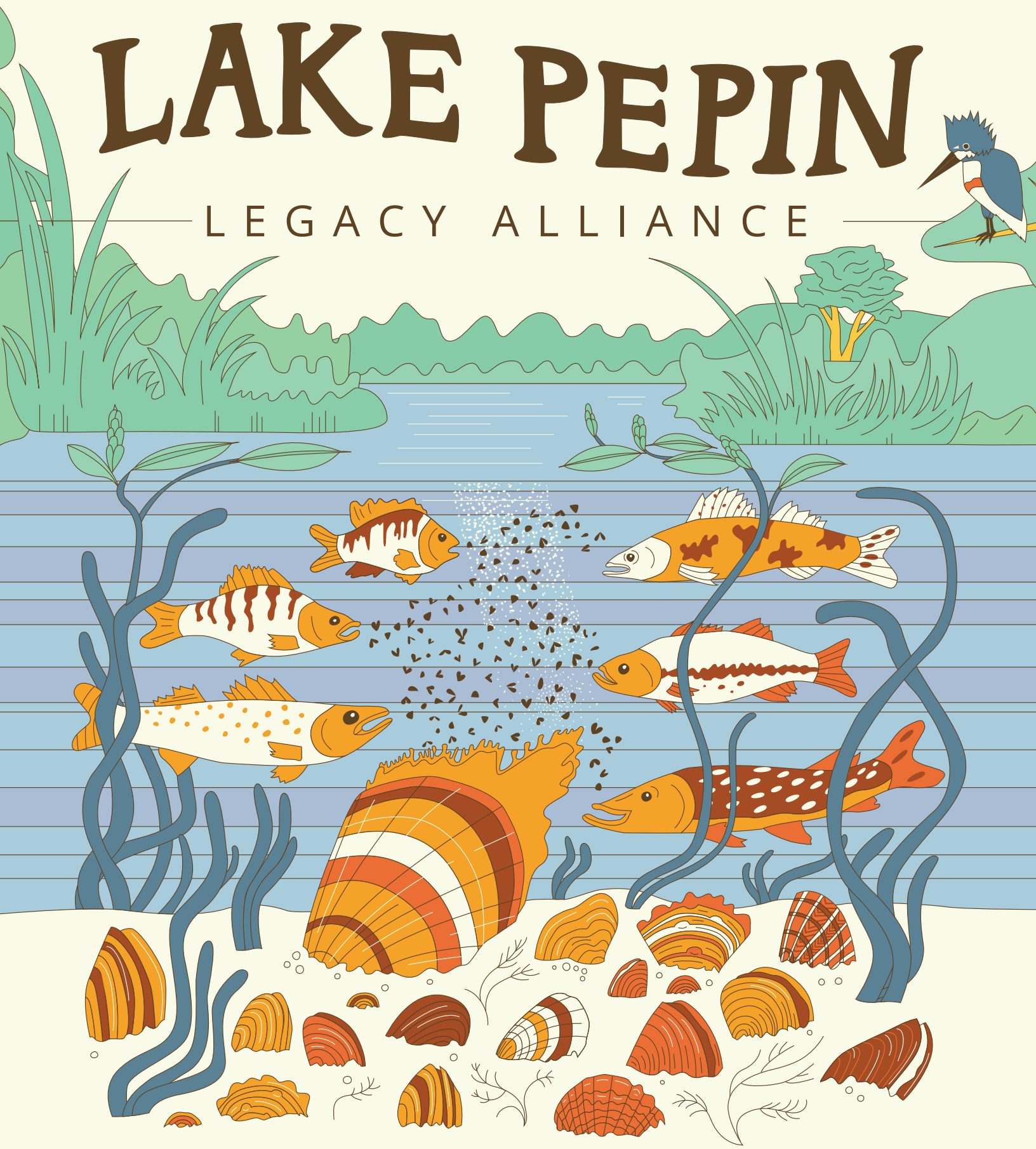
LAKE PEPIN

LEGACY ALLIANCE



ANNUAL REPORT | 2023

EXECUTIVE DIRECTOR REPORT

To our members,

The Lake Pepin Legacy Alliance is entering a new and exciting stage in its relatively young nonprofit life (we are 14 years old!). Construction to restore habitat, water quality, and boat access has started in Bay City and a similar project in Wacouta Bay is actively being planned by the Corps of Engineers. If funding through the Navigation and Ecosystem Sustainability Program (NESP) remains available, we can see a federal investment of up to $50 million at the head of Lake Pepin (current commitment is ~ $34 million).

Our local contribution, which ignited the project, happened because communities around the lake agreed to support each other and began with the most promising large-scale solution at the time. Every $10 we raised locally in the early push from our municipal pledges (totaling $117,500) will leverage between $2,900 and $4,250 of federal funding appropriated specifically for channel maintenance and ecosystem restoration in the Mississippi River!

As we continue to track the array of work being completed at the head of Lake Pepin, we are building partnerships and soliciting feedback on our plans for the next 2–3 years. We have a spotlight on Lake Pepin right now and a fire alarm that's been growing louder since we started. This is our opportunity to ensure Lake Pepin gets the regional and national attention it needs to protect it for generations to come.

With that, I invite you to stay engaged with us, reach out to me, Alex, or Emily with questions or to request a presentation (even one for a group of your neighbors!), and explore this year's annual report through the lens of some of its lesser known creatures.

Thank you for reading!

Rylee Hince
Executive Director

BOARD OF DIRECTORS

Doug Niemela
BOARD PRESIDENT

Doug is the Executive Director at H20 for Life in White Bear Lake, Minnesota, and has focused his professional career around legislative and political action related to environmental protection. One of the highlights of Doug's career has been to help pass the Legacy Amendment, which supports access to the great outdoors, parks and trails, and the arts. Doug enjoys paddling the Driftless and exploring the trails and parks along the Upper Mississippi River.

Peter Coyle
BOARD VICE PRESIDENT

Peter is a native of Lake City, Minnesota, and recently moved "home" after living outside the area for nearly 40 years. His life-long love of the Mississippi River bluff country, especially Lake Pepin, compels him to contribute his professional experience as a regulatory lawyer to help advocate for sensible measures that will sustain and protect the vitality of the river for generations to come. Peter is a partner in a Minneapolis-based law firm.

Arlin Albrecht
TREASURER

Arlin has a deep commitment to service and the environment. When the Mississippi River became dangerously polluted nearly 50 years ago, he helped form a citizen's organization with the motto, "We can't all live upstream." The organization played a key role in securing federal legislation requiring cities to improve sewage treatment practices. Today, Arlin continues his commitment to water quality by serving as LPLA's treasurer in its quest to help save the lake from sedimentation and phosphorus pollution.

Missi Blue
BOARD MEMBER

Missi is from Hager City, Wisconsin. She is a lifelong river rat of Lake Pepin and the Upper Mississippi River who brings a wealth of knowledge about the river system and the people who rely on it. Missi helped LPLA organize its first Mud Picnic and she stays engaged with public meetings about restoration and upstream water pollution. Her scientific background on the natural environment is an important addition to LPLA's science committee.

Michell Wincell O'Leary
BOARD MEMBER

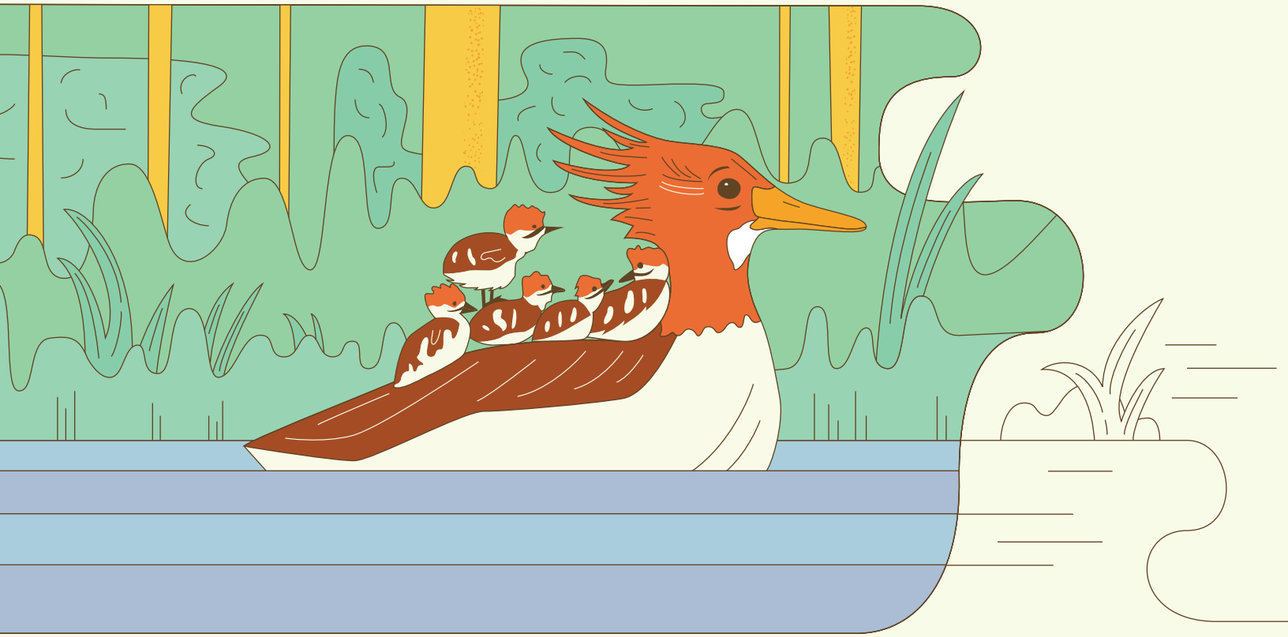
Michelle is passionate about contributing her energy, enthusiasm, and experience to the effort to save Lake Pepin, which has been her seasonal home for many years. She loves to experience the elements of nature, is mesmerized by the river's migratory birds, and enjoys quiet meditation amidst the sanctuary of Lake Pepin. Michelle seeks to give back to the local community where marina living, sunset cruises, and friendship abound. She is the Founder of Spirit of Therapy, a Wellness, Health Care, and Leadership Consultation and Training agency, and is active globally on LinkedIn.

Scott Feraro
BOARD MEMBER

Scott makes his home along the Mississippi River flyway in Fountain City, Wisconsin. He's been sailing Lake Pepin and hiking the surrounding bluffs for more than 20 years. Scott has always had an experiential appreciation for the immense importance that a healthy Lake Pepin has on the lives of folks who live, work, and play here. He's spent his professional career helping organizations all over the world to grow, change, and reach their aspirations, and is passionate about contributing his creative energy to LPLA's mission.

A GLOBALLY IMPORTANT

BIRD AREA



Lake Pepin is designated by Audubon as an "Important Bird Area," or IBA, in part because of the habitat it provides for the Common Merganser. Featured above is the stunning female Merganser, a long-bodied duck with thin, pointed wings. Her bill is straight and narrow, unlike the wide, flat bill of a typical duck. Females have shaggy crests on the back of their heads.[1]

The IBA distinction for Lake Pepin means it has been recognized for its global significance in the conservation of the nation's bird populations.

It is similarly recognized as one of the best places in Minnesota and Wisconsin for bird watching, especially during the spring and fall migrations.

"In southeast Minnesota, the Mississippi River flows through Lake Pepin for 21 miles. The lake is an important stopover and provides critical habitat for birds like the Common Merganser and the White Pelican as well as providing a unique and diverse fishery. The Lake also helps to improve the quality of Mississippi River water for hundreds of miles downstream."[2]

The Mississippi River acts as a highway-in-the-sky for many migrating birds; the route, fittingly called the Mississippi Flyway, is the most used bird migration path in North America. More than 325 bird species travel along the flyway each year between their breeding grounds up north and wintering grounds down south.

The Common Merganser is most likely to be spotted in November and December, which coincides with Audubon's annual Christmas bird count, but other species are prevalent throughout the year and migration seasons. Around Lake Pepin you can see resident and migratory bald eagles, tundra swans, white pelicans, great blue herons, sandhill cranes, all kinds of warblers, and many more. If you are in the area, make sure you have a pair of binoculars!

1. *The Cornell Lab of Ornithology. (n.d.). Common Merganser Identification. All About Birds. https://www.allaboutbirds.org/guide/Common_merganser/id#*
2. *Audubon Minnesota. (n.d.). Improving Lake Pepin Habitat. https://mn.audubon.org/landingwater-birds-and-people/improving-lake-pepin-habitat*

THE ORIGINAL RIVER

ENGINEERS

For the past 200 years or more, humans have been altering the natural course of the Mississippi River to support settler development, industry and economies, and global trade. The impact of these alterations is observed in the state of the Mississippi River today. The Locks and Dams provide (mostly) reliable navigation during times of drought, but have also irreparably altered the habitat of the native fish population. These impacts, the good and bad, happen at the scale and pace of human development. Before that, protocols for engineering with the river were set by a different species: the beaver.

"The American beaver is the largest rodent in the United States, growing from two to three feet (0.6 to 0.9 meters) long, not including the tail. They have dark-brown waterproof fur and webbed feet. Beaver teeth grow continuously throughout their lives, and beavers must gnaw on trees to keep their teeth from getting too long. Thick layers of enamel on their teeth give them an orange color."

"Beavers also build homes called lodges out of branches and mud, which can often only be accessed from underwater entrances in the ponds."[1]

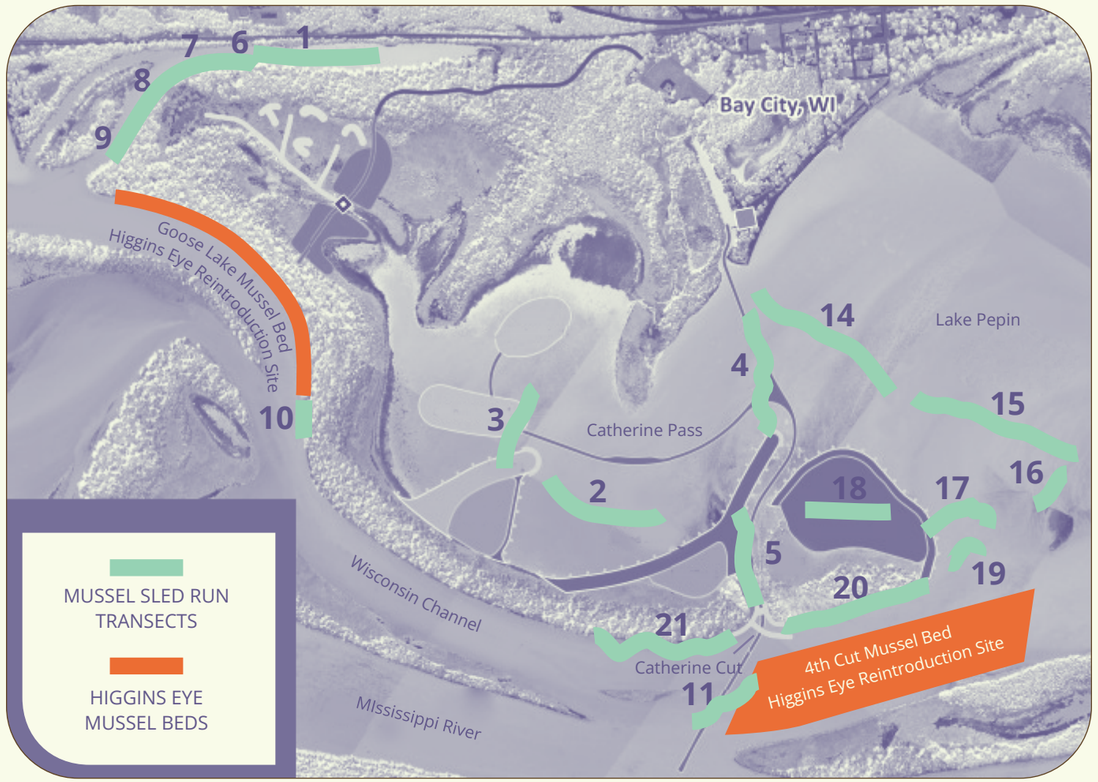
Beavers create neighborhoods in the river ecosystem. Their dams brim with life: they slow and store water in ponds, offering novel communities for native lifeforms. They illustrate how to engineer nature at a pace still adaptable by the species who have evolved along with them.

The habitat restoration work being constructed in Bay City relies heavily on the natural principles of the beaver. Shorelines will be shaped (with a mechanical dredge) to both speed and slow river flood water, creating clear pools for mussels and fish to overwinter and aquatic plants to flourish, just as they would above a beaver dam.

1. *The National Wildlife Federation. (n.d.). American Beaver. https://www.nwf.org/Educational-Resources/Wildlife-Guide/Mammals/American-Beaver*

LAKE PEPIN'S GOT

MUSSELS



MUSSEL SLED RUN TRANSECTS – U.S. ARMY CORPS OF ENGINEERS, ST. PAUL DISTRICT GIS CENTER.

Native mussels are an important group of aquatic invertebrates. Both Lake Pepin and the entirety of Pool 4 (Lock and Dam 3 downstream to Lock and Dam 4) contain a diverse collection of 34 live species (9 additional species are presumed extirpated).

Near the Bay City restoration project, there are as many as 25 live species reported from long-term monitoring of two mussel beds (see map) adjacent the project site. Included in the mussel beds is the federally-listed endangered Higgins eye mussel and several additional species listed for protection in either Minnesota or Wisconsin.

Higgins eye were extirpated from the pool in the last century, but given the recent resurgence in native mussel natural re-colonization in the past few decades in the upper pools of the Upper Mississippi River (and within the Wisconsin Channel in particular), the species was artificially propagated and reintroduced into their current locations. The communities have survived in their beds since 2003 and recent evidence shows reproduction and recruitment of new individuals of the species into the pool and adjacent pools.

MORE

MUSSELS

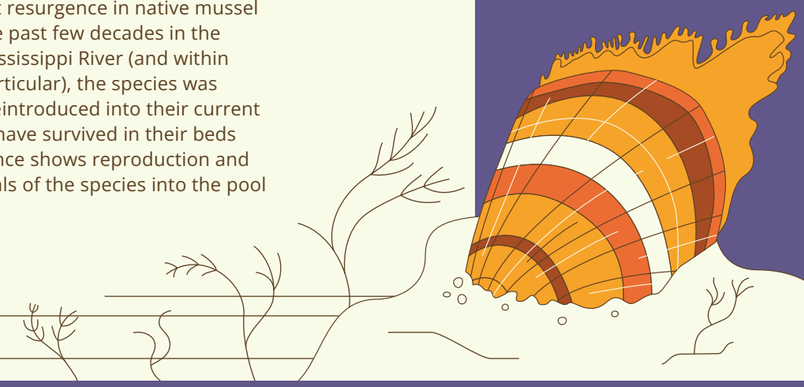
Overfishing had the first noticeable impact on the mussel populations along with the lock and dam system and its impact on water depth and velocity. Mussels can be sensitive to changes in water temperature, too.

Mussels pump and filter water through their gills in order to feed and breathe. As water passes through them, they act as a super-filter, taking in pesticides, microplastics, and other pollutants along with the phytoplankton they are trying to eat. They sieve out impurities from water, enhancing clarity and quality.

Mussels exist in a symbiotic relationship with one or more fish host species. When preparing for maturity, mussel larvae flow gently in the current - still loosely attached to their adult - until they are consumed by a particular fish. At this point, they attach themselves to the gills and hold on. These juvenile mussels are not parasites, but hitchhikers dropping off and settling into a new part of the riverbed.

Restoration of the river bottom, structures which mimic beaver dams, and natural backwater forests that redirect sediment flow and deepen the river pool's depth create space for native mussels to reestablish. These structural adjustments, combined with mussel hatchery work along the upper Mississippi River, can strengthen and diversify Lake Pepin's mussels.

The Higgins eye pearlymussel was listed as an endangered species on June 14, 1976. It was among the first of the freshwater mussels to receive federal protection. The U.S. Fish & Wildlife Service website provides a detailed description of this special pearlymussel, featured with its babies and host species on our 2023 annual report cover.



- The Higgins eye pearlymussel is a freshwater mussel that only occurs in parts of the upper Mississippi River north of Lock and Dam 9 at Keokuk, Iowa. It is also found in three tributaries of the Mississippi: the St. Croix River between Minnesota and Wisconsin, the Wisconsin River in Wisconsin, and the lower Rock River between Illinois and Iowa.
- Primarily a sedentary species, the Higgins buries itself at the bottom of large rivers. It has a soft body enclosed by the shell and consists of gills for breathing, a digestive tract for processing food, and a large, muscled foot for moving and anchoring in the stream bottom.
- Habitat loss and degradation and exotic species are major threats to the survival of the Higgins eye. Impounded river systems have altered the water flow patterns, substrate characteristics, and host fish habitat, which has severely affected how the mussels feed, live and reproduce.
- This is a species that depends on deep, free-flowing rivers and clean water. Municipal, industrial, and farm run-off further degrade water quality. As filter-feeders, mussels concentrate chemicals and toxic metals in body tissues and can be poisoned by chemicals in their water.
- Zebra mussels are the greatest known threat to the Higgins eye. Zebra mussels attach to any hard surface, including shells of other mussels, preventing them from normal travel, burrowing, and opening and closing their shells.
- Several Higgins eye populations in the Mississippi River have been hit hard by zebra mussel colonization. The population in Prairie du Chien, Wisconsin, has been reduced from one of the most numerous to one of the most threatened.
- Technology to control zebra mussels is being studied, but no successful measures have yet to be developed that can reliably limit zebra mussel colonization without harming native mussels.[1]

1. U.S. Fish & Wildlife Service. (n.d.). Higgins' Eye. https://fws.gov/species/higgins-eye-lampsilis-higginsii

A RUSHING RIVER

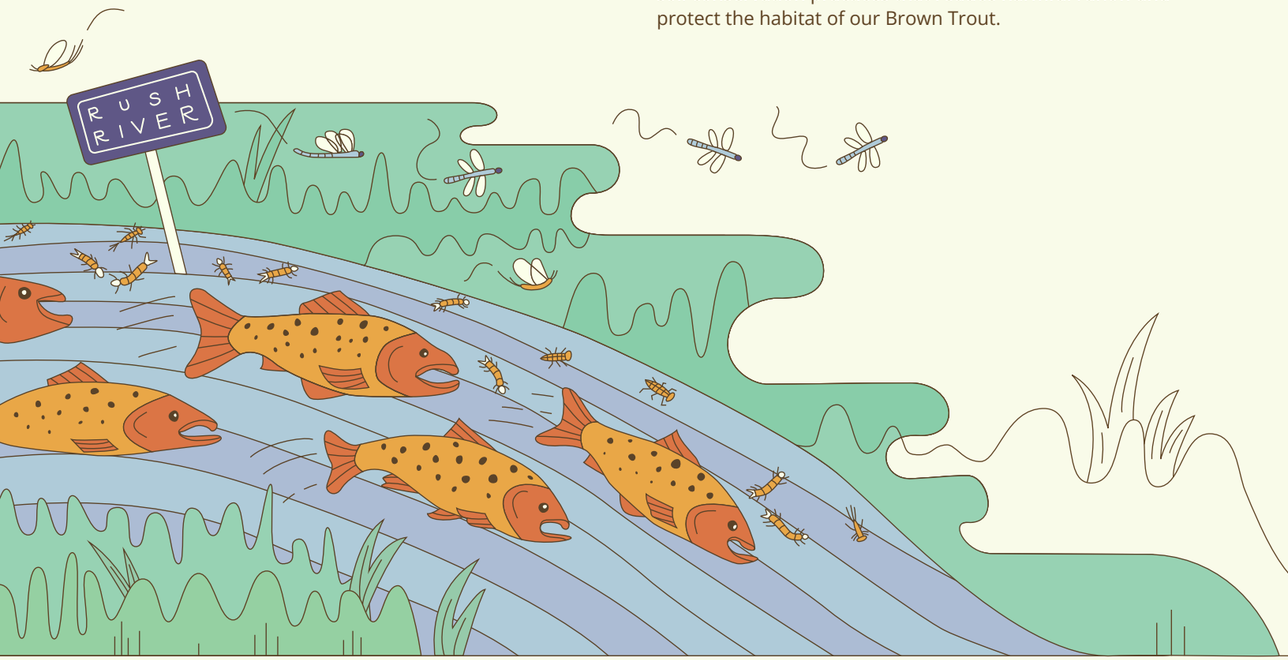
Lake Pepin's longest tributary, the Rush River, flows for nearly 50 miles from its source near Baldwin, WI, to its mouth at Maiden Rock. Substantial upstream groundwater input helps maintain the perennial cold, clear water conditions that make Rush one of Wisconsin's finest trout streams, well known among anglers region-wide.

The Brown Trout that inhabit the Rush River need water that is not only cold, but clear, and rich with oxygen. Sediment from erosion, excess fertilizer from yards and farms, and the clearing of shade trees can make rivers unfit for these fish to survive.

The female brown trout needs a gravelly river bottom to make her nest, where she can lay 400-2,000 eggs at a time. She covers her eggs with the gravel she removes to build the nest, and the male defends it.

Because of its thriving brown trout population, the Wisconsin Department of Natural Resources has included the Rush River on its 2018 "Healthy Waters" list. However, "healthy waters" are no longer routinely monitored by the state and volunteer citizen monitoring is encouraged.

Through local cost-share programs, Pierce County, Wisconsin estimates about $4 million has been distributed to around 100 landowners along the Rush River to install soil conservation practices that reduce harmful runoff and protect the habitat of our Brown Trout.



INVASIVE CARP

BACKGROUND:

In a 2020 partnership with Goodhue County, LPLA staff reviewed Minnesota funded research on carp physiology and behavior and spent time interviewing field staff, boaters, fishermen, and government officials to identify the best available tools for preventing invasive carp from reproducing in Lake Pepin. Thanks to LPLA's Program Director, Alex Keilty, we have been following the current decision making structure in Minnesota and representing LPLA's concerns among key leaders in the process. The most relevant information for Lake Pepin came, in part, from LPLA's own interview with the lead researcher a few years ago.

HERE IS WHAT WE HAVE LEARNED

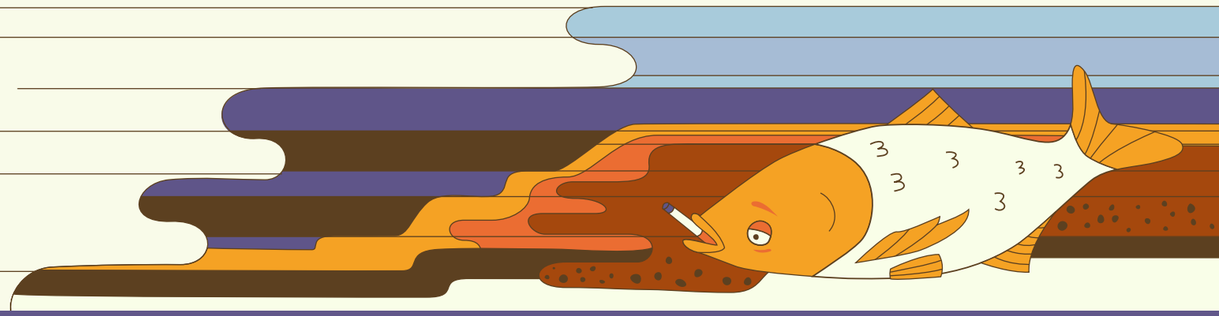
Q: WHAT IS THE STATUS OF CARP IN THE MISSISSIPPI RIVER?

ANSWER: They have moved beyond Lock and Dam 8, which was entirely predictable. Carp have a natural drive to swim upstream to reproduce. They can swim through the spillway gates when the water levels are high. The more likely reason carp are not reproducing in Minnesota yet is because the spillway gates are lower, and the locks and dams are more challenging to get through. At Lock and Dam 5, the spillway gates are only out of the water 2% of the time. Lock and Dam 4 is also a strong place to stop them from moving upstream. We can stop 99% of carp with almost no cost, just by regulating the spillway gates and putting a deterrent in the water.

We can reduce the number of carp moving upstream further if Lock and Dam 4 and 5 work in tandem to protect Lake Pepin by regulating the spillway gates – even just adjusting them 2 inches. Then you can add a bioacoustics fence to deter even more from coming through. Ultimately, the fewer that get through, the less likely the chances are of reproducing in Lake Pepin. That chance is never zero because some will inevitably come through and you just need the right number, and for the male and female to find each other, for the population to explode.

Q: HOW LONG DO WE HAVE BEFORE INVASIVE CARP COULD START REPRODUCING IN LAKE PEPIN?

ANSWER: There is still a lot we do not know. Carp can swim fast, so they could swim from LaCrosse to Lake City in two days. Will they? We do not know. Evidence shows that carp like to reproduce when they have larger numbers – a strategy known as predator swamping. In Canada, they believe that 10 carp constitute a large enough population to reproduce. We do not know that number, but we do see that larger numbers tend to trigger reproduction. A year of big floods could allow them to take off.



IT IS ALL

CONNECTED

The merganser, the beaver, the mussels, and the brown trout all have something in common: they need clean water and a functioning ecosystem to provide adequate housing and nourishment. Carp, on the other hand, are bottom feeders. They can survive when nothing else is left.

Just as the mussels filter our water from the riverbed, prairies and wetlands filter our water before it enters the river. Restoring native prairie and wetlands provides the best way to (not only) create terrestrial habitat, but to protect the aquatic ecosystems that are impacted by upstream land use. If you've planted perennials and seen the honey bees or bumble bees return to your land, you are part of the solution.

Thanks to our Communications Manager, Emily Burton, for her review of some illustrious perennials native to the Driftless region.

- **Golden Alexanders**
  Very adaptable and low maintenance
- **Anise Hyssop**
  Deer and rabbit resistant
- **Purple Love Grass**
  Good for dry/sandy soil – plant this instead of trying to maintain lawn
- **Orange Coneflower**
  Good for pollinators
- **Wild Bergamot**
  Adaptable, aromatic, attracts pollinators
- **Glade Mallow**
  Rare and only found in the Driftless
- **Plains Wild Indigo**
  Rare, gardeners encouraged to plant due to its habitat loss
- **Valerian**
  Rare, roots are used in herbal medicine
- **White Trout Lily**
  Leaves make attractive ground cover
- **Prairie Sage**
  Drought tolerant; used to stabilized disturbed sights
- **Wood Aster**
  Shade loving, easy to grow
- **Wild Hyacinth**
  Reproduces by reseeding itself but can also be grown from bulbs
- **Showy Blazing Star**
  Monarch magnet
- **Black Eyed Susan**
  Hallmark of prairies and meadows; prolonged bloom time; easy to grow

OUR OPERATION

Rylee Hince

EXECUTIVE DIRECTOR

Rylee became LPLA's first full-time staff person after completing her Master's Degree in Public Policy at the University of Minnesota's Humphrey School of Public Affairs. Her graduate research focused on the challenges of local, state, federal, and private management of sediment in the Minnesota River and the intersection of agriculture and water quality in Minnesota. In 2017, Rylee was appointed by Governor Mark Dayton to serve on the Clean Water Council for a 4-year term. In 2021, she was appointed by Governor Tim Walz to serve on Minnesota's Environmental Quality Board as a public member, where she continues to serve.

Alex Keilty

PROGRAM DIRECTOR

Alex spent 10 years in California teaching environmental science and participating in efforts to support regenerative agriculture and climate justice solutions across the country. In 2012, Alex co-founded an ecotourism paddling company in Wabasha, Minnesota, where he spent the summers guiding on the river in between his teaching years. Alex has a deep connection to the Driftless stretch of the Mississippi River and its backwaters, flooded forests, and biking trails.

Emily Burton

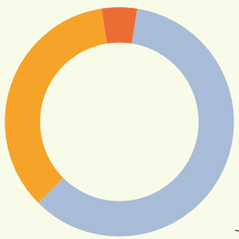
COMMUNICATIONS MANAGER

Emily completed her Bachelor's in English from Eckerd College in St. Petersburg, Florida, and her Master's in English from Uppsala University in Uppsala, Sweden. Lake Pepin has been a part of her life since working as a counselor at YMCA Camp Pepin during her younger years. Today, she lives on the lake year round with her husband, the director of the summer camp (and also former counselor), and their two cats.

REVENUE

- Direct Public Support **48%**
- Grants **52%**

PROGRAM EXPENSES



- Science & Information **35%**
- Restoration Efforts **5%**
- Education **60%**

THANK YOU!

THANK YOU TO OUR VOLUNTEER COMMITTEE MEMBERS WHO ADVISE ON PROGRAMS AND PROJECTS.

SCIENCE COMMITTEE	ARTS & ENGAGEMENT COMMITTEE	RECREATIONAL USE COMMITTEE *for special issues
Missi Blue	Steve Dietz	Missi Blue
Suzanne Blue	Jan Eckhart	Greg Genz
Dr. Richard Dart	Andi Sutton	Michael Hosfeld
Wendy Dart	Vivian Stolz	Brian Klawitter
Dr. Cynthia Lane	Mary Anne Wise	Jim Van Deusen
Dr. Myron Payne		Wylie Wilson
Megan Smith		

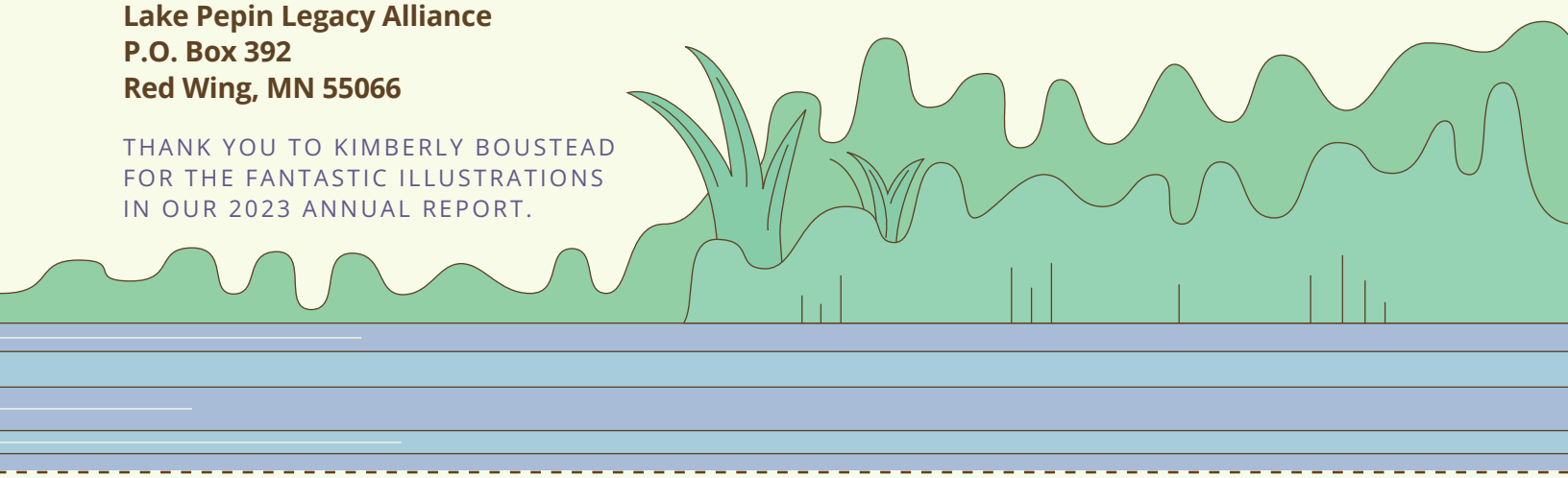
Every dollar raised during our year end drive will be matched 1:1 up to $30,000!

Our total year end goal is to raise $50,000 to support our continued efforts to protect and restore Lake Pepin's water quality, habitat, public access, and recreation for everyone along the upper Mississippi River. Will you help us?

Donate online at lakepepinlegacyalliance.org/support.
Or, cut out and send the form below with a check to:

Lake Pepin Legacy Alliance
P.O. Box 392
Red Wing, MN 55066

THANK YOU TO KIMBERLY BOUSTEAD FOR THE FANTASTIC ILLUSTRATIONS IN OUR 2023 ANNUAL REPORT.



LPLA DONATION

Full Name

Mailing Address (Street, City, State, Zip)

Email Phone

FREE SHIRT WITH ANY $50+ GIFT

Choose Size: ☐ S ☐ M ☐ L ☐ XL ☐ 2XL

OR FREE HAT WITH ANY $100+ GIFT

Choose: ☐ Limited edition merganser ball cap

Contribution: $ _____

Lake Pepin LEGACY ALLIANCE ORG

LPLA is a 501C3 non-profit organization. All contribution are tax-deductible EIN: 27-057323