

WORKING TO PROTECT THE MISSISSIPPI RIVER
AND ITS WATERSHED IN THE TWIN CITIES AREA

Inside the *State of the River Report*

Behind the headlines with authors Trevor Russell and Lark Weller



Lark Weller and Trevor Russell, co-authors of the newly updated *State of the River Report*. The new report also features a trio of companion guides — a stewardship, policy and teacher's guide — for residents, educators and policymakers. (Photo by Anna Botz)

Press and praise have been rolling in for the *State of the River Report*. Since its September release, word about the report quickly spread to over a million Minnesotans via local media and over 30 national outlets.

Reporters and readers alike lauded its content — covering 14 key indicators of river health — and approachable, engaging format. Co-authored by FMR and the National Park Service, the report fueled coverage of emerging threats like microplastics while shining the spotlight on the ongoing impacts of agricultural pollution.

We sat down with report authors Trevor Russell, FMR's water program director, and Lark Weller, water quality coordinator of the National Park Service's Mississippi National River and Recreation Area unit, for a behind-the-scenes look at the creation of the report and their hopes for its future.

State of the River, continued on page 6

New rules to protect river views, bluffs and open space!

by Irene Jones

Thanks to thousands of river lovers, stronger land use and development rules for the metro Mississippi will soon be in place.

The Twin Cities is home to the Mississippi's only national park — the Mississippi National River and Recreation Area. Running through the heart of our metro from Dayton to Hastings, our 72-mile park boasts some of the most significant natural, cultural, scenic and recreational resources along America's River. But as our region grows, how do we preserve our treasured river for future generations?

New river rules, continued on page 4

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Learn more!

Check out FMR.org and
StateOfTheRiver.com



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Mission

Friends of the Mississippi River engages citizens to protect, restore and enhance the Mississippi River and its watershed in the Twin Cities region.

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FROM THE DIRECTOR

Turning towards the river for what's real



by Whitney Clark

We live in a time where the virtual is beginning to supersede the real as the dominant mode of experience. Sociologists observe the emergence of a “post-factual” era

in politics and community affairs, where the actual and fictional stand on equal footing. In response, many of us are craving experiences, places and stories that are authentic and real. Perhaps this explains, at least in part, why so many communities are turning back to the Mississippi River.

For years, commerce, industry and private development have dominated our urban riverfronts. To be sure, our working river is an important part of our history, and towboats are part of its charm. But many riverfront communities are discovering that the Mississippi's enduring value may lie elsewhere: in its ecological richness, stunning scenery and the powerful sense of place it evokes.

Many cities and towns are seeking to revive their riverfronts with new parks, trails and public-spirited redevelopment — reconnecting residents and visitors alike to the life of the river. FMR is proud of our role in this renewed interest, as well as our recent victories to guide future redevelopment to keep the value of our majestic resource front of mind. (See “river rules,” page 1.)

7K and climbing. Can we be friends?

Over 7,000 people now like FMR on facebook. In addition to inspiring photos and interesting reading, we also post action alerts, outdoor volunteer and education activities, and other ways to help the river. If we're not friends yet, please take a moment to help expand our social influence by liking us at facebook.com/friendsmissriv.

While facebook is hopping these days, we should note that our e-newsletter, “Mississippi Messages,” remains the most popular way to stay up to date on upcoming FMR events and river news. Join over 12,000 of your fellow river lovers by subscribing at fmr.org.

At FMR we believe the river belongs to all of us and, as much as possible, should be accessible and welcoming to the public. In North Minneapolis, where the river has long been a private, industrial zone, FMR has successfully advocated for a new vision of public riverfront parkland. With this transition underway, we're now working to ensure better, safer access to the river for Northsiders, long separated from their riverfront by Interstate 94. (See page 3.)

We also believe the river should be healthy enough for us to swim or fish in it. Judging by the enthusiastic reception to the recently released *State of the River Report: Water quality and river health in the Mississippi River*, (see cover story) an increasing number of people, including reporters and other influencers, agree.

So many of our modern landscapes — freeways, malls, subdivisions — are sterile and devoid of character. But the Mississippi River with its bluffs studded with gnarly oaks and its backwaters teeming with ducks, herons and egrets, still pulses with beauty and life.

From its ancient burial mounds of the Mississippian and Hopewell cultures to the bald eagles surveying the current from the branches of towering cottonwoods, the Mississippi's inherent value as a river may, in the end, be just what we need to salve our modern alienation and ennui.



PROGRAM HIGHLIGHTS

Strengthening North Mpls connections

by *Alicia Uzarek*

Currently, most North Minneapolis residents are separated from the Mississippi River by a massive trench that cuts through the community: Interstate 94. While there are seven bridges over the highway, most aren't pedestrian- or cyclist-friendly.

With city plans in place to transition the Northside riverfront from primarily industrial usage to parkland – something FMR has long worked towards, and the cover story for our spring newsletter (tinyurl.com/FMRspring2016) – we believe residents should be able to safely and enjoyably cross I-94 to reach their local, newly improved riverfront.

Since early 2016, FMR has been pleased to have Eric King on board as a research assistant from the Center for Urban and Regional Affairs. A North Minneapolis resident, Eric has been providing information about various city, county and state plans to community members, and gathering their concerns and ideas to help bridge the Northside-riverfront divide.

Through community meetings, events and social media, Eric connected with over 500 fellow Northsiders. His outreach and research led to a number of important findings that will guide our advocacy efforts moving forward.

First, community members want infrastructure improvements along all seven bridges or river connections. This includes painted crosswalks, better lighting, improved wayfinding signage, decorative wrought iron (instead of chain-link) fencing, and metal railings and other safety barriers to separate sidewalks, bike lanes and cars.

Residents also favor the construction of a new land bridge over I-94 between the Lowry and Camden bridges, connecting Perkins Hill Park and Cityview Community School to the former Upper Harbor Terminal site soon to become a riverfront park.

Finally, Northsiders suggested deeper examination of nonphysical concerns and barriers, such as potential gentrification that could result from improved community amenities and poor air quality along the river due to local industries.

FMR looks forward to continuing the conversation and advocating alongside Northsiders to improve local pedestrian and bicycle routes to the Mississippi River.

Get involved! Sign up to become a River Protector at fmr.org/advocate.



At an FMR presentation on plans and options for the North Minneapolis riverfront, Jessie McDaniel (foreground) of Appetite for Change emphasized the importance of local access to both existing and planned riverfront biking trails and parks.

Senator Sieben joins the FMR board!

We are pleased to announce that Senator Katie Sieben has joined the FMR Board of Directors!

For 10 years, Katie has represented Newport, Cottage Grove and the Hastings area in the Minnesota Senate, and served four years prior to that in the state House. After 14 years of fulfilling service, she has decided not to seek re-election.

Katie has been a leading environmental legislator. Working closely with FMR, she was the lead Senate author of legislation to develop new state rules for the Mississippi River Corridor Critical Area (see page 1). She also passed legislation to fund water quality monitoring of the St. Croix River, establish the state's environmental health tracking program, and ban BPA in baby products (long before the

FDA followed suit).

"The Mississippi River is an integral, defining focal point of Minnesota. I'm proud to join the FMR board and look forward to doing my part to help see the river is protected for my children and future generations," says Katie.

We are honored to bring such an environmental champion and public servant aboard.



Senator Katie Sieben, FMR's newest board member

AUTUMN 2016

PROGRAM UPDATES

New river rules!

continued from page 1

Since the 1970s, the state has regulated development in the Mississippi River Corridor Critical Area, which has the same boundary as our national park. Several years ago, FMR and our allies successfully advocated for the state to draft new rules more in keeping with our river corridor's national significance.

Over the course of the multi-year rulemaking process, FMR engaged more than 2,500 people who signed petitions and sent letters and emails to the Minnesota Department of Natural Resources, Governor Dayton and other officials. Now, at long last, newly updated rules are expected to be formally adopted by year's end.

Overall, the new rules will better identify and protect the river's unique resources. They also better reflect existing as well as planned developments, allowing metro river corridor cities to continue to grow while embracing and preserving their riverfront.

"These new rules are an enormous achievement," said longtime FMR board member Peter Gove. "FMR has been at the heart of this effort for more than a decade — urging the Minnesota Legislature and DNR to develop the rules, closely monitoring every step of the process, and keeping our members informed. FMR sliced through the red tape to make sure that community voices were heard, and rallied the troops of advocates and allies to weigh in when they could make the biggest difference."

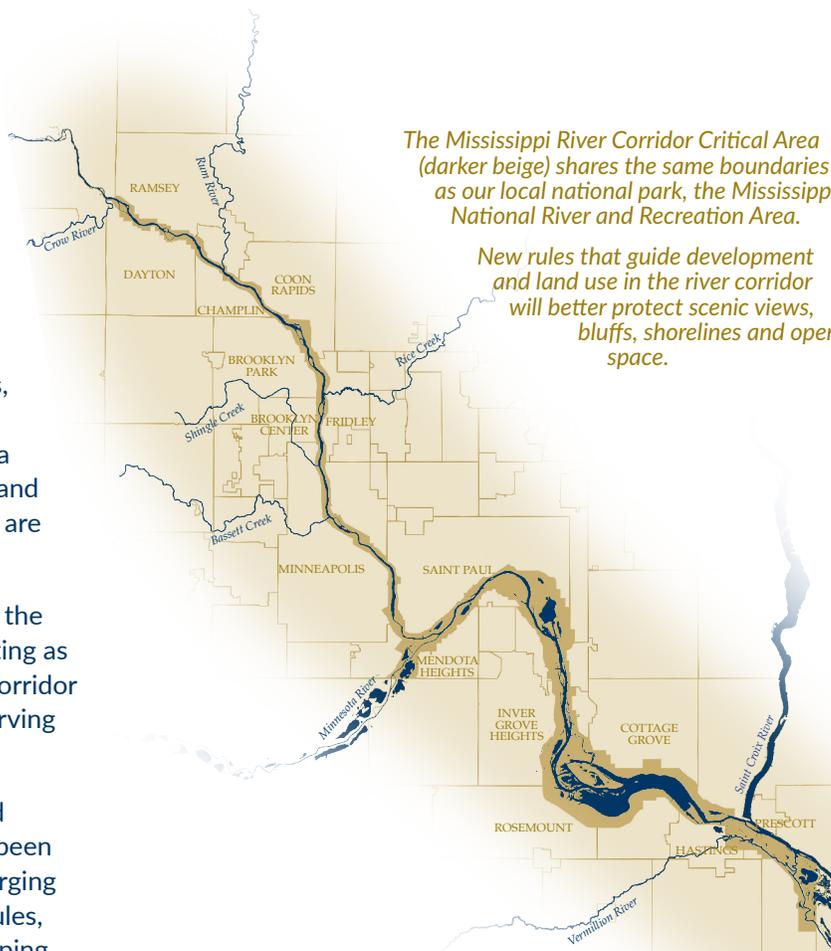
Improved protections

The new rules generally provide a set of clear, consistent and effective standards and guidelines for development in the metro river corridor. Particularly noteworthy changes include improved districting, stronger bluff and scenic protections, and better preservation of open space.

The new rules establish several zones or districts with different building-height, open space and other requirements. Now instead of four classifications there are six, providing a more nuanced reflection of each area's resources and current or planned development.

FMR successfully advocated for important scenic locations — Nicollet Island, the River Gorge, the Minnesota confluence, and Spring Lake Park — to be in districts with lower building heights.

Scenic protections were also preserved in riverfront neighborhoods and rural areas, while in more urban areas height limits were adjusted to match the character of existing or planned development. Additionally, visual



The Mississippi River Corridor Critical Area (darker beige) shares the same boundaries as our local national park, the Mississippi National River and Recreation Area.

New rules that guide development and land use in the river corridor will better protect scenic views, bluffs, shorelines and open space.

impact studies and mitigation plans will be required before height variances can be granted.

Bluffs and shorelines will be better defined and protected. Within bluff and shoreline setbacks structures will be prohibited and tree removal and other land alterations limited.

Finally, open space will be required for development on river-adjacent parcels of 10 acres or more, with an emphasis on protecting shorelines, bluffs and mature trees. This means as much as 50% of the land in undeveloped areas of the corridor will be conserved as open space, a provision FMR fought hard to include.

What's next

Once the rules are formally adopted, the 25 river corridor cities and towns will need to update their plans and ordinances. For some, it will be the first time in decades.

"We're looking forward to working with many of the corridor communities to help them shape their vision for the river and develop strong ordinances to protect that vision," said FMR Policy Advocate Alicia Uzarek.

If you'd like to be involved, let us know! Sign up to be a River Protector at fmr.org/advocate, and we'll be in touch when the river needs your voice the most.

Thank you loppers, pullers and haulers!

FMR volunteers stretch river restoration funds

by Adam Flett

As soon as the snow melted, FMR stewardship volunteers were out picking up trash, planting native species and weeding areas planted by fellow stewardship volunteers the previous season. From Earth Day into early November, over 1,500 volunteers contributed more than 2,500 hours through FMR habitat restoration events and outings.

Spring was filled with bag upon bag of invasive garlic mustard, each plant hand-pulled by a volunteer river steward. Left unchecked, garlic mustard will dominate the floors of our riverfront and bluff forests, leaving little to no room for spring ephemeral flowers or other native plants important for wildlife and pollinators.

In fall, volunteers frequently got their workout hauling brush. Clearing areas heavily infested with buckthorn or honeysuckle



Over 1,500 volunteer river stewards helped restore habitat with FMR this season.

gives native plants (both existing and volunteer-planted) the space to grow. In addition to providing habitat, the native plants also soak up more water with their deeper roots, helping to decrease runoff and erosion.

Typically, FMR ecologists hire professional crews to chainsaw or otherwise slice through or pull up invasive trees and plants. By taking on the pesky tasks of hand-pulling invasives and hauling out the pre-cut brush, our volunteer stewards help stretch our restoration funds.

While weeding and hauling may not sound as appealing as other volunteer tasks, like planting trees or collecting prairie seed, they're equally important for habitat restoration. At FMR, we're continually amazed by volunteers' enthusiasm and willingness to help. We could not accomplish as much without their dedication and hard work!

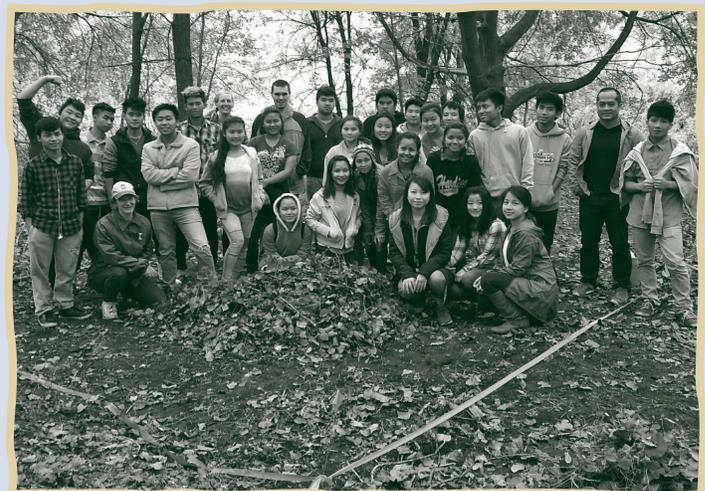
Local high schoolers to the research rescue

by Alex Roth

What do you do when you need natural resources data but don't have the time or resources to collect it? Like many natural resources groups FMR is turning to citizen scientists for help. Citizen science involves the public in data collection and analysis. It's a symbiotic relationship. Interested nonscientists get to collaborate with researchers and other professionals, while organizations get answers to their questions.

At FMR, we've developed a citizen science program based around a few groups of particularly interested and energetic learners: high school students. Partnering with schools in Elk River, St. Paul and Hastings, we've designed research and monitoring questions that students are investigating, providing us with valuable data about the progress and effects of our habitat restoration work.

In Elk River, students are monitoring reptile and amphibian populations at the William H. Houlton Conservation Area, tracking them before and during the restoration process to document our impacts. In St. Paul, Harding High Earth Club students are conducting experiments that investigate the best combination of invasive species removal and native plant seeding to help natural areas recover from garlic mustard invasion.



In addition to actively restoring habitat along the river on St. Paul's East Side, the Harding High Earth Club is working with FMR to research the best way to help natural areas recover from infestations of the invasive species garlic mustard.

With only two ecologists on staff and a full plate of restoration planning and implementation work, we're unable to collect this data on our own. But with a little help, we'll now have the info we need to help us improve, and perhaps inspire a few young scientists — or at least nature enthusiasts — along the way.

How do you feel about reactions to the report?

Lark: Developing this report took a lot of time and effort. A lot. From many people. When it's well received by our readers it makes that effort worthwhile. I think I can speak for Trevor when I say we're both grateful to be part of a community that has such an appetite for meaningful information — and the commitment to do something with that information.

When we look back and see some of the impact (see sidebar, opposite page) of the first State of the River Report, that feels pretty amazing. You — our readers, members and friends of our organizations — have made a number of significant changes in the river's story possible. Thank you! We look forward to seeing where we all take this information this time around.

You break the report into digestible sections — on river flow, swimming and recreation, river life, ecological health and additional contaminants — but there's still a lot to absorb. What's the main finding or lesson you'd like people to understand?

Trevor: A great takeaway is that the river is polluted, but we've made great progress in some areas and not in others.

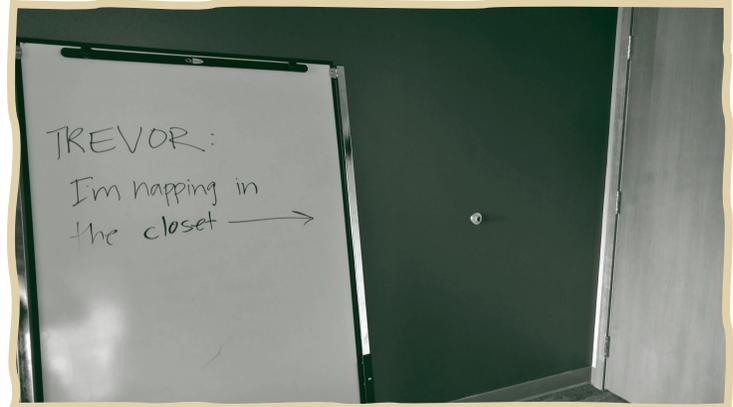
The return of river life — such as bald eagles, fish and mussels — is the result of decisive action to control pollutants like DDT, sewage and urban runoff. This is evidence that the river will respond to well-directed restoration efforts, and that collective public action to address pollution can be successful.

The other side of the coin is that the river is impaired with excess bacteria, phosphorus, sediment and some pollutants in fish. In addition, increases in flow (24%), nitrate (44%) and the ongoing threat of invasive Asian carp are serious concerns. These all require the same decisive public action that has proven successful in the past.

Whether or not the people of Minnesota demand such action, well, that's up to all of us.

Lark: One of the main takeaways for me is that the story of the Mississippi River is a human story. That may sound obvious, but our lives don't seem to reflect an authentic understanding of this. The river and the life that depends on it get sick when we take the river for granted, when we pretend our actions and choices aren't impacting the river. But when we do take responsibility, it responds well.

We're always a part of shaping the health of the Mississippi River. It's a question of how far "upstream" in our lives we're willing to examine the consequences of our choices.



Even with a team of 40-plus and a two-year timeline, the co-authors of the State of the River Report were often holed up in the conference room for 16-hour days. Luckily, the closet doubled as the catnap room.

Can you give FMR supporters an idea of what goes into a project like this?

Lark: Let's just say Trevor and I were holed up in the same conference room virtually every day for most of the summer. We "enjoyed" several 16-hour days, some of which went beyond midnight. But we may never have discovered our new favorite Chinese restaurant downtown otherwise!

We developed our first budget for this updated report in September 2014 and held our first Science Advisory Committee meeting that November. Since, it's been deeply humbling to see so many people give so much to this project — especially our 30 scientific advisers. There's important data out there, and an amazing community of scientists willing to give a lot of time to make it available and help us understand the stories it's telling.

FMR supporters have been hearing about the importance of agriculture in the Mississippi's health for some time. Did the report reveal any new farming-related lessons?

Trevor: Yes, a key finding is that nitrate concentrations in the river increased by 44% between 1976 and 2014. That's cause for great concern. We've spent a great deal of money and effort as a state encouraging more precise farming practices that, in theory, should have at least held the line on pollution.

This finding, along with the phosphorus and sediment impairments driven by agricultural practices, suggests we need a new approach to addressing farming-related pollution. We lay some of these out in the FMR Policy Guide, like requiring permits for large-scale artificial drainage systems and creating market-based incentives to make it more profitable for farmers to grow watershed-friendlier crops.

Can you tell us about the newer or emerging pollutants covered in the report?

Trevor: We included several indicators not in the original 2012 version of the report: chloride, pesticides and microplastics.

The metro Mississippi meets water-quality standards for pesticides and chloride, but we need to be vigilant to minimize the potential impacts of these pollutants over time. Chloride levels in particular have increased by 81% just since 1985 – and chloride pollution is more or less permanent, since salt doesn't break down in our environment.

Microplastics were a bit of a surprise. While microbeads had previously made the headlines, 90% of the plastics we found in water, sediment, fish and mussel samples were microfibers. They often come from consumer products like fleece jackets and synthetic clothing – a single garment can shed thousands of microfibers in just one wash. The fibers travel through the drain and move right through wastewater treatment systems and into our surface waters. Just downstream of the metro wastewater treatment plant there's a real spike in microfiber levels.

Plastic microfibers have a range of negative impacts on aquatic life and health. We need more research to better understand the sources and develop potential solutions.

Winter's here. Does it really make a difference what type of fleece we buy or how much salt we use on our sidewalks?

Trevor: It turns out it does matter. Residents make choices every day that affect the river!

This winter, consider taking a "smart salt" approach. To reduce snow and ice buildup, shovel early and often. And if you do need to use salt, use it sparingly and never apply rock salt (standard deicing salts) below 15 degrees – they don't work when it's that cold!

Also, consider alternatives like sand or gravel to increase traction, especially when it's too cold for salts to melt ice. And sweep up whatever excess salt you can before it runs off into the river.

As for microplastics, we suggest buying clothes and other items made from natural fibers, avoiding single-use plastics such as plastic bags and takeout containers, and remaining careful not to litter or flush plastic materials down the toilet. You can also download the smartphone app from BeatTheMicrobead.org to scan product labels and determine whether they contain microbeads.

All of this and more is part of the Stewardship Guide at StateOfTheRiver.com, which is also where Lark and I list our upcoming State of the River presentations and events. If you haven't already, check it out!

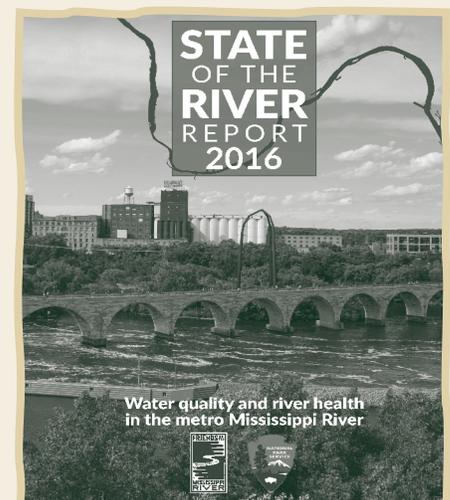
State of the River Report impact and resources

Published in fall 2012, the original *State of the River Report* led to significant changes for the Mississippi River. Chief among them: closure of the downtown Minneapolis lock to prevent the spread of invasive carp upstream, and statewide bans of coal-tar sealants and triclosan – a common "antibacterial" the report revealed as the most likely source of rising levels of cancer-causing dioxin chemicals in the river. (Triclosan was also recently banned by the U.S. Food and Drug Administration.)

So far, media coverage of this fall's updated report (fmr.org/SOTRmedia) has focused on emerging contaminants like chloride (from salt and other deicers) and microplastics, especially microfibers, as well as the vital importance of continuing to work with farmers to address agricultural pollution.

To help translate these concerns and findings into action, three companion guides are available along with the full report at StateOfTheRiver.com:

- The **Stewardship Guide** provides practical steps for individuals to take in their homes, yards and communities to improve the health of the Mississippi River.
- The **Teacher's Guide** helps teachers and students carry the lessons of the report into the classroom while meeting core standards.
- The **FMR Policy Guide** offers priority actions that federal, state and local leaders can take for the river.



Check out the full report and companion guides – for teachers, residents and policymakers – at StateOfTheRiver.com.



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A rising tide of membership



FMR members and volunteers Bryan and Cole Williams

Different experiences bring people to FMR. For the Williamses, it was a flood.

Cole and Bryan Williams and their four children moved to their riverfront home in Newport in 2014. That summer, an unprecedented flood kept much of their property underwater. From this grew a profound fascination and respect for our Big River.

Cole and Bryan attended their first of many FMR events this spring, an invasive species removal. "We were pleasantly surprised when our questions were met with thoughtful and highly educated answers," says Cole. "FMR hires people with substantial knowledge in ecology, prairie restoration and limnology. It was refreshing and encouraging to leave learning something every time."

Every member story is unique, but we share a common interest in protecting the river. Together, members provide FMR with the critical resources that allow us to do just that. Thank you all! (Read the rest of the Williamses' story at fmr.org/memberstories.)

Join our growing membership of river stewards at fmr.org.
Until the end of the year, all new and increased gifts will be matched dollar for dollar.

FMR.ORG

Get the FMR event calendar and river news in your Inbox! Sign up for our twice-a-month e-newsletter "Mississippi Messages" at www.fmr.org.



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