Mayor Chris Coleman traveled with a compact of mayors and gave the closing address at the second U.S.-China Climate City Leaders Summit in Beijing, while Mayor Belinda Constant of Gretna, Louisiana, was at the same time representing river mayors as climate change leaders at the North American Network of River Basins in Merida, Mexico.

Climate change is related to water quality in some direct ways, Wellenkamp says, particularly in the way it concentrates nutrients that make their way into the river.

"It creates extreme heat which causes nutrients to work faster. Large periods without any rain allow nutrients to collect in stronger concentration inside the water column. That exacerbates the situation. Then when we do have huge rain events, it all washes into the river's main stem and then into the gulf, which exacerbates the Gulf hypoxic zone." —K.S.



MY MISSISSIPPI

Col. Sam Calkins, Commander, St. Paul District, U.S. Army Corps of Engineers

"This summer, I had the opportunity to paddle [for the district's 150th anniversary Canoe Voyage] with a colleague, Steve Grannes, a very experienced paddler. We started at 9 a.m. in Pool 10, just below Lock and Dam 9. It was a beautiful, calm morning, and there were a couple of small private fishing boats heading out. After a few minutes of paddling, we were along a secluded river bank where we saw bald eagles and fish jumping. We also passed the St. Paul District's dive barge heading to inspections of Lock and Dam 9, and we saw our survey team boat out working on the river.

"Later, I went out on the MV Mississippi, and it was really fascinating to see the river from a tow pilot's perspective, which drives home the importance of the mission of keeping the channel dredged. It was also incredible to see the amount of habitat we had restored and hear presentations on how many more fish and waterfowl there were in the area (because of Corps projects) and how good that was not only from an environmental but also an economic standpoint—how that all contributes to the

economic livelihood of small river towns. It's a big responsibility. But we have an incredibly talented group of people dedicated to the mission we have.

"In my last job, I was responsible for a military construction project to build a new headquarters for Army Cyber Command. I got a little perspective on what customers expect from the Corps, and I think that'll help me as we try to provide the best service we can to customers.

"I am in awe of the work the Corps of Engineers did in the '30s to put all the original locks and dams in. The engineering expertise is amazing, and the fact they've lasted 80 years shows the Corps was doing a great job back then. As Steve and I were wrapping up our canoe trip, we were wondering if the locks were going to be there 150 years from now. My job is to help leave a legacy as grand as the one the Corps left in the last 150 years."

Col. Sam Calkins (FRONT) paddles the Mississippi with colleague Steve Grannes, one way the district commemorated its 150th anniversary.

PHOTOS: U.S. ARMY CORPS OF ENGINEERS.

A TALE OF TWO PELICANS

AMERICAN WHITE PELICAN 4226 AND PELICAN 5447 are pretty typical Minnesotans. They love fishing the state's shallow lakes in summer (Marsh Lake in this case) and winging it south during Minnesota's frigid winters.

But the winter "vacation" preferences of these two differ quite a bit, as researcher Kristin Hall of Audubon Minnesota learned by following these and other pelicans in a two-year migration study. The tracking is part of a larger study, scheduled to be completed next year, being conducted in partnership with the Minnesota DNR and North Dakota State University. Researchers are seeking to learn more about the migration and habitat use of these water birds in order to enhance areas they rely on for nesting, loafing and foraging.

Last fall pelican 4226 left western Minnesota in September, Hall says, and took its time getting to the Mississippi River Flyway. The showy bird with an impressive nine foot wingspan and bright orange bill made for scooping, headed east toward the Mississippi the beginning of October, its flight first intersecting with America's River in Memphis. Number 4226 then spent five days along the river between Memphis and New Orleans and the rich river delta. At the Gulf, the bird turned east toward a winter home in Spring Hill, Florida. In total, the migration lasted 52 days.

In comparison, 5447 spent a bit more time on the trip (60 days) but traveled later—and further—leaving the Minnesota breeding grounds in mid-October, a couple of weeks later than its tagged counterpart and taking a much more river-oriented route. This pelican followed the Iowa River from Des Moines down to the confluence of the Iowa and Mississippi Rivers and then followed the Mississippi through Arkansas before heading west to travel through Louisiana and Texas. Ultimately, Hall says, 5447 ended up much farther south than 4226 and wintered all the way down in the Central American country of Nicaragua.

Word maybe did get out about a couple of particularly hospitable spots along the

route, though. Both pelicans spent time at key migratory stopovers including The Iowa River near Des Moines and the Dahomey National Wildlife Refuge along the Mississippi River in the state of Mississippi. That refuge run by the U.S. Fish and Wildlife Service boasts one of the largest remaining tracks of bottomland hardwood forests and sees large numbers of migratory bird visitors from pelicans to songbirds like red-eyed vireos, painted buntings and prothonotary warblers.

Pelican migration patterns are affected by wind, weather, availability of habitat and abundance of fish. But comparing differences and similarities of the tracked birds—in this case, 10, allows researchers to at least start to piece together journey commonalities. For one, the pelicans like shallow lakes. Those are important because, unlike brown pelicans, they don't dive for their food. Instead, they scoop up large quantities of water, using their bill pouch like a fishing net. Because of this, they're particularly susceptible to toxins such as were left during the Deepwater Horizon Oil spill to which the research was initially tied.

The Marsh Lake colony in Minnesota and Chase Lake colony in North Dakota together comprise approximately 40 percent of the North American White Pelican population, and the U.S. Army Corps of Engineers has just launched a restoration program to further boost habitat for the Marsh Lake pelicans and the some 150,000 Canada geese that use the management area throughout each fall.

The tracking may help identify habitat needs elsewhere on the river too, since during migration, they tend to intersect with the river as it starts to widen and spread out into shallower flats. Of the 10 American White Pelicans followed on fall migration so far, all follow the Mississippi at some point near or south of the confluence of the Mississippi and Missouri Rivers, Hall said. That said, other pelicans do use the river further north. The U.S. Fish and Wildlife Service conducts an aerial waterfowl survey on the Upper Mississippi River National Wildlife Refuge and regularly encounters large flocks of pelicans during migration.—K.H.



The American White Pelican. FAR LEFT: Map tracks the migration route of Pelican A and Pelican B.

BE A BIRDER

Get the tools

All you need is binoculars, a field guide and a notebook to join the country's 51.3 million self-proclaimed birders.

Become a note taker

When you see a bird you don't recognize, jot down notes or a quick sketch of the bird before it flies away. Taking photographs gives you something to look at later, but writing or sketching forces you to pay attention to details about appearance and behavior.

Learn some bird anatomy

No matter how different in size, color and behavior, birds generally share the same

basic body parts, and getting familiar with them helps with the reading of field guides.

Judge size and shape

Size is hard to determine from a distance, through binoculars, but it's made easier when you try to compare relative to something you're familiar with, say "larger than a robin but smaller than a crow." Shapes of beaks, wings, and tails also often tell you a lot about a bird.

Study behavior

Notice how the bird is acting. Is it alone or in a group? Is it stalking, standing still, or flitting actively? How does it fly? What is it eating? Some birds are easily recognized by actions alone.

Be aware of variations

Many birds look very different in male and female plumage, adult and immature plumage, and summer and winter plumage, so if you see something different, first check to see if it is a different plumage of a familiar species.

Listen, listen, listen

Listening for the songs and calls can help you identify a bird even before seeing it. As you become familiar with the common songs and calls, you'll start to be able to pick out things that sound different. Many CDs and mobile apps (try Audubon's apps or audubon.com/bird-guide) include recordings to help you learn songs and calls too.



ROMANCING *the* RIVER

Dennis Williams, a shift chief of the Melvin Price Locks and Dam, looked out the tower window and spotted the multi-storied, red-and-white towboat heading upriver to dock at the locks. As the crew of the flagship vessel of the U.S. Army Corps of Engineers called and said, “We’re coming up!” Williams altered the water levels and helped ease the colossus into a lock. And if the resulting flurry of activity signaled a true event, it’s because this was one.

“We only get to see the Mississippi up here twice a year,” he said. “It’s huge—real wide and it’s 100 feet longer than most towboats. It’s also one of the cleanest boats you’ll ever want to see.”

The vessel docked not just at Alton, a river town some 18 miles north of the St. Louis Arch; it rumbled this summer into towns up and down the Mississippi, delighting hundreds who climbed aboard the vessel as far north as St. Paul, Min-

Like the showboats of old, the Motor Vessel *Mississippi* chugged into Alton, Illinois with a flair of river romance as hundreds lined up to see her.

nesota, and as far south as Morgan City in the great swamps and bayous of southern Louisiana.

Impressive in size alone, the five-story, 2,800-ton vessel is the largest towboat plying the rivers of the United States. This August, it also shuttled an impressive crew, ferrying the Presidentially appointed Corps’ Mississippi River Commission to stops up and down the river to make inspections and listen to the public. At each stop, the curious could step onboard, tour the vessel and meet the captain, pilot, first mate and rest of the 40-member crew. Almost 2,400 people showed up at five open houses at which the public could tour the boat. In Cape Girardeau, the crowd braved rain and fog to see it. Some 500 came aboard in Alton, alone, many with excited children in tow.

“The kids love it,” said Sheri Metzler of Alton as she took her third vessel tour this time with children Audrey, 10, Ben, 5, and Autumn, 2 ½. “Ben’s favorite part is sitting in the captain’s chair,” she said, as Audrey added: “It’s so cool, and you get to see the engine and how it works.”

The children’s grandparents Don and Jo Metzler both volunteer at National Great Rivers Museum by the locks. Don Metzler liked seeing the picture on the boat of the first commission, which included James Eads, a famed engineer in St. Louis history who designed a Mississippi River bridge that still stands.

Some guests loved seeing the crew’s dining area, others radar equipment and wheelhouse, still others like Richard Wuthrich the fact that engines could be repaired on the spot, pistons so large that one could hold a five-gallon bucket.

With just a little stretch of the imagine, the vessel painted with red trim on white does resemble an old-fashioned showboat. One, after retirement from the Corps, actually became one of sorts and had an illustrious run as the Becky Thatcher Riverboat, first in Mark Twain’s Hannibal, Missouri, later in St. Louis. In 1976 a theater troupe

performed the musical “Showboat” on it decks and an adjacent barge with 3,000 people watching.

The current vessel is the fifth to bear the name *MV Mississippi*. The original steamer was built in St. Louis for the commission in 1882, and that first commission included Benjamin Harrison, who later became the nation’s president. Presidents Theodore Roosevelt and William Howard Taft both made trips from Cairo, Ill. to New Orleans on the craft.

The first three *MV Mississippi*s were all steamers, while the most recent two have been powerful diesel-powered towboats. The fourth *MV Mississippi* is displayed and open for tours at the Lower Mississippi River Museum in Vicksburg, Mississippi.

It’s no surprise that Corps officials hail the current working towboat also as “a giant floating ambassador.” When polished, the Mississippi sparkles with the old-fashioned elegance of a passenger boat, and the silver and china is still used in the historic dining room decorated with antique-framed photos. There are even 22 staterooms for staff and overnight VIP guests. But the boat more often than not is decked out in its work clothes. For 90 percent of its time, this is a working towboat for the Memphis District of the Corps of Engineers, moving barges, equipment and supplies on the Mississippi River to support the mat sinking operations.

For the VIP August trip, though, the boat shined, leaving its home port in Memphis, chugging north to St. Paul, then turning downriver all the way to southern Louisiana and back up to Memphis—some 3,226 miles over 29 days, said Laura Rowland, operations project manager for the Corps in Memphis and the Commission liaison. The big boat also made stops to celebrate the 150th anniversaries of the Rock Island and St. Paul districts, and in La Crosse, Wisconsin to commemorate the Upper Mississippi River Restoration and its restoration of more than 102,000 acres of habitat. There, festivities featured an eagle, yoga, storytelling and arts and crafts.

As always, the *MV Mississippi* captured imaginations and brought back the mystique and traditions of the great river, exciting even visitors like shift chief Williams, a 39-year Corps employee and four-year Navy man. Before the towboat departed, he showed the captain and another crew member the view from the locks’ “crow’s nest,” then got his long-time wish come true: his own tour of the *MV Mississippi*.

“Until you see it up in their wheelhouse—the pilot’s house—and walk from one side to the other, you don’t realize how big it is,” he said after. “It’s huge! When you think of bringing that boat into a lock, well, it would be a fun job, but it would be kind of tense.” —M.G.



MRC AT A GLANCE

The Mississippi River Commission was established by Congress in 1879 with the purpose of helping transform the Mississippi River into a commercial artery, foster navigation and improve river conditions while protecting towns and fertile farmlands from flooding. Its seven members are appointed by the U.S. president and include civilians, including two civil engineers, and high-ranking Corps officials and one from the National Oceanic and Atmospheric Administration.—K.S.

Learning from the source

Mississippi River Commission takes to the river to inspect, listen, learn



A cross section of America—farmers, labor leaders, environmentalists, professors, levee district board members, local mayors and navigation industry interests—turned out to present concerns and challenges to the Mississippi River Commission this summer as it traveled some 1,013 river miles and listened to formal testimony from nearly 100 people.

Maj. Gen. Michael C. Wehr, who's both commission president and commander of the Mississippi Valley Division of the Corps, greeted sometimes standing-room-only crowds to the 396th meeting of the commission. He assured them their comments and concerns will go well beyond the walls of the MV Mississippi, the impressive towboat on which meetings were held.

ABOVE: **Brig. Gen. David C. Hill, Commander of the Corps' Southwestern Division, addresses a hearing audience, along with Commissioners the Hon. Norma Jean Mattei and the Hon. Sam Angel.** BELOW: **Col. Anthony P. Mitchell, commander of the St. Louis District, greets a member of the MV Mississippi crew.**

"In fact there's a report that goes up not just to Congress but to our Chief of Engineers, to our assistant Secretary of the Army for Civil Works," he said. "I certainly welcome all the perspectives you'll provide."

Members of the public testified at seven locations on everything from successes in environmental restoration in Minnesota to the long-controversial New Madrid Floodway project in southern Missouri to the scenic and universally popular Mississippi River Water Trail. The commission also took part in anniversary commemorations at several stops including Natchez, Mississippi, where a delegation from the Mekong Delta joined the trip.

Flood control was the most frequent theme the commission heard and the testimony underscored the need for a more comprehensive flood control system on the Upper Mississippi River. Commissioner R. D. James from New Madrid, Missouri, called on local levee districts and states in the Upper Mississippi to work together with the landowners to develop a strategy they can unify behind.

That may not be an easy task, he acknowledges, because of the conflicting needs and sometimes impassioned statements made by those addressing the commission. Myra Beauchamp, from Elsberry, Missouri, representing the group Neighbors of the Mississippi, asked for more levee protection, telling the

commission, "Our stakeholders are dealing with flood waters over and over again. How much can one endure? Financially? Emotionally?" But several environmental groups spoke out against flood protection levees, arguing some harm wetland habitats and wildlife.

Another message shared often throughout the hearings was the importance of smaller ports and harbors to regional and national economies, said Charles A. Camillo, executive director of the commission and a historian. Representatives from the ports at Rosedale and Kaskaskia, among others, stressed the economic value to local farmers and others of having a viable port.

Key testimony also emphasized the need to complete the Mississippi River and Tributaries Project, the Corps' flood control system on the Lower Mississippi River, from Cape Girardeau, Missouri and south. Additional work is needed on levees, reservoirs, channel improvements and floodways to protect against the largest possible flood that can be expected, speakers said. Others talked of the need for significant investment for water infrastructure, whether that's dredging for navigation or for dikes, locks and dams, levees or dumping stations.

The commission makes a required inspection river trip in late summer or fall each year when the water is low and a high-water trip in spring to learn from the public and give local and state interests a greater voice in shaping federal policy. The commission over the decades has helped develop plans for flood control—dikes, levees, spillways, reservoirs, locks and dams—in partnership with working Corps districts. In more recent years, it has dedicated increasing attention to ecological restoration and now to climate change.

More and varied public interest groups have characterized recent inspection trips, Camillo said.

"Levee districts and river improvement advocates have been coming before the commission since the early 1880s," he said. "More and more, you're also seeing river basin associations and environmental groups and anyone with water resource concerns."—M.G.



MY MISSISSIPPI

Randy Fell, 56, Deckhand Leader, MV Mississippi towboat

"Growing up, I stayed in Hollywood, Mississippi with my mom and daddy, two brothers and a sister. It was a little country town near Tunica. Mom was a homemaker. My daddy, Nathaniel Fell, worked for the Corps for 20 years as a tie-tool mechanic in Mat Sinking Unit Number 8. That was a long time ago. He repaired the tie-tool guns that tie the concrete mats with wire. The mats go on the river banks and the river bottom. My Daddy also was a carpenter. I was proud of him. If it hadn't been for him, I wouldn't have gotten my job and been so advanced. I'm almost retirement age. I've worked for the Corps 31 years. Quite a few others in my family worked for the Corps, too.

"I chopped cotton when I was a teenager. Hollywood where we stayed wasn't too far from the river. It's in the Mississippi Delta. I've been married 25 years to Barbara and we live in Hollywood. We have four daughters and a son.

"I've been on this vessel 20 years and I love my job. We clean. We paint. We pick up supplies in town. We get food. We do it all. When the commission is here we make sure they get on safely and get off safely. The trip with the commission, it's great. We go all over the place with the commission— to St. Paul, the Arkansas River, the Tennessee River. Been to Nashville, the Ohio River, all.

"I was on the old boat (MV Mississippi IV) before this one for two years. This boat is more modern. We eat in the dining room by the kitchen and the food is great. We sleep in bunks. We work six or eight months a year for 12 hours a day. I'm not sure what my favorite part is. It's all about the mission. I do whatever it takes to get the job done and sometimes you have to go above and beyond."



DID YOU KNOW?

The longest-serving commissioner today, **Sam E. Angel**, of Lake Village, Ark, has been a member since 1979.



Canoe adventure honors *150 years* of river work

Many things have changed since fur traders explored the waters of the Upper Mississippi River. The birch bark canoe has been replaced by a polyethylene canoe, leather with Gore-tex, waterproof chests with dry bags, and hand-drawn maps with a complicated GPS live-tracking system. But the adventure quotient hasn't changed—and it likely never will.

"It was exciting to canoe the Mississippi River," says Teri Alberico, Emergency Management Specialist with the St. Paul District of the U.S. Army Corps of Engineers. "It was high water when we did our canoe leg, and you could really feel the power and force of the river."

Alberico was one of the some 80 people—all employees of the St. Paul District or their family members—to participate in at least one leg of a 730-mile canoe trip from the top of the top of the district to the bottom as a way to commemorate the 150th anniversary of a district founded Aug. 17, 1866. The Stewards of the Headwaters 150th Anniversary Mississippi River Voyage voyage stretched from Lake Itasca to Guttenberg, Iowa, split into five reaches and 38 legs.

Alberico paddled from a bit upstream of Lock and Dam 3 to a spot 22 miles downriver at Lake Pepin. It was the comradery involved in contributing to the team and helping other paddlers that first interested her in participating, she said, though the eventually highlight was both the chance to paddle in backwater areas amid the plant diversity of the floodplain forest—and the thrills.

"The first thing we did was lock through," she said. "The moment we were in the lock chamber, the skies opened up, and it started pouring with thunder and lightning. It made for an eventful time, but the lock and dam personnel were extremely professional and capable of getting us through safely."

The storm pummeled the paddlers for another two hours, and the rain continued

the rest of the way to Lake Pepin. That's when it got really interesting. "The wind picked up and the waves were coming over the boat. We had to pull the canoe ashore to empty it of water."

Scott Goodfellow, a hydraulic engineer who participated in three legs or 58 miles of the voyage, wanted the opportunity to paddle the river that his work centers around. While he has canoed much of the Midwest, Canada and even Alaska, this trip let him share a love of canoeing with co-workers and friends. Some like Kerrie Hauser (a program manager in the regulatory division), were first-timers to the sport.

Hauser paddled with her son and two dogs on the leg from Frontenac State Park to Alma, Wis., a 22-mile leg that followed colleague Alberico. Rather than a rain-soaked journey, Hauser and her son faced challenges of sun, heat and river traffic that forced her to turn into the wakes of other boats to keep from being swamped.

One "fun" moment came when the dog jumped out of the canoe without warning. "Luckily my son balanced things out, and we didn't flip the canoe," she said. "Made it. Exhausted. Going home." And with plenty of adventure tales to tell. —V.H.



To see more on the 150th anniversary and St. Paul District, go to facebook.com/usace.saintpaul.



MY MISSISSIPPI

Clarence Harris, 9th grader, Bayless High School, St. Louis, Missouri

Clarence participated in the 2016 Mississippi River boot camp, offered by NewPOT Solutions Charitable Foundation, the Riverview Gardens School District and the U.S. Army Corps of Engineers.

"It all started with sports. I play sports, basketball, baseball. That's how I got in there. We learned about things like Cahokia Indians, the great ones. And we went canoeing. That was fun. My first impression was the river was breathtaking. It was beautiful. I liked it.

"There are so many different parts of the Mississippi River. I thought it was just one big long river. But one part's where all the barges and ships are, another is like a regular lake. There was wildlife too. We saw birds. We even saw a bald eagle in his tree and a couple of fish.

"We learned about the history of Harriet Tubman and the Underground Railroad, and we learned that before they had barges, they used the river to carry cargo on steamships. One part of the camp taught us about how the river was getting trashy and there'd be cleaning crews doing a lot of work on the Mississippi. We also learned about ourselves. We did this thing called Strengths Explorer. I learned I'm very competitive and optimistic. What careers did it say I should pursue? The first thing that comes to my mind is sports, but I now think something more about the environment. That's what I'm thinking."

Unifying a diverse river

Collaborative works to boost Mississippi River tourism

THE MIGHTY MISSISSIPPI begins its journey at Lake Itasca, a glacial watering hole in Minnesota so tame you can traipse across rocks, from one side of the banks to the other, without even getting your feet wet. Songs of hummingbirds and woodpeckers set the soundtrack in the state park that houses the river's headwaters. As the river nears its approach to the Gulf of Mexico — 2,500-some miles later — it's traveling to a different tune, with saxophones and trombones reverberating jazz music through the French Quarter in New Orleans.

Along the route, there's at least 326 species of birds, from the bald eagles that fish in river dams to yellow warblers flitting through lakeshore thickets, flashing their bright, neon-colored coats to birdwatchers. Ten states border the river, and more than 12 million people live in surrounding counties and parishes.

In a word, the Mississippi River is diverse. But those who live, work, and play along the river tend to have a common, unifying interest: promoting the Mississippi River as a treasured landscape and preserving it so future generations can enjoy it as well. Those are the values at the heart of the Mississippi River Connections Collaborative (MRCC), a network of park and trail managers, non-profit groups, and local, state and federal leaders that have come together to

“There's so many cross-sections of people representing the river, and I cherish that.” —GLENN SMITH

publicize just how remarkable the Mississippi River is and bolster the region's geo-tourism, which is a brand of tourism that is mindful of preserving the environment and respecting local heritage.

“We're conservation-focused and recreation-focused,” said Liz Smith-Incer, with the National Park Service's Rivers, Trails & Conservation Assistance Program. “We know that if folks can get outside and enjoy the natural resources that they live close to, they'll appreciate the land even more and help others appreciate their surroundings, too.”

Already, several anecdotes illustrate the broad types of partnerships the collaborative has spurred — for instance, land managers are communicating to try to stop invasive fish species, like carp invaders, from migrating south and they're able to share resources with one another, said Smith-Incer. And when it comes to arts and culture, Smith-Incer said, St. Louis hosted a jazz and blues festival, and New Orleans was able to send up some of its resident musicians to entertain crowds.

A little history about the MRCC: Six years ago, 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 have been involved in many of the collaborative's projects.

Probably the most public aspect of the collaborative, though, is a recurring “Year Of” program to celebrate ways tourists and locals can enjoy the Mississippi. It started off in 2012 with a paddling theme, which included 300 canoeing and kayaking events up and down the river. The majority of participants had never been to river refuge areas, according to Stephen Gard, with the U.S. Fish and Wildlife Service. In 2014, attention shifted to tourism: The collaborative partnered with the National Geographic Geotourism Program to build an interactive website focused on the Delta region. The project has been gathering information on historic sites, attractions and business.

“There's so many cross-sections of people representing the river, and I cherish that,” said Glenn Smith, who has been involved with MRCC and whose company, Hospitality Enterprises, offers riverboat cruises, swamp tours and ghost adventures around the Big Easy. “We're all trying to put the spotlight on the Mississippi River.”

Tourist interests in the Mississippi River span the globe, according to Terry Eastin, executive director of Big River Strategic Initiative. She often hears of International tourists who want to skip theme parks or big cities in favor of a more authentic experience on the river. The geotourism site is now live, linking tourists to everything from a blueberry-picking farm in Nesbit, Mississippi to the United Houma Nation Tribal Center in Golden Meadow, Louisiana.

Other “Year Of” celebrations have included cycling in 2013, hosting themed events like birdwatching by bike and tours that stopped at historical sites. In 2015, the “Year of Fishing” included youth fishing events and classes on fish identification, techniques and water safety. The year 2016 has gone to the birds, with educational events helping to identify species that inhabit the region.

Next up for 2017? A year dedicated to hiking, revealed Smith-Incer. And while there's hundreds of miles of trails, there's one that's a stand out for her.

“It's really tough to choose a favorite, but one beautiful hike is in Barataria Preserve, which is part of Jean Lafitte National Historic Park & Preserve that's located about 40 minutes south of New Orleans.” The area is home to giant live oaks, seasonal wildflowers and the “Monarch of the Swamp,” a bald cypress tree that's estimated to be more than 600 years old. —B.A.

ON THE WEB
Geotourism site:
mississippiriver.natgeotourism.com



Dan Cullum, 24, Expedition Leader for Recycled Mississippi, Auckland, New Zealand

“I had just graduated college, and my friends and I got together and started building kayaks out of recycled plastic bottles and bamboo. We took short trips to raise awareness about protecting our waterways and reducing pollution. Then, a few of us started to dream about a greater mission and we thought ‘Instead of just traveling on trash down rivers in New Zealand, let's look at opportunities to tackle a bigger river.’ We built a small boat and decided to travel down the most iconic river—the Mississippi. There's no other river where we'd have the opportunity to interact with so many people along the way. It was quite special in that sense, and we saw it as an opportunity to spread our message.”

“Ninety percent of the boat, which is 21 feet long and 13 feet wide, is made of recycled materials. We took waste that would have gone to landfills and gave it a second life. The wood used to build the frame comes from old docks. The plastic bottles give the boat its buoyancy. Our sail, mast and sailing rig were made from bamboo that was sewn together, and our ropes were found at a junkyard. We used a donated solar panel to charge our electronics, and the tillers were made from a tree knocked down during Hurricane Sandy. We left compartments empty so when we spotted plastic bottles in the river, we could collect them and add them to the boat. There's a lot of different stories on the boat.”

“We started in Minneapolis, Minnesota and ended at the Gulf of Mexico and spent 56 days on the river. A few hours before sundown every night we'd start scouting out where we'd like to camp for the evening. The Mississippi was affording us with these large sandbars in the middle of the river, and it felt like we were on tropical islands.”

“Within our first week on the river, we met a man who told us ‘Relax and loosen up, and the river will restore your faith in humanity.’ He was absolutely right. People would ask us where we came from and what we were doing, and everyone was so positive. Interacting with people was hands-down the highlight for us. There was this openness and friendliness on the river.”

“We have these amazing waterways and natural resources, such as the Mississippi, yet from an environmental standpoint there tends to be so much focus on our oceans. We wanted to bring to light that there's huge amounts of pollutants and plastic materials ending up in our waterways. Our overarching message is about protecting not just our oceans, but our rivers, too.”

“We captured footage of our whole expedition down the river because we're producing a short documentary. We've selected three or four characters who we met along the way, and who have dedicated their lives to protecting the river. We want to tell a positive story, following their journeys because they are really heroes of the river.” —B.A.



OUR MISSISSIPPI KIDS

Be THE Bird

Pick a spot in the room to be the summer nesting grounds, another to be the winter home, then use these cards (cut them out or use them on the sheet and decide how you'll pick each turn) to act out the route and better understand what helps along your route—and what can really mess up the trip!

SOURCE: OUR MISSISSIPPI EDUCATIONAL GUIDE



<p>GO</p> <p>Sunny day. Perfect day for flying. Fly on to the next stopover.</p>	<p>GO BACK</p> <p>Wetland is GONE! Someone built an apartment building. Go back 1 stopover to rest and eat.</p>	<p>YIELD</p> <p>POURING! Heavy rain. Stay here until you count to 100. Then fly on to the next stopover.</p>	<p>STOP</p> <p>OH NO! Eaten by a predator. Die a dramatic death. Log your death.</p>	<p>GO</p> <p>Flying high! You flew high enough to catch a fast tailwind. Fly on to the next stopover.</p>	<p>YIELD</p> <p>Yuck! Someone sprayed the field with pesticide. Roll on the floor and moan 6 times. Then fly on to the next stopover.</p>	<p>YIELD</p> <p>Tornado blew you off course. Spell "migration" aloud 5 times. Then fly on to the next stopover.</p>	<p>GO</p> <p>Hooray! You made it to a National Wildlife Refuge! You're protected here. Fly on to the next stopover.</p>
<p>GO</p> <p>Catch a breeze! Fly on to the next stopover.</p>	<p>YIELD</p> <p>OUCH! Diving for a fish, you get a hook in your wing. Stay at this stopover until an Audubon volunteer removes it. Stretch your wings 5 times. Then fly on to the next stopover.</p>	<p>YIELD</p> <p>Caught! A scientist is banding your legs so your flight can be tracked. Kick and flap your wings 10 times. Then fly on to the next stopover.</p>	<p>STOP</p> <p>Bright lights ahead! Whoa, the lighthouse beam confused you. You crashed into it. Die a dramatic death. Log your death.</p>	<p>GO</p> <p>Do you hear birds singing! Sing your favorite song. Then fly on to the next stopover.</p>	<p>YIELD</p> <p>You spotted a potential mate. Do a courtship dance! Flap your arms and run in circles while you count to 50. Then fly on to the next stopover.</p>	<p>GO</p> <p>Yum. School kids planted some of your favorite food. Now you're all fueled up. Fly on to the next stopover.</p>	<p>STOP</p> <p>OH NO! You got caught by someone's cat. Die a dramatic death. Log your death.</p>
<p>GO</p> <p>Ride'em...barge? Caught a ride on a barge. Go to the next stopover.</p>	<p>YIELD</p> <p>Smell that! It's your favorite food. You stay to eat your fill. Sing a happy song. Then fly on to the next stopover.</p>	<p>GO BACK</p> <p>Holy frozen fish! Pond stopover is still frozen. Go back 1 stopover.</p>	<p>STOP</p> <p>Watch OUT. Airplane ahead. Oh No! You flew into it. Die a dramatic death. Log your death.</p>	<p>GO</p> <p>Mayflies are hatching! Mayflies are hatching! Eat up and fly on to the next stopover.</p>	<p>YIELD</p> <p>Holy Hurricane, Batman! Blown off course. Circle the stopover 10 times. Then fly on to the next stopover.</p>	<p>YIELD</p> <p>Watch Out! Almost hit by a jet ski. Lie down and count to 10. Then fly on to the next stopover.</p>	<p>YIELD</p> <p>Pea Soup? Fog? Draw a picture of yourself as a bird as you wait for the fog to clear. Then fly on to the next stopover.</p>
<p>GO</p> <p>Mmmm good! A farmer has planted your favorite berries. Fly on to the next stopover.</p>	<p>YIELD</p> <p>BRRRRR Frost last night. Flap your wings 10 times to warm yourself. Then fly on to the next stopover.</p>	<p>YIELD</p> <p>Whew! You have been flying all night and are very tired. Count to 100 while you rest some more. Then fly on to the next stopover.</p>	<p>STOP</p> <p>OH NO! You flew into the side of a glass building. Die a dramatic death. Log your death.</p>	<p>STOP</p> <p>OH NO! You perched on a faulty power line. Die a dramatic death. Log your death.</p>	<p>YIELD</p> <p>Hold up! The youngsters need to rest. Hop on 1 foot and recite the 4 times table. Then fly on to the next stopover.</p>	<p>STOP</p> <p>OH NO! You cannot find a safe place to stop! You become too tired to go on. Die a dramatic death. Log your death.</p>	<p>GO</p> <p>Students created bird habitat in their schoolyard! It's the perfect place to eat and rest. Fly on to the next stopover.</p>

Which bird are you?

Several species make incredibly long migrations each year traveling from summer breeding grounds to winter feeding areas.



American avocets

prefer open water and marshy habitats as they migrate between southern wintering and northern breeding grounds.



Barn swallows

migrate more than 6,000 miles each year from the Arctic to South America.



Sandhill cranes

depend on wetlands as places to rest and refuel on their spring and fall migrations from southern United States and Mexico to Canada.



Tundra swans

can fly as fast as 80 miles per hour and as high as 4,000 feet.



American white pelicans

travel along the Mississippi River Flyway between their summer breeding grounds in central Canada and their wintering grounds in the southern United States and Central America.

OUR MISSISSIPPI TRAVEL

Five picture-worthy FALL OVERLOOKS

Finding stunning fall color—bluffs ablaze with all shades of reds and golds, accented by ancient rock in which they're set—is as easy as finding the Mississippi River and heading north or south on the Great River Road, particularly across the route's upper half.

But to find that perfect fall photo, or just a view that makes you gasp from its unexpected beauty, you'll want to get an eagle's-eye view. And that's as easy as taking a drive or hike to the pinnacle of one of many state, city or county parks along the route. A few favorites worth a stop:

WISCONSIN

Granddad Bluff rises 600 feet over the city of La Crosse, from the peak offering a view of three states within the Mississippi River Valley. Or head 30 miles north to Trempealeau, where the pretty river town main street is listed on the National Register of Historic Places, it's fun to watch traffic lock through at Lock and Dam 6, and Perrot State Park just north of town features 500-foot bluffs and gorgeous fall color panoramas into the river valley.

MINNESOTA

Near the same stretch but across the river, and along Highway 61 stretch of The Great River Road and its many roadside apple and pumpkin stands, The Great River Bluffs State Park offers some of the prettiest camping around—as well as stunning overlooks in self-pay park filled with eagles, bunnies, more.

ILLINOIS

Bluff beauty along the Illinois River in Starved Rock State Park scores often as number one prettiest fall color attraction in that state, and it's quickly evident why. Some canyons with moss-covered stone are scattered amid the tree-covered sandstone bluffs. Hike 13 miles of trails with access to waterfalls, knowing native tribes and Europeans explorers came before.

IOWA

Pikes Peak State Park in McGregor gets the state tourism staff's vote for one of the top fall color overlooks. Here, large wooded tracts are dotted with streams, waterfalls and the photo spot: a 500-foot high bluff overlooking the spot where two rivers converge near the one-time steamboat port northwest of Dubuque.

MISSOURI

The beauty of Trail of Tears State Park serves as stark contrast to the event it commemorates as a memorial, Cherokees who lost their lives in a forced relocation in 1838. The park's visitor center interprets the relocation as well as the park's many natural feature including a mixed forest—stunning in fall—more typical of Appalachia. The Mississippi River location is prime habitat for the wildlife—white-tailed deer, turkey, hawks and foxes. But it's the cliffs that stood out even to Captain Meriwether Lewis of Lewis and Clark fame; he in 1803 wrote of the spot now a park: “high cliffs the summits of which are crowned with pitch-pine and cedar, these rocks are nearly perpendicular in many places sixty feet, and the height of the hills appear to be about 120 feet above the bank.”—K.S.

Mark Twain's River City

Without Mark Twain's stories, **HANNIBAL, MISSOURI** might have been just another Mississippi River town. But this internationally renowned author made Hannibal famous in his coming of age stories, tales like *Tom Sawyer* and *Huckleberry Finn*, and a white picket fence still flanks his boyhood home. Today, musicians give impromptu concerts alongside meticulously painted 1800s buildings that edge the original brick streets. Situated midway, between St. Louis and Iowa, Hannibal offers plenty of entertainment options too, from antiques shops and a lush riverside park to galleries and riverboat cruises.



Meet Mark Twain

Christened Samuel Langhorne Clemens, Mark Twain grew up Hannibal, approximately 100 miles northwest of St. Louis. Visitors can experience the humor, irreverent wisdom and startling insights of Hannibal's most famous citizen during Richard Garey's “Mark Twain Himself” shows or the ‘Mark Twain Live’ portrayals by Jim Waddell, shows widely praise for accuracy.

At The Mark Twain Boyhood Home & Museum, named one of the 15 Best Small-Town Museums in the U.S., by Fodor's Travel, interactive exhibits allow visitors to ‘ride a raft with Huck,’ or paint the famed whitewashed fence.

Stay

Many local B & Bs operate inside vintage mansions. Twain stayed at Garth Woodside Mansion, set on 36+ acres, minutes from town, while the circa-1859 Belvedere Inn incorporates a billiards parlor and several porches.

Eat, Drink, Explore

Local menu items honoring Twain's riverside home include Clemens Kolsch beer at the new Mark Twain Brewing Co. and the Mississippi Barbecue Burger at the 74-year-old Mark Twain Dinette.

Dinner and sightseeing cruises on the Mark Twain Riverboat pay homage to Twain's love of river culture. Adults can also sample more than 20 Missouri wines, at Cave Hollow West Winery, in the Mark Twain Cave Complex. For a comprehensive look at scenic river bluffs and caves, Hannibal Trolley Company tours has you covered. —L.W.-G.

Is your park experience worth \$10,000?

Incentive to kick that fun-in-the-park snapshot up a notch is being offered by a new Share the Experience photo contest. The National Park Foundation is offering a top prize of \$10,000 for the best shot of an experience on a public land—along the Mississippi River or anywhere in the country. Grand prize also includes your image shared on the annual federal recreational lands pass, distributed to some 500,000 people annually, binoculars, a two-night hotel stay, a power pack and flashlight and a free federal lands pass. Other prizes total an additional \$20,000.

What counts?

Adventure and outdoor recreation, historical and cultural events or monuments, scenic seasonal landscapes or kids connecting with the outdoors.

Where can I shoot?

Take photos on any land managed by the: National Park Service, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, U.S. Forest Service or U.S. Army Corps of Engineers.

Submit:

Photos must be taken between Jan. 1, 2014 and Dec. 31, 2016 and entries are accepted through December 31, 2016. Winners will be announced Spring 2017.

sharetheexperience.org

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RIVER STABILIZATION EFFORTS use placement of articulated concrete mattresses out from the water's edge to stabilize the bank and maintain the proper navigation channel alignment. These pictures from the Memphis District's work, show an operation conducted regularly from mid-July through mid-November and involving crews from Cairo, Illinois to below New Orleans on the Mississippi and Atchafalaya Rivers. The Memphis District (with its Cow Island work pictured here) does the clearing, snagging and grading the bank then loads the mattress onto transporting barges and eventually onto the sinking unit. The actual laying of the mat is done by the Vicksburg District using their Mat Sinking Unit.



PHOTOS: U.S. ARMY CORPS OF ENGINEERS.

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This newsletter 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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Send story ideas to editor@ourmississippi.org