

# Our Mississippi

PARTNERING TO KEEP  
AMERICA'S RIVER GREAT

WINTER '12



## Flocking to Riverlands

**THE TOWBOAT STEPHEN L. COLBY** glides through the newest lock on the Upper Mississippi River, its maroon and gray patchwork of barges heavily loaded with coal. In the auxiliary lock, a trio of white pelicans floats playfully in the current as some curious fifth graders watch from above.

Elsewhere, visitors to the Melvin Price Locks and Dam and the rest of the U.S. Army Corps of Engineers' Rivers Project Office might be scoping out eagles from the new Audubon Center at Riverlands, joining in the Great Rivers Trumpeter

something to look at, but that it's an important resource, a flyway for migratory birds and a great place for recreation."

Locals refer to the Rivers Project Office as the water campus and fittingly so. Opportunities for learning are offered all across the sprawling complex that spans both sides of the Mississippi River some 20 miles north of St. Louis. On the Illinois side lies the National Great Rivers Museum, Melvin Price Locks and Dam and National Great Rivers Research and Education Center. On the Missouri side is the River-

*The planned construction of the system's newest locks and dam—Melvin Price Locks and Dam 26—offered a rare chance to provide a resting spot for birds at the geographic midpoint of the Mississippi River flyway.*

Swan Watch or touring a new college-run laboratory in which water's pumped directly from the river for research.

As the complex has become a model for integrating the varied missions of the U.S. Army Corps of Engineers, it's also created many new partnerships and a rare access point to the Mississippi River and its migratory flyway.

ABOVE: **A bald eagle flies over the Riverlands Migratory Bird Sanctuary in West Alton, Mo.**

"For people interested in the river, it's their first stop," said Suzanne Halbrook, public relations director of the Alton Regional Convention and Visitors Bureau. "What the Corps is doing is letting people know the river's not just


lands Migratory Bird Sanctuary—its 3,700 acres of marshes and bays one of the country's most popular stop-off points for majestic birds like the trumpeter swan, bald eagle and white pelican. Riverlands is also home to a new, one of its kind National Audubon Center, which opened this fall and serves as a stop for bird lovers and the simply curious.

Here, the missions of the Corps and Audubon are blended, with Audubon staffers focused on bird education and conservation, Corps employees seeking to connect people to the river and visitors there to experience it all, said Charlie Deutsch, supervisory biologist at the Rivers Project Office.

"One of the neatest things to do is show up here early in

*Continued on page 2 >>*



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



the morning by one of the marshes," he said. "You can see and hear the swans as they wake up, start thinking about going out to feed and they start vocalizing. It's pretty impressive to hear them trumpeting back and forth. A lot of people describe their calls as akin to a French horn."

Here, too, the sound is more symphony than a lone trumpeter. The Trumpeter Swan Society calls Riverlands a nationally important site for the swans, one of the nation's largest birds. Some 500 or more typically winter here—the largest winter population in all the southern states. And they're not alone. The graceful white pelican and bald eagle also winter here in impressive numbers. On a good year, as many as 200 eagles roost in nearby trees, and on most winter weekends there are eagle watch celebrations with trips guided out of the Audubon Center at Riverlands. Diving ducks like canvasbacks and goldeneyes are common, as are even rarer birds like the ocean-going scoter. Three varieties have been listed this year on the Audubon Center's new sightings board.

The location along the migratory corridor is a key to the sanctuary's popularity, Deutsch said. Riverlands is in roughly the geographic center of the flyway; it's also at a key intersection of sorts—the confluence of three great rivers including the Illinois and Missouri. Many species rest en route to summer or winter homes, while others find the climate perfect for overwintering. But that wasn't always so.

When the Rivers Project Office was newly conceived, trumpeter swans were a rare sight. Even birds with thriving populations at the time rarely stopped here, mainly because the land then was dedicated to cropland and other uses rather than restored prairie and wetlands.

The planned construction of the nation's newest and largest lock system offered an unusual opportunity for the Corps to host migratory birds adjacent to navigation locks through which some 60 percent of the country's grain exports are pushed each year. The juxtaposition, it was thought, could showcase the balance possible in the Corp's resource development and navigation missions.

Spillway lands were needed, and instead of leasing those out for development, they were set aside for a sanctuary that would mimic what might have existed in the 1700s. Landscape architecture clues came from such obscure sources as the journals of Timothy Flint, an early missionary. Poetic observations spoke of vast grasslands filled with rushes and sedges. When modern soil testing offered confirmation, in went 7,000 pounds of prairie grass seed.

Today, tens of thousands of birds—and visitors—stop by each year. And human visitation is likely to keep growing as the area is increasingly promoted as an eco-tourism destination. The new National Audubon Center is one significant draw, with its 20-foot-high walls of glass positioned for views of birds perched in nearby trees or floating on Ellis Bay and interactive exhibits highlighting the importance of the Mississippi Flyway. Eventually, the center plans to host canoe or kayak rentals for trips along the new Mississippi River Water Trail, developed out of the Corps' Rivers Project Office.

"It's a really wonderful story of partnership," says Dr. Patricia Hagen, the center's executive director. "The Corps Rivers Project is a very innovative organization. The land that was associated with the construction of the locks and dam could have been leased out for development. What they chose to do instead is develop this important river wetland."

Other partnerships have been forged with local agencies as well as area zoos,

**Daily lock and dam tours** are offered at 10, 1 and 3, but for more information on education programs, call 618-462-6979 or visit [mvs.usace.army.mil/Rivers](http://mvs.usace.army.mil/Rivers). There's also a self-guided cell phone audio tour of the museum and bird sanctuary. For research or Audubon Center tours, visit [ngrrec.com](http://ngrrec.com) or [riverlands.audubon.org](http://riverlands.audubon.org).

science centers, environmental organizations and schools. Programming and event support for the National Great Rivers Museum is offered from the Meeting of the Rivers Foundation, says Kimberly Rea, recreation manager at the Corps Rivers Project Office. Some lock and dam tours now include a special visit to the National Great Rivers Research and Education Center, located on the other side of the parking lot. There, Corps biologists work with center scientists to find innovative ways to control invasive forest plants and river fish.

Staffers have also developed a river-focused curriculum for teachers, found under the education link on [ourmississippi.org](http://ourmississippi.org). The goal is to get materials into every elementary school within a 25-mile radius of the river, from St. Louis up to Minneapolis, and to provide training in the new floating classroom of Living Lands and Waters.

"The location of the sanctuary allows us to educate people about the environment but also our navigation missions—dredging and channel maintenance—and our recreation mission," Rea said.

"We have trails and special events that expose people to hiking, biking, geocaching, fishing, paddling. The big thing, the overarching thing, is to connect people to the outdoors and to connect people to the river." —K.S.

### Alton the Interesting

Forgive the charming river town of Alton, Ill., if its claims to tourism fame read a bit like the News of the Weird. Its fascinating history has resulted in story-worthy stops. Check out:

- **The spot of the duel that wasn't:** When challenged by a political opponent, the story goes, not-yet-president Abraham Lincoln took his weapon of choice—a cavalry sword—and slashed a tree branch hanging over the much shorter man's head. Instead of fighting, they headed for a tavern and toasted each other's good health. The non-duel is part of the town's legacy trail: [visitalton.com/files/LincolnTrail.pdf](http://visitalton.com/files/LincolnTrail.pdf).
- **A really tall statue:** Robert Wadlow, world's tallest human on record, once lived here. Stand by his 8-foot, 11.1-inch statue in an Alton park to put that fact in fascinating perspective.
- **A ghost or 20:** Tour the so-called "most haunted small town in America," which some believe is due to the preponderance of limestone (supposedly a receptacle for psychic residue). Others attribute hauntings to building bricks taken from a dismantled Confederate prison where many smallpox deaths occurred. [altonhauntings.com](http://altonhauntings.com).
- **A Woolly Mammoth:** Just up the Great River Road, on the campus of Principia (the country's only Christian Science College), you can visit Benny, discovered by a geology class between two dorms after 17,000 years. The bluff-top campus offers a mammoth class and self-guided tour; it even sells woolly mammoth key chains. [principia.edu/mammoth](http://principia.edu/mammoth).
- **The barge view from above:** Massive barges hauling freight are what you'll see from a unique eight-story vantage point on the thrice-daily tours of the Melvin Price Locks and Dam. [mvs.usace.army.mil/Rivers](http://mvs.usace.army.mil/Rivers).

More: [visitalton.com](http://visitalton.com)

ABOVE, FROM LEFT: *Confluence of the Mississippi and Illinois Rivers near Riverlands. Volunteer Bob Morris puts the location in context at a display at the nearby National Great Rivers Museum.*



CONFLUENCE AND STATUE: COURTESY ALTON REGIONAL CONVENTION AND VISITORS BUREAU; MORRIS: KIM SCHNEIDER.

## 100-year storm defense system completed in New Orleans

**AFTER A SEVERAL-MONTH DELAY** due to flooding and high water on the Mississippi River, one of the final pieces of the Hurricane Storm Damage Risk Reduction System is in place in greater New Orleans.

The 133-mile perimeter system is the largest Corps civil works project to date and was fully funded after Hurricanes Katrina and Rita. It includes improved levees, floodwalls and the largest drainage pump station, surge barrier and sector gates built in the world.

The co-located levee on the west bank—built along a 15½-mile stretch on the existing Mississippi River Levee—was one of the last pieces of the puzzle when it was completed to required design height in early fall, said Rene Poche, a spokesman for the New Orleans District. Construction was delayed due to high river stages in mid 2011, placing it last on the completion list. While the project will continue to be refined into 2014, what's been done so far brings the project—and entire system—to the 100-year level of risk reduction (risk reduction against a storm that has a one percent chance of occurring in any given year).

"It was very critical that we addressed these 15½ miles," Poche said. "Without this work being completed, we'd be unable to accredit the system in 2012. For this to be a true system, we have to have every piece in place. They're all important."

A co-located levee is defined as one authorized levee project built atop another. For example, levees were in place in this stretch from river miles 70 to 85, but heights were set to protect against river flooding. Those heights were found too low to protect against potential hurricane storm surge traveling upriver. Models showed the increment needed for the 100-year storm damage risk reduction to be anywhere from six inches to five feet higher than existing levees, depending upon location.

During Hurricane Katrina, storm surge caused a 13-foot rise in water levels at the Carrollton gauge in New Orleans, overtopping some river levees by wave action, said Senior Project Manager Julie LeBlanc. In early fall, the Corps completed enough work on the co-located levees to reduce risk against a 100-year storm surge. But to meet the project deadline, levees had to be built within the existing right of way. As a result, some slopes are too steep to be safely maintained. Between now and 2014, they'll work on what LeBlanc calls "resilient features" or modifications needed to maintain the levees over time. —K.S.

To learn more about the storm protection system, visit: [mvs.usace.army.mil/hps2/hps\\_100\\_year.asp](http://mvs.usace.army.mil/hps2/hps_100_year.asp)



## ARMY'S OLDEST DREDGE CREATES WILDLIFE HABITAT

The endangered least tern may have a new island to call home on the Mississippi River thanks to the U.S. Army Corps of Engineers, the Dredge Potter and a flexible, floating dredge pipe.

Historically, the least tern nested on sandbars along the Mississippi River, but the establishment of navigational pools, repeated flooding and an increase in recreational activities along the river has led to the decline of the population. As part of a pilot project during this year's dredging season, the St. Louis District used dredge material to build small nesting islands using a flexible floating dredge pipe.

Each year dredging is performed on the Mississippi River in order to keep it open to the Congressionally-mandated depth for river traffic. When feasible, dredged material is recycled for beneficial uses within the river, but the Corps is increasingly responding to a stakeholder challenge to use it in more environmentally friendly ways, said Brian Johnson, biologist with the St. Louis District said.

The Potter crew spent most of the off season preparing. Traditional dredging practices didn't allow dredged material to be recycled as a sandbar or island

habitat since it side-casted sediment into a narrow bar limited in size, elevation and location, according to Lance Engle, district dredge manager.

An experiment with flexible floating dredge pipe in 2005 led to the idea of using it to create islands and sandbars on the Middle Mississippi River. The pipe's flexibility allows the Dredge Potter to place dredged material in a specific location as it moves. This allows material to build up, creating sandbars and island habitats in various shapes, sizes and elevations in the river while maintaining the navigation channel. It allows the District to keep the river safe and open for navigation while providing remote, protected habitat essential for the nesting and spawning of various fish and wildlife species such as the least tern.

"In the future, we hope this will be the way we do business," Johnson said. "Eventually, we hope to use the Dredge Potter not only for navigational purposes but for environmental management as well." —R.W.

## MY MISSISSIPPI

Ken Pfeiffer, 52, proprietor with his wife, Teri, of The Book-n-Barber Shop, Grafton, Ill.



"My father's been selling books for 50 years, and I've been selling for 25, and my wife's been cutting hair about 25 years, too. She always wanted her own shop. So we bought this historic house on Main Street that was built in 1850, filled it with about 12,000 books, then turned the kitchen into the barbershop. She's

got two chairs as old as the house.

"We live upstairs. I've even got a scope in the window where I can watch the eagles on the river. When we put a deck on the side of the house, people started bug-ging us about getting a cup of coffee. So we took the room full of romance novels and dumped them, putting in a coffee shop instead. Romance is overrated, and in the winter we make more money off coffee than books.

"We love life here in Grafton, which only has 650 residents. But on a good weekend you might have 2,500 people pass through. People come to a river town, they want to take something back with a river theme. So I specialize in river lore and nautical themes. Mark Twain always sells good. My wife has the local business; very few of them ever buy a book.

"We decided early—we even shook on it—that we would have no employees. And we don't post hours. When we've had enough, we turn the OPEN sign off."

## Wear a fur, save a marsh?



There was a furry thread among the gifts at one of the hottest holiday sales in New Orleans this year. Stockings, ornaments, boots, hats and stoles all featured the soft fur of an invasive Louisiana swamp rat called the nutria.

In fact, Louisiana environmentalists are taking the idea even further, encouraging top fashion designers (and northerners who need to dress for the cold) to feature the fur of an imported South American rodent run amok. The more that high fashion takes to the soft mink-like undercoat of the swamp rat, it's believed, the less damage the voracious plant eater will do to the state's best line of hurricane defense.

Will guilt-free fur become the next fashion statement? "What we have here is an existential crisis. The marsh ain't big enough for humans and nutria," said Michael Massimi, the invasive species coordinator for the Barataria-Terrebonne National Estuary Program (BTNEP). "They're like termites. The damage they're causing to increasingly vulnerable coastal communities is making them more susceptible to hurricanes and storm surges. We have to get rid of them, or at least manage them to where they're not so damaging to the coast."

Massimi's organization, funded through the Federal Clean Water Act and State of Louisiana, sets out to

help preserve, protect and restore some 4.2 million acres of wetlands and more in southeast Louisiana. While invasive species of all sorts are a target, an animal that can turn an entire marsh to open water (locally known as a nutria "eat out") is a special concern in the state with the fastest disappearing coastal wetlands on the planet. A population brought to this country for the fur market and once controlled by trappers exploded when fur fell out of favor. Alligators—the animals' only natural predator—just can't keep up, says Edmond Mouton, biology program manager with the Louisiana Department of Wildlife and Fisheries.

That organization spearheaded the first novel approach to the problem: see if famed Cajun chefs like Paul Prudhomme could spin enough culinary magic to eat the problem away. But even with \$2 billion in funding to help, diners couldn't get past the animal's aesthetics—or lack thereof: orange teeth and its rat-like scurrying, Mouton said. A state-subsidized bounty on the animal's tail found better success. In 2003, his department started offering \$4 a pelt (later raising that to \$5) with a goal of 400,000 new captures a year. Marsh acreage rebounded almost immediately. Where flyovers identified 180 damaged coastal sites in 1998, there are now only 10 (see chart, page 5).

But all trappers have to provide is the tail, and in 98 percent of cases, the rest of the animal (in some years, as many as 400,000 trapped animals) goes to waste. While looking for a market for the fur and meat and to add further economic incentives for trappers, Massimi stumbled upon a show run by New Orleans artist Cree McCree. Her show featured a skirt trimmed in nutria fur, and a lightbulb went off. "You should do more of that," he said.

With the help of the organization's mini grant program, McCree launched Righteous Fur (RIGHTEOUSFUR.ORG). The sold-out full-glamour fashion shows showcase nutria fur on hats, stoles and even as fanciful tiers on a haute couture wedding gown. A show held in Brooklyn brought push back from the anti-fur movement, she said, but the reaction in Louisiana is very different, she said. "We believe in the humane treatment of animals. Many of my designers are vegans, but we also see how fragile the ecosystem is."

This month, she'll launch her online store featuring nutria in accessories and more, including the jewelry she crafts from nutria teeth set in Balinese silver. The hope is a larger cottage industry in which she can sell pelts to other designers, perhaps launch a line of practical trapper hats, and employ the

## The only pelts they use are those already culled through the state's eradication program and otherwise wasted.

indigenous Houma population. With a second BTNEP mini-grant, McCree is also pushing the fur to an international audience, sending nutria surprise boxes to top designers like Marc Jacobs and Oscar de la Renta, who featured some nutria fur in his 2009 collection. Another BTNEP grant is funding a company that's using nutria meat for apparently tasty dog food.

The fact fur's making something of a comeback is encouraging to McCree and Massimi, who hope it's their "glamour without the guilt" campaign that really catches on. The only pelts they use are those already culled through the state's eradication program and otherwise wasted. No additional animals are killed.

"The idea behind Righteous Fur is, 'let's use the ones being killed in a statewide program anyway.' What a horrible waste of resources to pay bounty to trappers just for the tails; let's utilize the whole animal. If fur is somehow making a comeback, let's make sure we're using the right fur—the fur that's damaging Louisiana's sensitive coast." —K.S.

TOP, FROM LEFT: *New Orleans Saints cheerleader Amanda Thompson models a nutria coat at "Nutria-palooza on the Bayou," held in Lafayette, La. in November. Several nutria graze in a damaged coastal marsh.*



**Nutria** (coypou) translates literally to "mouse beaver." And that's a good description for the semi-aquatic rodent—smaller than a beaver and known to scurry like a rat—that's equally beloved and hated in Louisiana. A nutria named Boudreaux is the mascot of a popular baseball team, yet the animal, imported from Argentina in the 1930s, is also responsible for accelerating coastal land loss by munching plants at their roots and turning wetlands into open water. Populations were once held in check by trappers who sold their fur pelts; the fur industry collapse led to an explosive increase in their numbers.

FASHION PHOTOS: ANDY ELLIOT.

## FROM THE PROJECT MANAGER

### Darrel Broussard

National Project Manager of the Year, 2010. Senior Project Manager, New Orleans District, U.S. Army Corps of Engineers



**You're heading a project that would relocate the federally authorized navigation channel on the Lower Atchafalaya River. What does that mean, and how'd it come about?**

The New Orleans District typically dredges this reach of the Lower Atchafalaya River navigation channel, known as the Horseshoe Bend, once a year. The disposal areas where we normally place the dredged sediment material were running out of room, so we held public meetings to identify potential new disposal areas. During the meetings, members of the public gave us an idea for potentially reducing the dredging requirements for this reach. At Horseshoe Bend, most of the navigation traffic unofficially uses another shorter channel locally known as Crewboat Cut. Crewboat Cut is a naturally forming channel that is part of the Lower Atchafalaya River and is self-scouring. It maintains its depth for a longer period of time than Horseshoe Bend, which we are currently maintaining.

## How did you figure out if the idea was feasible?

To determine if realignment of the federal navigation channel was feasible, we did a study which included a barge simulation model. We went to our folks at ERDC (the Corps Engineer Research and Development Center), and they built a model to mimic what is occurring in the Crewboat Cut channel. Then, tugboat operators who use the channel came in and actually worked the model, running barges like remote control boats to see if it's a realistic simulation of what they actually experience in the field. They were able to safely make the turn into the channel, and we determined that barges expected to go down this channel can maneuver through the new reach. From there, we started looking at what the cost savings would be for the government.

## What did you calculate?

In short, we calculated the difference in dredging costs between the two channels. We dredge Horseshoe Bend to the tune of about 800,000 cubic yards of material. Crewboat Cut naturally maintains the 20-foot authorized depth for the navigation channel, so we would only have to do a nominal amount of dredging, an estimated 100,000 to 200,000 cubic yards a year, for this reach. We would save between \$5 million and \$7 million, just by shifting to the new channel.

## What do you have to do to make the shift?

The same model we used for the barge simulation also predicted that we would increase water velocities along the left descending bank line. In Louisiana, we face a serious coastal land loss problem. We didn't want to negatively affect the bank line, so we have to place about \$5 million in rock along the bank before we can officially shift the channel. Our first hurdle was to get approval to do it, which we have. It's not often that you have a project where realigning a channel has such little impact on navigation and provides a big cost savings for the government. It's also a safer route—barges don't have to worry about running aground due to unexpected shoaling—and it's a shorter route to their destination.

## What's next?

We're considering taking the \$5 million we normally spend on dredging Horseshoe Bend to construct and place the rock, and then we could officially re-route navigation traffic to Crewboat Cut. We're hoping it balances itself out and we see savings immediately.

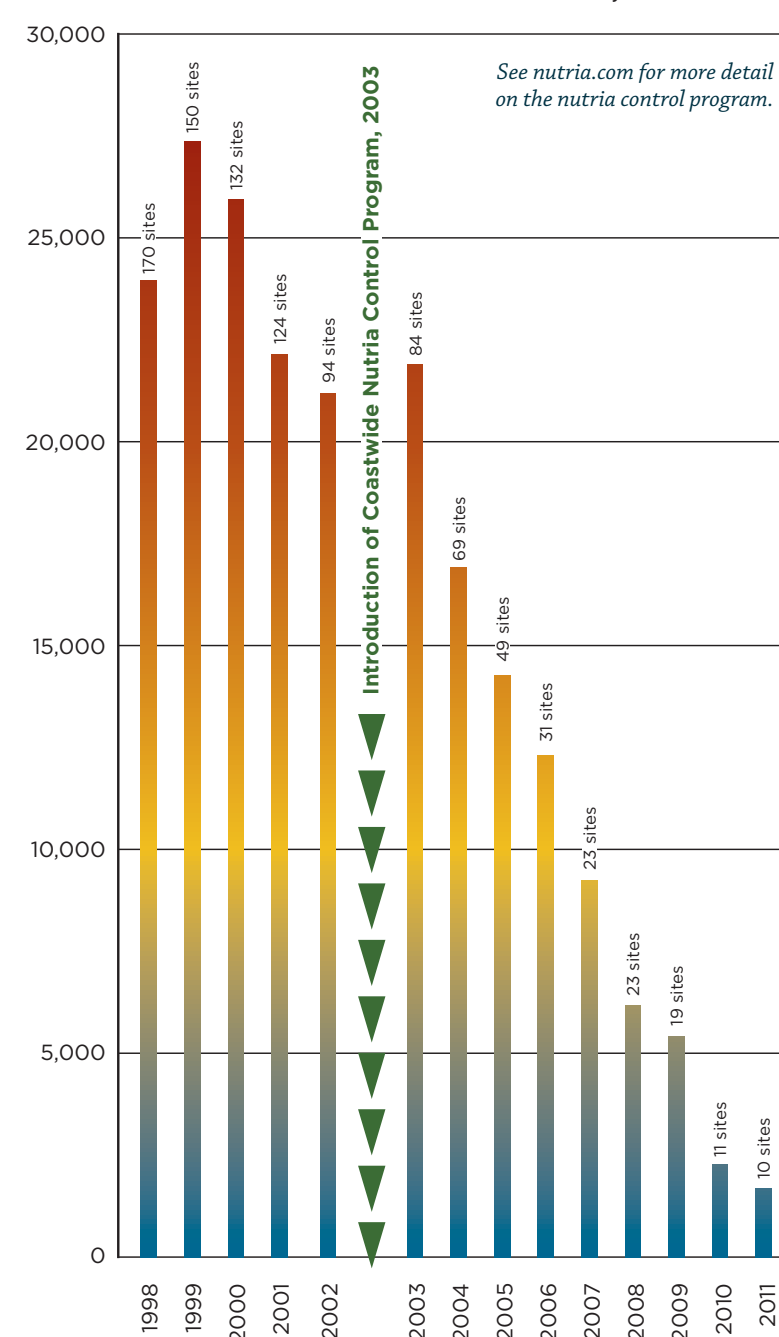
## Where will that money go?

The potential cost savings of \$5 million means we can make sure other areas of the navigation channel remain at their authorized depth. A lot of our channels don't get dredged to their authorized depths due to lack of funding. We do have tows getting stuck. When that happens, the operations manager awards a contract to dredge that area and finds the funds to make it happen.

## How unusual is a project like this?

It's pretty rare. Nowadays, we have been restricting and leveeing navigation channels and not allowing them to move, like on the Mississippi River. The same is true with the Atchafalaya, but what happened is, where the existing channel made a turn, sediment has built up, and an island started growing in the middle. It left an avenue for the Crewboat Cut channel to form. The stakeholders and locals were instrumental in the development of this project. Coordination with these folks helped us design a project that benefits the Corps and navigation traffic. —K.S.

## ACRES DAMAGED BY NUTRIA GRAZING, 1997-2011



## Estimated Coastwide Impact

Data represents measured damage at sampled sites. Actual coastwide damage is estimated to range from 102,585 acres in 1998 to 6,296 acres in 2011.



## Pioneering *the* restoration of big rivers

Pool 8 Backwaters

A ceremony filled with speeches, fish demonstrations and more was held this fall to mark the 25<sup>th</sup> anniversary of the Upper Mississippi River Restoration–Environmental Management Program and kick off what Corps Regional Program Manager Marvin Hubbell says might be an even more exciting phase.

While largely ceremonial, the event showcased what happens when you restore 100,000 acres of habitat on a large river system.

As a research boat full of dignitaries pulled into a project area of newly-created islands near Dubuque, Iowa, high storm waves suddenly calmed. Nature provided the clearest demonstration possible of the islands' power to block wind and shelter vegetation and critters, Hubbell said. As mallards, cormorants and green-winged teal flocked nearby, the group applauded, and appropriately so.

"It seems trivial to put it like this, but all the work we're doing comes down to the birds, fish and other creatures," he said. "They are all symbols of success. We wouldn't have been able to find them there before."

Authorized by Congress in the groundbreaking 1986 Water Resources Development Act, the program was the first to combine restoration with monitoring and research on a large river system in the United States. That act established an environmental restoration mission for the U.S. Army Corps of Engineers and afforded the chance to pioneer techniques now commonly used to create islands or provide overwintering habitat for fish, Hubbell notes.

"Because we didn't have any blueprints to start with," he said, "everything we've done has been learn as you go."

What started as a hunch that more habitat was needed for fish in winter evolved into a formula including the ideal velocity, temperature, depth and parts per million of oxygen, he said. "We started out digging deeper holes and evaluating the response."

In the next phase, the program will more formally integrate adaptive management into its methodologies with a partnership goal of continually responding to new ideas, innovation and research, he said. Partnership in this program is carried out collabora-

tively among five states, five federal agencies and scientists of broad backgrounds and expertise. In addition, there's a distinct Long Term Resource Monitoring component through which scientists collect data and track trends across the watershed through systemic monitoring in six focal reaches of water quality, fisheries, submerged aquatic vegetation and more. "The datasets we have collected show long-term trends over a large area, something you don't see very often," said Hubbell.

In all, 54 projects have been planned, designed and completed through \$290 million in habitat rehabilitation and enhancement projects affecting 100,000 acres. That represents 40 percent of the ecosystem restoration work done nationally by the Corps of Engineers during the past 25 years. Three new projects were launched last year, at a \$21 million price tag. Those and others in various planning stages will eventually restore another 75,000 acres—developing new habitat for

migratory waterfowl, restoring bottomland forests and controlling invasive species. Data collection on fish populations and densities has already been, and will continue to be, useful in the battle against the spread of invasive Asian carp, said Col. Shawn McGinley, commander of the Corps Rock Island District.

Adding to the program's success is the way it has become a model of restoration and monitoring techniques for other large river systems in the United States as well as Brazil, Europe, Australia, India, and China. As more river systems use similar methodologies, they'll be able to evaluate relative quality (relating to ecosystem health) against one another. The program's longevity is what has become so valuable—and that in itself is impressive, Hubbell notes.

"We have built regional expertise amongst our partners, and their support restoring this nationally significant ecosystem continues to grow. Without them, the program wouldn't be where it is today."—K.S.

To learn more go to [www.mvr.usace.army.mil/EMP](http://www.mvr.usace.army.mil/EMP)

AERIAL: ROBERT HURT.

## REBUILDING ISLANDS *with a little help from the river*

Planting a seed for river restoration was done literally in the massive Pool 8 islands project (PICTURED LEFT), now an Upper Mississippi River Restoration–Environmental Management Program showpiece that's been underway in some form since the program's inception 25 years ago.

The last of the island projects was completed this past fall, but the creation strategy means a continual evolution of the 26 islands created within a 3,000-acre project area that all falls within the U.S. Fish and Wildlife Service Upper Mississippi River National Wildlife and Fish Refuge, said Jim Nissen, LaCrosse District Manager. With the project's third phase, seed islands were created through placement of rock berms. Islands will continue to develop organically as they attract river sediment through natural river processes and in some cases scour (deepen) the main channel.

The natural approach makes sense, said Tom Novak, project manager with the U.S. Army Corps of Engineers, because the goal is to recreate, to a smaller degree, the mosaic of islands and channels that existed here before the locks and dams—often atop islands still there, but just below the water surface.

A boat tour will be scheduled this summer to showcase project results to the public. But results are already drawing crowds, of both wildlife and human varieties, Nissen says. An aerial survey identified 455 eagles in the lower pool in November, he said. The same month, 270,000 waterfowl were counted in a closed area near a Brownsville, Minn., overlook. "The naturalist who works the overlook on weekends says on some days more than 300 people visit," he said. Another draw is tundra swans, which concentrate around the new islands in numbers sometimes approaching 25,000.

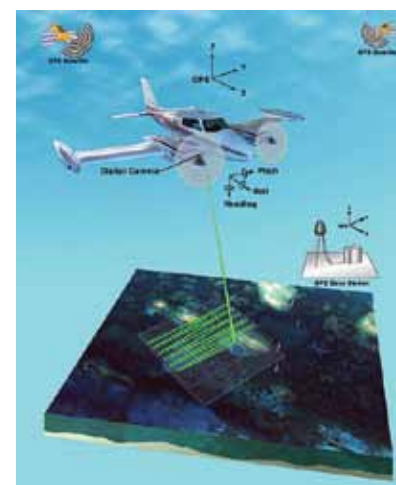
### DID YOU KNOW?

The specialized structure of an American wigeon's bill enables it to exert great force at the tip of the bill, enhancing the bird's ability to pluck vegetation.

### CREATING A RIVER MAP LIKE NO OTHER

Creating a seamless elevation map for the entire floodplain—capturing changing depths and the tiniest of undulations within the Upper Mississippi River System floodplain—is one of the most ambitious projects underway through the Long Term Resource Monitoring (LTRM) component of the Upper Mississippi River Restoration Environmental Management Program (UMRR-EMP).

The mapping uses new LiDAR (light detection and ranging to capture surface topography) and bathymetry (underwater topography) techniques to capture elevations of the floodplain's 2.7 million acres. Key funding was provided by the American Recovery and Reinvestment Act for completing the systemic bathymetry and adding the LiDAR mapping. LiDAR uses airplane-mounted laser sensors and GPS units to gather extremely accurate topographical data for large areas at a finer scale than previously possible, all at a more reasonable cost. The unit shoots a radar pulse from plane to ground, capturing the first return—or height of the tallest tree, for example—then the ground, down to micro-topography, says Karen Hagerty, the Corps' LTRM manager.



Capturing the level of desired detail is not easy, she says; flights must occur when there are no leaves on trees, snow on the ground, wind or clouds and during low water conditions. The bathymetry data collection was completed in 2010, and the LiDAR data collection which began in 2007 was recently completed. The seamless elevation map work is progressing, but more work remains. Once completed, there's no limit to the application of the data, Hagerty says, for habitat restoration work, forestry, flood risk management and more. The LTRM component also gathers systemic land cover/land use data, she said. That data and more is served to the public by one of the project partners, the United States Geologic Survey, available at [umesc.usgs.gov/ltmp.html](http://umesc.usgs.gov/ltmp.html) —K.S.



### MY MISSISSIPPI

**Brian Soenen, Iowa DNR's Project AWARE Coordinator, Iowa City, Iowa**

"We had our first weeklong river cleanup in the summer of 2003. Just a few months prior, we had been wondering, 'How do we engage IOWATER (Iowa's volunteer water quality monitoring program) volunteers?' They might measure a nitrate level 10 milligrams per liter, but how do we help make the number relevant to them? We knew that when you're in a stream collecting data—and bugs—with other people, it's fun. That's when the light bulb went on. That's when we decided to host a river cleanup, but instead of going out for just a day, we chose a week to make it an adventure.

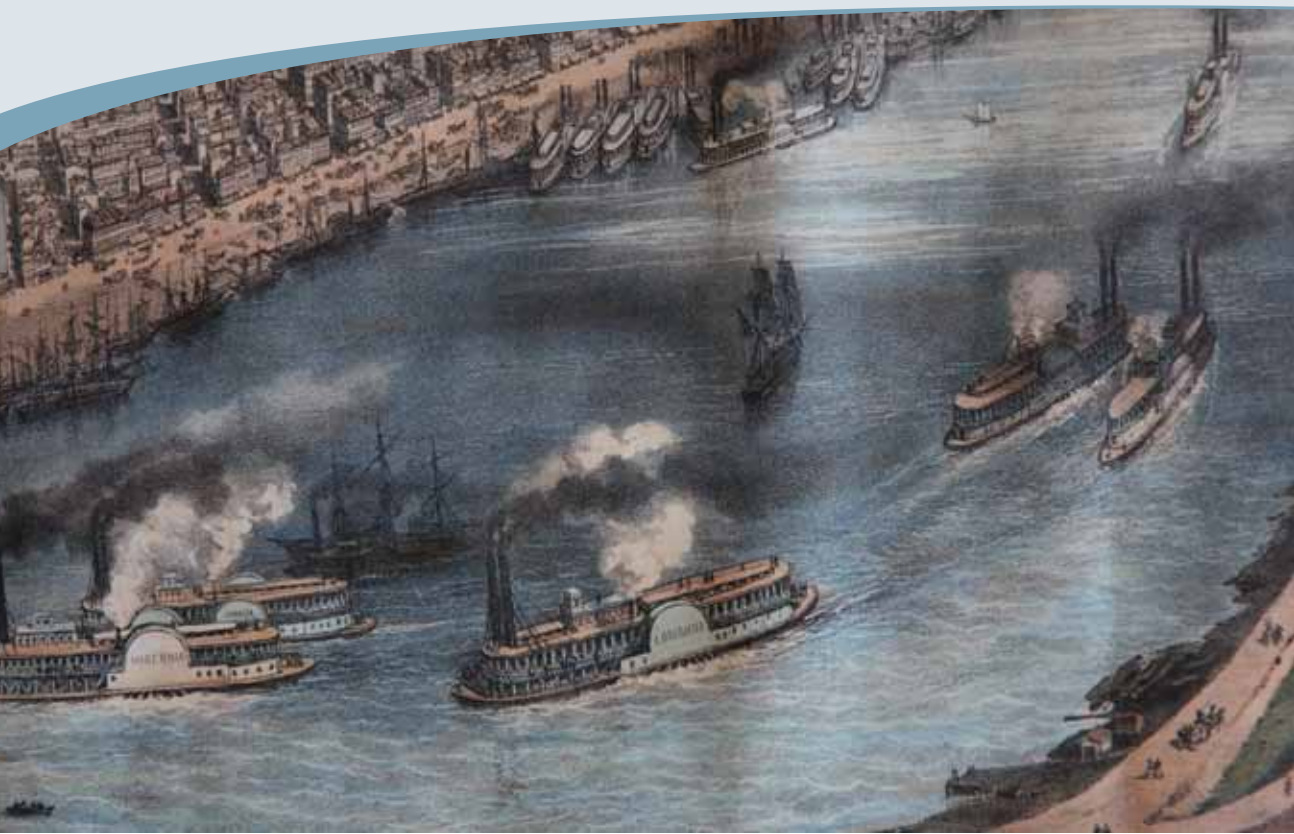
"Project AWARE, which stands for A Watershed Awareness River Expedition, is like a weeklong river classroom. As an environmental educator, you're always looking for that teachable moment when people are attentive and eager to learn, when they 'get it.' When squatting down in the river, water up to your neck, digging something out of river bottom, and loading it into your canoe, you start thinking, 'Wow. What is in this water?'"

"Teddy (a past volunteer) described it as akin to winning the lottery when you find a tire. Volunteers look for the biggest thing possible—'charismatic mega-trash' they call it. You get different types: pickers and skimmers, they reach out from the seat of the canoe and get pop bottles and Styrofoam and litter on banks. Then you've got the excavators who'll come and dig tractor tires and pull out car parts and frames and barrels. Somewhere along the way, with hundreds of volunteers working together, magic happens.

"Granted, river cleanup's not for everybody. It can be exhausting: 100 degrees, 99 percent humidity, whatever mother nature chooses to provide. It's a physical challenge, and you can't keep mud from covering your body. But yet there's something about the whole experience and the fellowship and community of people involved. Somewhere along the line, something magical happens and you can't wait until the next one. We've been calling it a 'cleanup culture.'"

Learn more about the project, how to join a cleanup and just what happens to all that mega-trash (hint: they recycle most, make art out of the rest) at [iowadnr.gov/Recreation/CanoeingKayaking/ProjectAWARE](http://iowadnr.gov/Recreation/CanoeingKayaking/ProjectAWARE).





## FULL STEAM AHEAD!

Bicentennial events celebrate the steamboat voyage that changed America

**IT WAS SCANDALOUS** for the day—on many counts—when in the fall of 1811, Nicholas Roosevelt took off in a steamboat with his wife Lydia (Latrobe) Roosevelt, their young daughter and a skeleton crew.

Few thought the strange, fire-spewing vessel called the New Orleans would make it to the untamed Ohio and Mississippi rivers of the West and back. Fewer still thought Roosevelt should be taking along his still-teen bride, daughter of a prominent architect and several months pregnant.

But the pair was by all counts much in love and up for adventure. And that spirit, historians say, would sustain them through American Indian attacks, an on-board fire and the most powerful earthquake to ever hit the continental United States.

An assortment of actors, dressed in their 1812 finest, will gather on the banks of the Mississippi River Jan. 28 to reenact the arrival of the ship at its namesake city, 200 years this month. And starting that same day, a special year-long Louisiana State Museum exhibit will feature the bicentennial of the trip and the new era of navigation and trade it ushered in.

"It was amazingly important in very quickly transforming transportation in this country, from primarily horse to the much more efficient use of a steamboat," said Charles Parrish, a retired U.S. Army Corps of Engineers historian and scheduled event speaker.

That eventually led to river improvements like today's locks and dams, he said. But it also influenced literature (Mark Twain), music (Louis Armstrong got his start on a steamboat), architectural styles, home furniture, ways of dressing, even what people could eat, he said. The first method for goods to go upriver, steamboats could now carry oysters and shrimp from coastal waters to the north, for example.

All Roosevelt really set out to prove by his 1811–1812 voyage, says Parrish, was that the \$40,000 boat he built in partnership with Robert Livingston and Robert Fulton could navigate western rivers like the Mississippi. By the few available accounts of the voyage, the start of the trip was uneventful—even glamorous. Huge parties greeted the travelers on their early stops. And then came Louisville, where Lydia gave birth while stopped for a few weeks by the low water at the falls of the Ohio.

"Nothing up to that point had marred the enjoyment of the travelers," her brother, J.H.B. Latrobe would write in an 1871 account of the trip, "But now were to come those days of horror."

Between Louisville and New Orleans, the Roosevelts (great-great uncle and aunt of future president Teddy Roosevelt) passed New Madrid in the middle of an earthquake—one seismologists say would measure 7.5 on today's Richter scale. The boat stayed afloat, but the pilot had to navigate amid disappearing islands, caving banks and a current that at one point changed direction. Halley's Comet—a sign?—was visible overhead.

"Many in the day thought the steamboat spitting out steam and sparks may have dropped from the sky from the passing of the comet," Parrish said.

Steam power did enable the crew to outrun an attack by American Indians, and an onboard fire didn't do much damage to the boat natives dubbed "Fire Canoe." But it's little wonder the family would later speak of the trip as one of "anxiety and terror" and relief at the eventual journey's end.

The day-long celebration of that triumphant arrival will include a historical symposium on the voyage at the Hilton New Orleans Riverside Hotel, a reenactment at the Steamboat Natchez dock, a mass of thanksgiving and blessing and a cocktail reception at The Cabildo, hosted by the Lt. Governor. —K.S.

To order a DVD on 200 years of steamboating or a collection of steamboating essays, both published by the bicentennial committee, visit [rivers.hanover.edu/steamboat2011](http://rivers.hanover.edu/steamboat2011).

In the dark hours of October 28, 1811, Louisville's Fourth Street wharf was awash with excitement. The steamboat New Orleans had arrived eight days out of Pittsburgh. The noise of the steam pistons was so great that one person felt the end of the world was at hand while an enslaved man assured others that the Day of Judgment could not come at night. Perhaps not, but the Day of Judgment had come for Lexington. Land locked and sixty miles from the Ohio River, her days as Kentucky's commercial center would end. When the steamboat showed it could go back up river, it quickened the pace of Louisville's growth. Described as an enchanter's rod waved over our progress, the era of Mike Fink ended and that of Mark Twain began. In 1820 Lexington had more than three times the population of Louisville, but by 1860, Louisville was seven times larger. —George Yater

### Rules of Conduct for Gentlemen Aboard S.B. New Orleans, 1817

1. No gentleman passenger shall descend the stairs leading to or enter the lady's cabin unless with permission of all ladies, to be obtained through the Captain under the penalty of two dollars for each offense.
2. Smoking is absolutely prohibited in any of the cabins under a penalty of one dollar for each offense, and fifty cents for every five minutes the same is continued after notice.
3. No gentleman shall lie down in a berth with his shoes or boots on under penalty of one dollar for each offense.
4. No passenger shall speak to the man at the helm under a penalty of one dollar.
5. Cards and games of every description are prohibited in the cabin after ten o'clock at night.
6. At noon, every day, three persons to be chosen by a majority of the passengers shall form a court to determine on all penalties incurred and the amount collected shall be expended in wine for the whole company after dinner.
7. For every transgression against good order and cleanliness, not already specified, such fine shall be imposed as the court in their discretion shall think fit.
8. All damages done to the furniture or boat by any of the passengers it is expected to be paid before leaving the boat. As the preservation of good order and cleanliness is indispensable to promote the comfort and accommodation of passengers (to which every possible attention will be paid) the foregoing regulations will be rigidly enforced. It is particularly requested that gentleman will not spit on the cabin floors as boxes are provided for that purpose.

## Flood repairs get boost from disaster relief bill

A **Disaster Relief Appropriations Act**, signed by President Obama on Dec. 23, gave \$802 million in critical repair funding to the Mississippi River and Tributaries System. The funding represents a vital investment in what Maj. Gen. John Peabody, President Designee of the Mississippi River Commission and Mississippi Valley Division Commander, calls the most valuable flood risk reduction system in the nation and perhaps in the world.

The comprehensive flood risk management program has proved its worth many times over, he notes, with more than a \$30 to \$1 return on investment. In the Great Flood of 2011, the largest recorded flood in the river's history, it prevented more than \$120 billion in damages.

The flood did cause damages to the levees and other parts of the flood control system, however—to the tune of some \$1 billion. Even with the new funding, it will take years to restore the system to its pre-flood conditions, said Robert Fitzgerald, Chief of Technical Engineering for the Mississippi Valley Division.

The most critical repair efforts are well underway with the hope of having key levee systems stabilized before spring flooding. River stages significantly above normal and weather forecasts for a wetter-than-usual flood season have the Corps working the entire length of the river to prepare for possible near-term flooding, but it's also posed construction challenges. Reconstruction of the levee at Birds Point–New Madrid, intentionally destroyed to activate the floodway, had to be temporarily suspended due to unexpected flooding. A temporary barrier was installed to raise the level of protection to 55 feet on the Cairo gauge. Permanent repairs will continue after high waters recede.

Complete system restoration will require cooperation of multiple agencies on all governmental levels, Peabody said. —R.A.

## Historic flood unearths steamboat wreck

A rare steamboat shipwreck was rediscovered along the Lower White River near Rose-dale, Miss., this fall, thanks both to a massive flood that buried the region under a wall of water for several months and some attentive fish researchers from the U.S. Army Corps of Engineers.

"We noticed this boat sticking out of the bluff, so we went over and realized this was a very old boat, certainly before the turn of the century," said Jack Killgore, a leader of the Fish Ecology Team at the U.S. Army Corps' Engineer Research and Development Center in Vicksburg, Miss.

The wreck sported square nails, classically bent boards and other signs of late 1800s craftsmanship, not surprising since at one time, steamboats chugged down this Mississippi River tributary en masse, Killgore said. Then, vessels like this sternwheeler steamboat carried lumber, grain and supplies for an active pearl button industry; mussel shells would be gathered from the river, and holes poked inside to make buttons.

When taking lunch breaks on gravel bars, Killgore, it's not uncommon for researchers to find artifacts and play amateur archaeologist. In fact, this same wreck had been discovered a year earlier by the U.S. Fish and Wildlife Service and investigated with the help of archaeologists from the Vicksburg District of the U.S. Army Corps of Engineers. At that time, only 20 feet of the boat was visible. Floodwaters unveiled more of this wreck, leaving 65 feet (of what's believed to be a 200-foot-long boat) to easily analyze. But the flood also washed away a second wreck of a flatboat found earlier on the same bank.

When Killgore and his colleagues saw the clear shape of a ship sticking out from the bank, they knew this was one for the professionals. They called in Dr. Leslie "Skip" Stewart-Abernathy of the Arkansas Archeological Survey.

Stewart-Abernathy and his colleagues identified the wreck as potentially the *Victor*, recorded in U.S. Army Corps of Engineers records of the time as having been built in 1894 and sunk in this area on Feb. 23, 1907. In its early years, that wooden-hulled steamboat pushed barges of vegetables and the like. When it sank, it was dislodging grounded barges filled with lumber at Sibley Chute. It was struck by one of the loads of lumber and sunk, and earlier Corps analysis showed it was relatively empty at the time of its sinking. No lives were lost, but the \$14,000 uninsured vessel was.

Measurements of the surprisingly intact hull show this wreck to be about four feet wider than known measurements for the *Victor*, but Stewart-Abernathy says records of the time could be off by that much. Or it could be a different wreck. Researchers aren't sure how long it is; that's something they won't know until it falls completely into the water. They'll continue to monitor and measure, he said.

The most significant aspect to this discovery so far, according to Stewart-Abernathy, is that of a strongly reinforced stanchion that apparently supported something heavy and appears to be unique among steamboats of the time. There's still much to learn about the fascinating and once ubiquitous vessels, however, and yet too few cues. In the 1800s, there were no plans for steamboats, so they have to be recreated from the rare number of discovered wrecks. "I keep being amazed that of the thousands of wooden-hulled steamboats built, none are left above ground," he said. "And of the thousands of flatboats, none are left. The boats that carried everything you can think of are gone. The only place to look for them is in a few archives, some photographs and in the water, where visibility is about a foot and there's a lot of feeling and estimating. In this case, the wreck is just sitting there in front of us." —K.S.



*Measurements of the surprisingly intact hull show this wreck to be about four feet wider than known measurements for the Victor, but Dr. Leslie "Skip" Stewart-Abernathy of the Arkansas Archeological Survey says records of the time could be off by that much. Or it could be a different wreck. Researchers aren't sure how long it is; that's something they won't know until it falls completely into the water. For now, they'll continue to monitor and measure.*

**DID YOU KNOW?** In the 1880s, steamboats burned as many as 75 cords of wood a day—enough to build 15 houses.

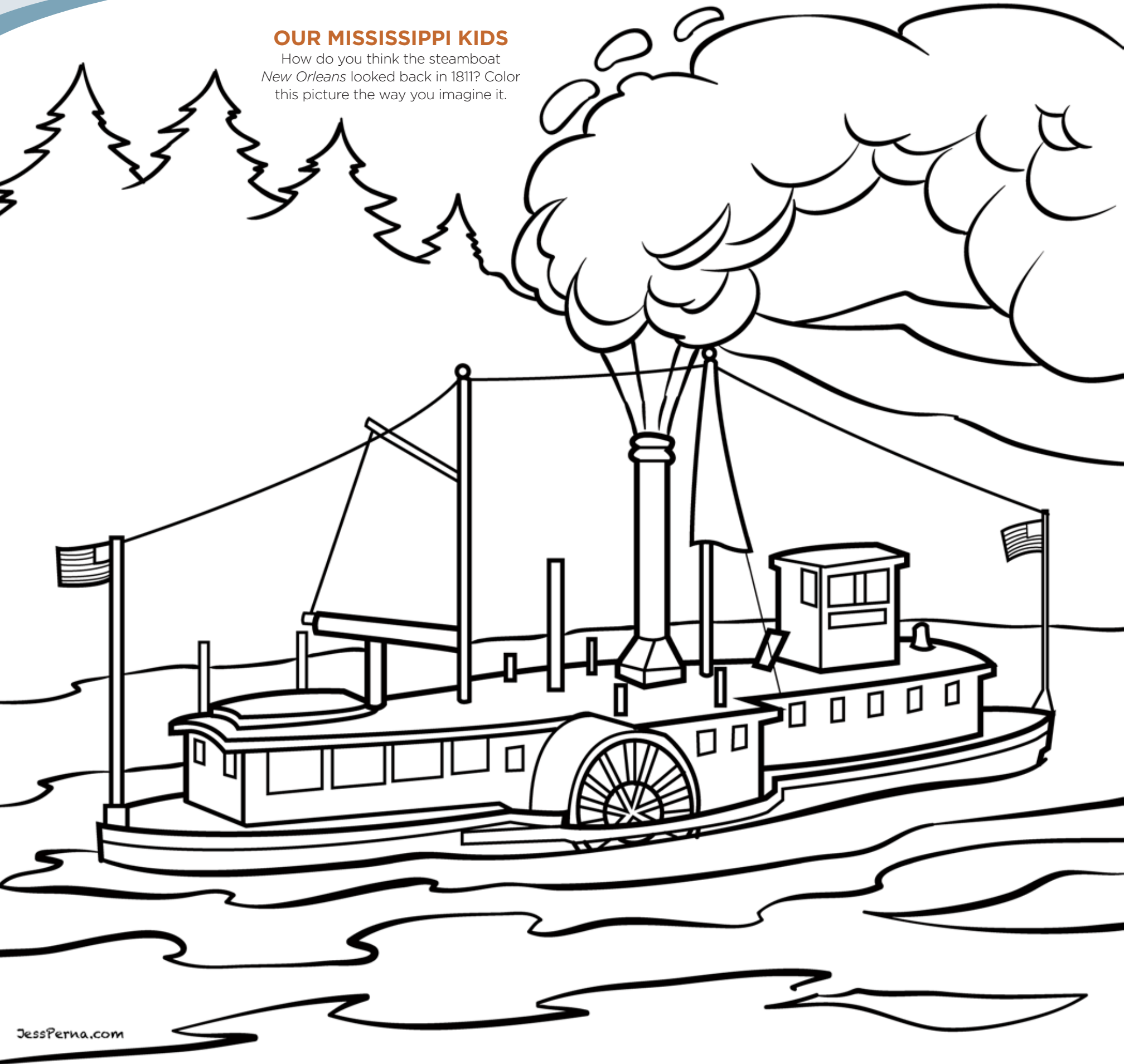
## Steamboat history show at Louisiana State Museum marks 200 years of commerce on the Mississippi



Steamboats are a-comin' to the historic Cabildo on Jackson Square in New Orleans in a new year-long museum exhibition celebrating 200 years of waterborne commerce on the Mississippi River and its tributaries. Presented by the Louisiana State Museum and the River Heritage Foundation, "New Orleans Bound, 1812: The Steamboat That Changed America" recounts the voyage of the first steam-powered vessel to navigate the Mississippi River and traces its lasting impact on the nation's economy, culture and society. The exhibition features a range of artifacts from 19<sup>th</sup>-century steamboats with photographs, paintings, and historic documents. Also on display is a scale model of the steamboat *New Orleans*. "New Orleans Bound, 1812: The Steamboat That Changed America" will be on view through January 2013. FOR MORE INFORMATION, VISIT THE LOUISIANA STATE MUSEUM WEB SITE AT [CRT.STATE.LA.US/MUSEUM](http://CRT.STATE.LA.US/MUSEUM).

## OUR MISSISSIPPI KIDS

How do you think the steamboat *New Orleans* looked back in 1811? Color this picture the way you imagine it.



JessPerna.com



### SEARCH FOR TREASURE ON SECRET MISSION

You can glide the length of the Mississippi as Edna the eagle, or a catfish, or a rafter, on a mission from Gen. Blake Stone, who sends you in search of hidden treasure at the Mississippi River Adventure. Clicking on various stops, reading short blurbs about river wildlife or the area's history, can earn you a secret jewel that sets you further on your way to the discovery of the lost treasure of America's most famous pirate. As Gen. Blake Stone, Commander of the Mississippi, says in the game: "I salute you and wish you a fun-filled adventure."

[WWW.MVM.USACE.ARMY.MIL/MRA\\_SITE/MAIN\\_MOVIE.HTML](http://WWW.MVM.USACE.ARMY.MIL/MRA_SITE/MAIN_MOVIE.HTML)



## Pick your Eagle Watch Adventure

**Slip on the neoprene boots** and climb into a voyageur-style canoe named *Junebug* in January, and you're sure to hear more than a few "are you crazy?" remarks from the fishing regulars at the Mel Price Locks and Dam in West Alton, Ill. Most seem not to get the appeal of paddling on the Mississippi. At least in winter, among an ice floe or two.

But in the capable hands of Mike Clark and other guides at Big Muddy Adventures, gliding soundlessly amid flocks of eagles roosting on otherwise inaccessible islands becomes a once in a lifetime adventure.

Eagle watch outings will be held each Saturday in January and February at the new Audubon Center at Riverlands, with a focus on the best viewing sites within the Corps-owned sanctuary ([RIVERLANDS.AUDUBON.ORG](http://RIVERLANDS.AUDUBON.ORG)). The Alton area even has a new free eagle app and eagle-themed geocaching program ([VISITALTON.COM](http://VISITALTON.COM)).

But it's hard to get closer than you can in a canoe, circling island roosting sites, even pulling up for a view from an eagle blind. The outing is a treat for the ears as well as the eyes, Clark points out, since eagles are noisier at play than most spotters realize. In a two-hour span, you might catch sight of 160 or more birds, he says, and their interaction with each other always proves fascinating, whether the eagles are fishing, preening, fighting or playing.

"One year, two eagles were riding a terminal and they had a catfish. They were dropping the catfish, from 150-odd feet in the air. One would swoop down, and they would play catch. We watched them for 20 minutes as they'd catch the fish, ride the thermal high and let it go. And that was just one experience."

Paddle trips are offered every season. But while spring and fall bring the unforgettable sights and sounds of pelicans, cormorants and more flying overhead, winter trips have a special magic. Trips start mid-afternoon, at the warmest part of the day, and last until dusk, when eagles return to roost on islands like Maple, Duck and Mosenthein. On the latter island, Clark builds an eagle blind in the side of a sand dune; paddlers often climb in an hour before sunset to wait for the great movement of eagles soon to come.

"Of course, they have eagle eyes and eventually see you," he notes, "But they come flying in really close." —K.S.

**Seafarers:** Canoe day trips run \$80 to \$125 (with dinner); email [mike@2muddy.com](mailto:mike@2muddy.com) or visit [2muddy.com](http://2muddy.com).

**Landlubbers:** You don't need to get on the river to catch eagles in their winter roosts along the Mississippi River. Come early January, thousands of the majestic birds flock to the open water along more southern river stretches or by locks and dams.

The Mississippi River Visitor Center on Arsenal Island in Rock Island, Ill., is another Corps stop popular with eagle watchers. Weekends through Feb. 12 feature combination eagle watch and clock tower tours, three times each Saturday and Sunday (309-794-5338; [VISITQUADCITIES.COM](http://VISITQUADCITIES.COM)). You'll find a list of dozens more eagle events and spotting options at locks and dams at [ourmississippi.org](http://ourmississippi.org).

### WIN A TRIP!

[TravelMississippiRiver.org](http://TravelMississippiRiver.org) is now hosting a contest to win a weekend getaway this winter to go eagle watching in one of six different communities along the Mississippi River in Illinois and Iowa. Sign up through January 20, 2012 at [TravelMississippiRiver.org](http://TravelMississippiRiver.org).

## MY MISSISSIPPI

Travis Konda, 37, Bridge Erection Engineer, Hastings, Minn.



"This is the third Mississippi River bridge I've worked on, but with the others, I wasn't on site. It was all numbers, drawings and data points without a true sense of scale. Here, when you stand on the bank and look out, you feel tiny. When you are down in the cofferdam for the main pier

under 37 feet of water, you feel vulnerable.

"There's not much to look at today but a couple of piers, but just wait... this will be one unique bridge. When the arch is lifted, it will grace every engineering magazine in the nation. The arch has two free-standing ribs without bracing across the top, so driving through, you can see the sky unobstructed. The brick-colored ribs match the surrounding buildings. The arch tapers, and it will be softly lit at night. There's going to be a 12-foot path for bikes and pedestrians with an overlook at the middle, like a little balcony.

The south abutment at street level will feature a mural by a well known local artist depicting Hastings and the Mississippi River, now and through history. These design details reflect the community's pride in their town and their oneness with the River of which I am excited to be a part." **Follow progress on the bridge: [dot.state.mn.us/hastingsbridge](http://dot.state.mn.us/hastingsbridge)**



## Hastings the Historic

Hastings, Minn., has been a winter respite for travelers since back in 1820, when a keelboat on its way to supply a military encampment at what would later be called Fort Snelling was forced by river ice to stop and its passengers stayed to camp. When officially founded in the 1840s, it was one of the state's first towns.

Visitors are still stopping, though today they're most often "camping" at historic inns and then touring mansions like the LeDuc-Simmons, a recently restored Greek Revival home of a Civil War hero and Secretary of Agriculture under President Rutherford B. Hayes. The town boasts 63 buildings on the National Register of Historic Places, including its dome-topped city hall, 33 commercial buildings, 28 private homes and two churches.

There's more than history, though. Hastings is home to the Alexis Bailly Vineyard, the first (when founded in 1973) to use 100 percent Minnesota grapes, under the motto: "where the grapes can suffer." The location at the conjunction of the Mississippi, St. Croix and Vermillion rivers means stunning scenery and plenty of parks. Hearty winter travelers will find many cross-country ski trails, moonlight snowshoe hikes at the Carpenter St. Croix Nature Center and two downhill ski resorts, Afton Alps to the north or Welsh Village to the south.

**FOR MORE: [HASTINGSMN.ORG](http://HASTINGSMN.ORG)**

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## News Briefs

### 90 ways to control invasive aquatics

The public is invited to share views on potential methods for controlling Asian carp between now and Feb. 17. After that, the U.S. Army Corps of Engineers will further pare down a list of 90 newly-released options for blocking the harmful spread of Asian carp and other aquatic nuisance species between the Great Lakes and Mississippi River systems.

The report in December listed what Obama administration Asian Carp Program Coordinator John Goss called all the possible combinations of technologies for controlling would-be aquatic migrants.

Some of the technologies in the report are already in use, including fish and plant poisons, introduction of predatory species, herbicides and stepped-up harvesting by commercial fishermen. Others, like controlling the spread with underwater strobe lights, an acoustic air bubble curtain or water temperatures raised to lethal levels, are still in the experimental stage. Different technologies would target different species; a total of 39 species have been listed as "at risk of spread from one basin to the other."

TO SEE THE COMPLETE LIST AND/OR TO COMMENT ELECTRONICALLY, GO TO: [GLMRIS.ANL.GOV](http://GLMRIS.ANL.GOV). —K.S.

### Corps, environmental group sign expanded partnership agreement

The U.S. Army Corps of Engineers and The Nature Conservancy broadened an already strong partnership on the Mississippi River early this winter, signing a partnership addendum that expands the collaboration to the entire watershed.

"Watershed approaches to the management of the nation's rivers helps us maintain and improve the benefits of these river systems like improved flood risk management, hydropower, navigation, recreation and wildlife habitat," Jo-Ellen Darcy, Assistant Secretary of the Army for Civil Works, said during the signing of the agreement at a partnership conference in Memphis.

Collaboration between the groups already is ongoing and significant. The agreement increases partnership efforts on Gulf Coast recovery and also adds to the ongoing work to use lessons learned on the Mississippi River as a foundation for exchanging knowledge with managers of large rivers around the world, according to Great Rivers Project Director Michael Reuter. Among other efforts, the Corps and Conservancy are working with managers of the Magdalena River in Colombia, discussing mutual sediment management issues, navigation needs and flood risk management issues. —K.S.



## Deer hunt for all

Barriers came down for eight hunters who participated in the Mobility Impaired Deer Hunt Dec. 3 on U.S. Army Corps land adjacent to Columbia Lock & Dam on the Ouachita River in Caldwell County, La.

The annual outing, one of several sponsored each year by the Corps on public land along the Mississippi River for deer, turkeys and waterfowl, makes the woods accessible to individuals who are wheelchair-bound paraplegics or live with health challenges such as spina bifida and Down syndrome. This seventh annual hunt, a cooperative effort between the USACE Louisiana Field Office, Caldwell Parish Sheriff's Department and the sportsman's organization "Outdoors Without Limits," yielded an eight-point buck, a nine-point buck and two mature does.

"Harvesting the deer is just extra reward," said USACE Forester Tommy Jones. "The fellowship with one another and the hunters getting to spend time in God's great outdoors is the real blessing." —J.H.

#### Questions or comments:

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- Angela Freyermuth, Rock Island, 309-794-5341
- Hilary Markin, Rock Island, 309-794-5730
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