

# LAKE PEPIN LEGACY ALLIANCE



LakePepin  
LegacyAlliance

.org

TO SAVE A DISAPPEARING LAKE ON THE MISSISSIPPI RIVER



## Executive Director Note

# BELOW THE SURFACE

At the head of Lake Pepin lies the iconic Lighthouse Island, which has grown over a mile in the last 50 years. The sedimentation extends hundreds of yards downstream and is a common boat grounding area.

There is comfort in the predictability of nature's rhythms, and on the Mississippi River, those rhythms feel ethereal. When an out-of-state relative excitedly tells me that he sees bald eagles from time to time, I smile to myself and think "you have no idea." Lake Pepin is a gem of the Mississippi River and global hotspot for wildlife viewing. Even after migrating birds leave, resident bald eagles provide spectacular shows when large groups gather around open water, looking sharply for the movement of a meal below the surface.

When rhythms are disrupted, we notice. This year, Covid-19 has disrupted our individual and communities' lives in a myriad of ways. Nature has been a reassuring constant, reminding us of our larger connection—and responsibility—to each other and the world. The serene glow of a sunset over Lake Pepin's horizon offers space to reflect, heal, and find peace to ensure we can continue engaging towards a more just and equitable future. It has reminded us that protecting Lake Pepin is about safeguarding meandering boats and migrating birds, but also healthy people and communities.

We are at a moment in time when so much is possible. We have an opportunity to shape the future of Lake Pepin and preserve the beauty and character that makes this area so special. Lake Pepin Legacy Alliance is here to create a future vision together, for everybody.

In September, our Board of Directors approved a strategic plan that invites greater community involvement and action within our organization. As we move forward, we will continue to examine our values and work to authentically speak for all of Lake Pepin, including the birds and people passing through.

Thank you for adding your voice.

**RYLEE HINCE**  
Executive Director



## STAFF

### **RYLEE HINCE**

Executive Director

### **KENZ BECCO**

Outreach & Engagement Director

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Anne Wise

# OUR SHARED EXPERIENCES

Despite a global pandemic, our community continues to come together virtually to celebrate and protect Lake Pepin. Throughout the year, we listened to your local experiences, observations, and priorities. Nearly 350 people took our community survey and many volunteered time to guide our strategic planning effort. Follow us on Facebook or Instagram to join the conversation and share your photos! @lakepepinlegacyalliance

## CELEBRATING ECOLOGICAL RHYTHMS

Whether it was the winter thaw, spring bird migrations, summer mayfly hatches, or fall colors—nature's rhythms were vibrant and comforting this year.

Mayflies are an indicator of good water quality!



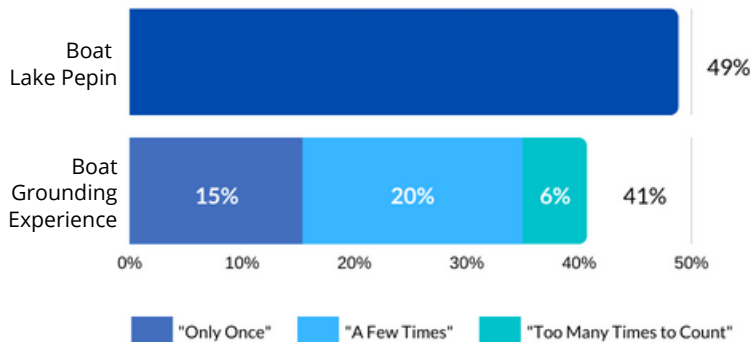
## FINDING PEACE IN NATURE

Our community describes Lake Pepin as our "happy place" regardless of whether they use the lake or river directly or whether they are a resident or visitor.



## DEALING WITH BOAT GROUNDINGS

People reported boat groundings in areas across the entire lake. Forty-nine percent of survey respondents indicated that they boat in Lake Pepin and 41% disclosed at least one boat grounding experience.



## ENJOYING OUTDOOR RECREATION

Getting on the water was a popular social distancing activity that provided joy and a sense normalcy this year. River traffic was noticeably higher and MN and WI both reported increases in spring fishing licenses.



## TAKING ACTION

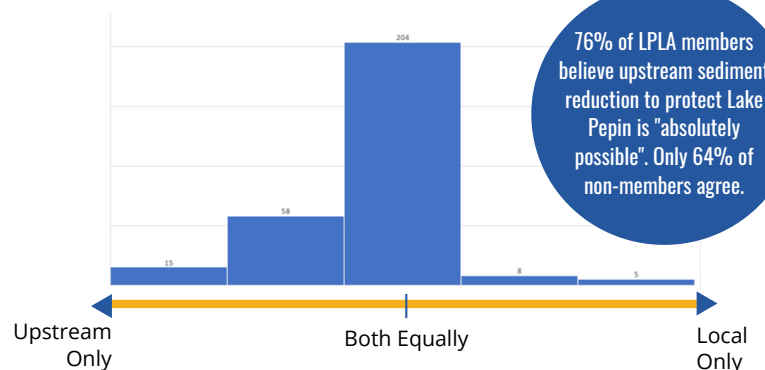
Thank you for submitting comments on the restoration project, contacting us about ecological and navigational concerns, joining our spring clean-up, and everything else you do to protect the lake and river!

Jayden Jech researched fish and wildlife and made field observations at local tributaries during his LPLA internship this year!



## ADVOCATING UPSTREAM

The majority of our community believes LPLA should balance upstream and local actions to protect Lake Pepin, but there is a slight preference for upstream work.





# SEDIMENTATION & LOW WATER

In a year defined by lows, Lake Pepin's water level is no exception. This year's drop in water level has been dramatic because it comes on the heels of last year's record high water, which together, illuminates the sedimentation problem in Lake Pepin. High water pushes sediment to the lake and low water uncovers it, along with a slew of transportation issues—both in the navigation channel and the rest of Lake Pepin.

## NAVIGATION CHANNEL

Throughout the summer, LPLA received an unprecedented number of local photos and reports of what looked like barge groundings at the head of the lake. As we investigated the concerns, we learned that barges weren't the only ones having trouble—recreational boaters were also getting stuck around the channel edges. Here is what we've been able to uncover:

### NARROW CHANNEL NEEDS DREDGING

At its narrowest point, the channel is 100 feet less than the authorized width—and even experienced work vessels are reporting challenges navigating the area. The amount of material that needs to be dredged is nearly double the total amount ever previously dredged in this location.

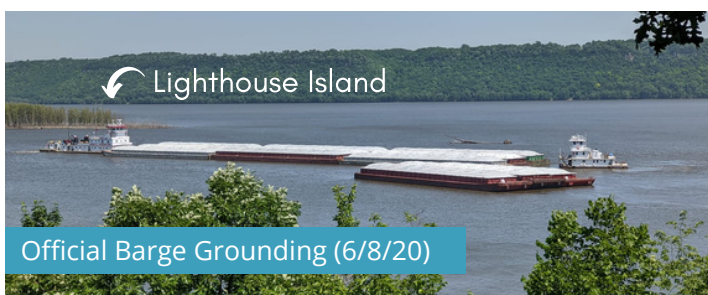
According to the Army Corps of Engineers (ACOE), dredging isn't prioritized because there is no location to store the fine sediment that predominates the area. This muddy material requires a local placement site to dry out for 1-2 years before it can be transported elsewhere.

### GROUNDING OR STAGING?

Captains are required to inform the U.S. Coast Guard (USCG) anytime a tow or barge even touches ground. ACOE is also typically informed because they are responsible for channel maintenance. Despite the large number of local reports, however, ACOE only has one official barge grounding documented in Lake Pepin this year. Thus far, LPLA has been unable to get information from USCG.

It is possible that barges that look grounded are actually "staging". With a narrow channel, barges cannot pass each other without one pulling over and idling until the path is clear. When the Illinois Waterway closed, Lake Pepin barge traffic and the need for staging increased. And yet, questions remain.

Residents have noted that the incidents are not happening in typical staging areas and that the barges don't wait long before struggling to free themselves. The ACOE responded that the influx of unfamiliar barge captains could be responsible for atypical staging choices. As of today, we don't know whether barge groundings are not being reported to ACOE or if barges are just staging in unusual locations. LPLA continues to investigate.



**"Deterioration of the lake is now the most visibly obvious of all time. You can see it in the mudbar created by settling sediment along the main navigation channel as it runs between Presbyterian Point and Friedrich Point at the head of the lake. It's a space of about a mile, and the bar spans about two-thirds of the area. Towboat pilots have learned that they dare not stray lest they find themselves trapped in the muck. We've lived on this stretch some 40 years and now are daily observers of how the lake can be more than a mile wide but in places only inches deep."**

**- Arlin Albrecht, LPLA Board Member**





## LOCALS IDENTIFY SEDIMENT HAZARD

Community members familiar with this stretch of the river were convinced there was more to the story and independently discovered an area with densely packed sand and rocks at the channel edge.

Missi Blue, LPLA's newest Board Member, has a family cabin that directly overlooks the area, and is accustomed to boat groundings outside the navigation channel, but has never seen so many problems in the channel itself. When she and her brother, Sam Blue, walked to the channel and stood in line with two green buoys, they discovered it was only 2 ½ feet deep and there was sharp crest, suggesting some type of sediment disturbance.

John Wooden, who owns River Valley Companies and the local U.S. Tow Boat, observed at least 12 unofficial barge groundings and assisted many recreational boaters grounded at the same location. He mapped the sediment hazard in Google Maps, which LPLA overlaid with the ACOE channel report to show how it aligns with a small shelf between two green buoys (see photo below).

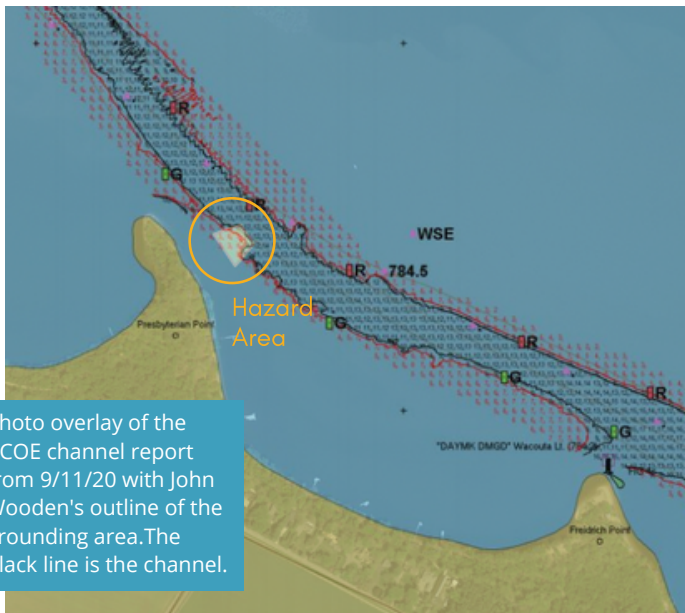


Photo overlay of the ACOE channel report from 9/11/20 with John Wooden's outline of the grounding area. The black line is the channel.

## NEW BUOY IS TEMPORARY SOLUTION

In response to LPLA, ACOE agreed that there was unmarked change in the channel line that was potentially hazardous and requested the USCG to place an additional buoy to better mark the area. The next USCG buoy tender comes through the district in November.

While buoys create a safer river, they are not a sustainable solution because they often get dislodged and lead boaters astray. A more comprehensive solution is needed—dredging a deeper and wider channel, reducing sediment input, and mitigating high flows. Restoration projects, like the one LPLA championed near Bay City, can provide a beneficial use for dredge material in need of placement sites.



The Blue Family identifies a rocky shelf along the channel edge

**“River Valley Marina runs Tow Boat U.S. in Pool 2, 3, and 4 [of the Mississippi River] and in 2020 our tow boat calls were up 300% over historical, with the majority of issues at the head of the lake.”**

**- John Wooden, President of River Valley Companies**

## OUTSIDE THE CHANNEL

Sediment continues to accumulate and cause boat groundings, eliminate habitat, and reduce community access in the rest of the lake. Unlike the navigation channel, no government agency is directly responsible for managing the broader loss of depth in the lake and river.

LPLA has utilized federal restoration programs to fund and authorize dredging near Bay City, WI for habitat improvements.

Lighthouse Island, which is a common boat grounding area, doesn't qualify for these programs because it isn't an ecological priority. Instead, it serves as a growing call to action to mitigate upstream erosion and initiate local projects that minimize or reverse impacts.



Lighthouse Island Boat Grounding



Bay City Flats Boat Grounding



Walking a kayak through Bay City Flats



# TRIBUTARY UPDATES

## TRIMBELLE RIVER

Trout Stream  
Wisconsin Healthy  
Waters List

## ISABELLE CREEK

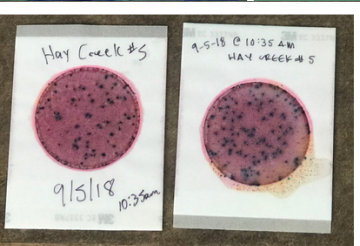
Trout Stream  
Wisconsin Healthy  
Waters List

## RUSH RIVER

Trout Stream  
Wisconsin Healthy  
Waters List

## CLOSER LOOK: REGIONAL E.COLI MYSTERY

Minnesota tributaries have elevated levels of E.coli, which has historically been used to indicate fecal contamination. Most E.coli strains are not harmful to humans, but human and animal feces can contain other more dangerous bacteria. E.coli has been used as an indicator of fecal contamination because it is the easiest and most affordable bacteria to measure, but new research suggests that natural E.coli populations can exist in waterways and may not have the same health concerns. As such, Minnesota is revisiting E.coli as a water quality measurement, which could lead to local tributaries being removed from the impaired waters list. Learn more by reading our blogs on Miller and Gilbert Creek.



More than one black spot indicates E.coli levels that exceed current water quality standards in MN. LPLA collected these samples from Hay Creek in 2018.

## CANNON RIVER

PCBs in Fish Tissue  
Excess Nutrients  
Excess E.Coli  
Excess Sediment  
Low Bioassessment

## LAKE PEPIN

Excess Nutrients  
Excess Sediment

## HAY CREEK

Trout Stream  
Excess E.coli

## BULLARD CREEK

Trout Stream  
Excess E.coli

## WELLS CREEK

Trout Stream  
Excess E.coli  
Excess Sediment\*  
\*Expected New Impairment

## PINE CREEK

Trout Stream  
Wisconsin Healthy  
Waters List

## BOGUS CREEK

Trout Stream  
Excess Phosphorus

## MAP LEGEND

- Tributary/Stream
- Restoration Project
- LPLA Review Online
- LPLA Review Upcoming

## CHIPPEWA RIVER

PCBs in Fish Tissue

## CLOSER LOOK: LOCAL SEDIMENT INPUT

Lake Pepin's sediment plan calls for a 20% reduction from local tributaries, but only two tributaries (Cannon River & Wells Creek) are officially impaired for high sediment concentrations (TSS). Regardless of impairment status, all tributaries contribute sediment at their deltas. Most sediment is pushed downstream during just a few storm events each year. Learn more about local sediment input and deltas in our blogs on Wells and Bullard Creek.



Photo: Dan Traup

Wells Creek



Bullard Creek & Wacouta Bay

## GILBERT CREEK

Trout Stream  
Excess E.coli  
Exceptional Use  
Designation\*  
Low Bioassessment\*\*  
\*Pending Approval  
\*\*Expected Delisting

## MILLER CREEK

Trout Stream  
Excess E.coli

That you to the Goodhue and Wabasha Soil and Water Conservation Districts, Minnesota Department of Natural Resources, Minnesota Pollution Control Agency, Trout Unlimited, and community members who made these blog updates possible!





# UPSTREAM SEDIMENT

If you walk the iconic Lighthouse Island at the head of Lake Pepin, you'll discover that some areas are filled with firm sandy material that easily holds your weight while other areas are filled with soft muddy material that quickly engulfs your leg. Both types of sediment contribute to the rapid loss of depth at the head of Lake Pepin, but only one is closely managed and monitored for its impact on water quality.

## WHAT IMPACTS ARE GOVERNMENT AGENCIES REQUIRED TO MANAGE?

### WATER QUALITY IMPAIRMENTS ✓

The **concentration** of total suspended solids (TSS) in the Mississippi River, from the Minnesota River confluence and into Lake Pepin, exceeds the water quality standard of 32 mg/L. The Clean Water Act requires states to allocate pollution reductions for impaired waters.

Lake Pepin serves as a catch basin for fine and coarse sediment. Without it, downstream water quality would quickly deteriorate.



### LOSS OF DEPTH ✗

Current sediment **loads** at the head of Lake Pepin are 10x higher than normal. The Army Corps of Engineers is responsible for the navigation channel, but the rest of the lake is not directly managed for sediment build-up or loss of depth.



The reduction requirements for fine sediment are expected to reduce the filling in of Lake Pepin by half, which is still 5x above natural rates.

## WHAT TYPE OF SEDIMENT IS MEASURED & ASSESSED?

### FINE SEDIMENT (MUD) ✓

Fine sediment is easily suspended, takes a long time to settle out from flowing water, and is the main component of the TSS measurement. Suspended sediment reduces light for aquatic plants, interferes with gill functioning, reduces fish growth rates, degrades habitat, lowers aesthetic quality of waters, and fills in lakes.



### COARSE SEDIMENT (SAND) ✗

Coarse sediment is pushed along the bottom of the streambed. Since it isn't easily suspended in the water and settles out quickly, coarse sediment isn't captured in water monitoring efforts, but certainly adds to the rapid loss of depth at the head of Lake Pepin.



## WHAT IS THE TIMELINE FOR FINE SEDIMENT REDUCTION?

### MINNESOTA RIVER MAINSTEM

The Minnesota River contributes 75-90% of the fine sediment flowing into Lake Pepin. To ensure Lake Pepin meets the water quality standard for TSS, the Minnesota River needs to reduce its contribution by 50%, and 60% during high flows. The timeline:



25% reduction by 2020  
50% reduction by 2030

DON'T ALIGN

65% reduction over 65 years

### MINNESOTA RIVER TRIBUTARIES

The Le Sueur River contributes 24-30% of the fine sediment flowing into the Minnesota River mainstem. To ensure the Minnesota River meets its sediment reduction goals, the Le Sueur River needs to reduce its sediment contribution by 65%. The timeline:



Other sediment reductions required: Upper Mississippi River: 20%, Cannon River & Local Tributaries: 20%, Lake Pepin Resuspension: 50%

WHAT PROGRESS HAVE WE MADE TOWARD WATER QUALITY GOALS?  
**NO RELIABLE TREND ANALYSIS CURRENTLY AVAILABLE.**

# LAKE PEPIN RESTORATION

We had the final public review for the habitat improvement project this year, which means construction is just around the corner. LPLA has championed this project, which fulfills some of our local responsibility to address the water quality impairment for total suspended solids (TSS) in this stretch of the river. We've worked collaboratively with project partners to ensure the project integrates ecological and recreational benefits. Learn more on our website!



## IMPROVING WATER CLARITY

The construction of land features will reduce wind and wave action that stirs up sediment. These features are explicitly recommended in Lake Pepin's sediment reduction plan, which calls for a 50% reduction in local sediment resuspension to achieve water quality goals.



## PROVIDING A BENEFICIAL USE FOR EXCESS MUD & SAND

Channel maintenance is often constrained by a lack of placement sites for dredged material. This project will use sand dredged from lower Lake Pepin to create the base of land features. Local dredge material, which is more fine, will be used as top soil to cap the features.



## INTEGRATING ECOLOGICAL AND RECREATIONAL GOALS

Water quality and habitat improvements will support healthy fish and wildlife populations. Dredging will also improve accessibility for small fishing and non-motorized boats. The partial closure at Catherine's Cut (★) will deflect coarse sediment from the project area while keeping it open to recreational users.



## RESTORING BACKWATER DEPTHS

Dredging backwater pools will create overwintering habitat for fish like bluegills, crappies, and largemouth bass. It will also make it more difficult for wind and waves to stir up sediment—further improving water clarity.



## EXTENDING THE LONGEVITY AT THE HEAD OF THE LAKE

Without any action, the upper 1/3 of Lake Pepin is expected to be unusable by the end of the century. This project will reverse the clock for an area most impacted by sediment and ensure Bay City, WI maintains water access to the rest of the lake.



## MAIN FEATURES:

- 4 PENINSULAS
- 2 BACKWATER POOLS
- 3 AREAS OF SHORELINE PROTECTION
- 1 MUDFLAT
- 1 WATER MANAGEMENT DIKE
- 1 MARSH
- ACCESS CHANNELS
- PARTIAL CLOSURE



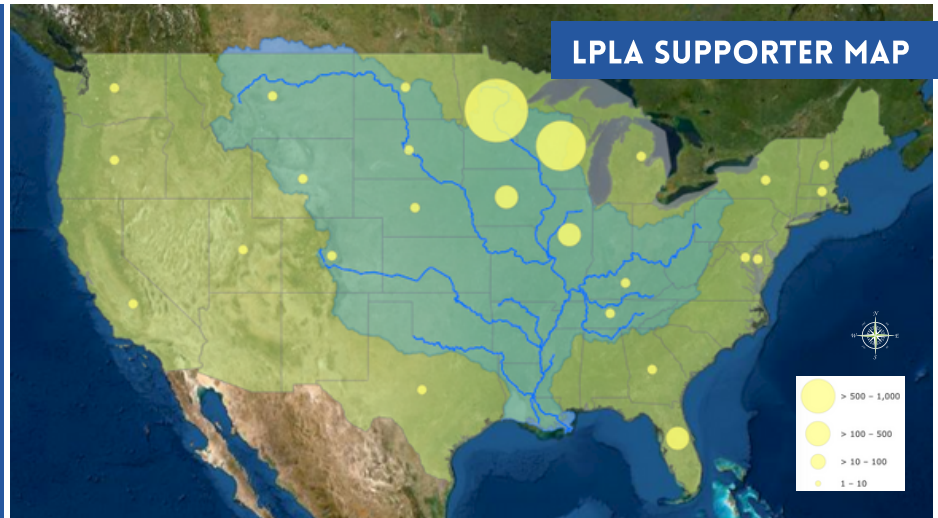


# MOVING FORWARD

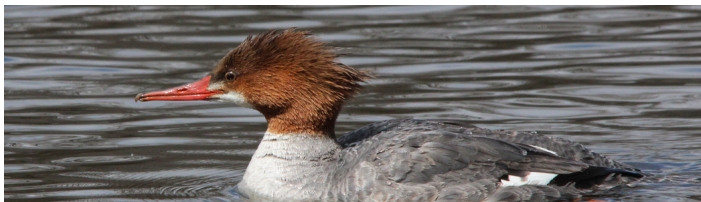
LPLA is moving forward with a focus on local partnerships and broader collaboration along the Mississippi River. With the hopes that the global pandemic will subside, we have a full event schedule planned to raise local awareness and celebrate our collective efforts next year. We hope you will join us!

"Lake Pepin is a national treasure and bellwether for the entire Mississippi River Basin. That's why LPLA has received support from across the nation. Moving forward, we're working to fill in the map and ensure Lake Pepin's protection is a local, regional, and national priority."

-Rylee Hince, LPLA Executive Director



## EVENTS NEXT YEAR



**RESTORATION GROUNDBREAKING (SPRING)**



Featuring the Pistol  
Whippin' Party  
Penguins at Liberty  
Tree Farm!

**LEGACY CONCERT (JULY 24TH)**



**MUD PICNIC (AUGUST)**



**PEARL OF LAKE (SEPTEMBER)**

**LPLA MEMBERSHIPS  
AVAILABLE AT BROKEN  
PADDLE GUIDING  
COMPANY**



**LPLA JOINS THE  
MISSISSIPPI RIVER  
NETWORK FOR  
BROADER IMPACT**



**LPLA IS A PROUD  
PARTNER OF MEF  
WORKPLACE GIVING  
PROGRAM**



# GIVING A BRIGHTER FUTURE TO LAKE PEPIN

Photo: Broken Paddle Guiding Company

[WWW.LAKEPEPINLEGACYALLIANCE.ORG](http://WWW.LAKEPEPINLEGACYALLIANCE.ORG)

## DIRECT GIFT

Give by cash, check, or credit by mail or online. All gifts \$25+ are considered a membership and include a free shirt or hat through the end of 2020!

## AUTOMATIC MATCH

All gifts are doubled by the Albrecht and Poss Family Foundation through 2020. New members can triple their gift thanks to another matching grant from the Katherine B. Andersen Fund.

## WORKPLACE MATCH

Check to see if your workplace matches employee donations. LPLA is also a proud partner of the Minnesota Environmental Fund, which supports workplace giving to environmental non-profits!



## VOLUNTEER, ENGAGE, & TELL A FRIEND!

Do you love Lake Pepin? Spend a lot of time on the water? Enjoy taking pictures? Want to learn more about the issues? If you answered yes to any of these questions, we encourage you to engage with us online, tell your friends, and consider joining our team of volunteers next year!



Email [info@lakepepinlegacyalliance.org](mailto:info@lakepepinlegacyalliance.org) to discuss:

 LEGACY GIVING

 CHARITABLE IRA ROLLOVERS

 STOCK DONATIONS

Mail this form with contribution to: LPLA, P.O. Box 392, Red Wing, MN 55066

Full Name(s)

Mailing Address (Street, City, State, Zip)

Email

Phone

FREE 2020 MEMBER T-SHIRT OR HAT WITH ANY \$25+ GIFT:

☐ S ☐ M ☐ L ☐ XL ☐ HAT

Contribution: \$

☐ Cash ☐ Check ☐ Credit Card

Credit Card Number

Exp. Date

CVC #

Signature





# THANK YOU!



Photo Credit: WIMN Sail, Beth Anderson

Thank you for supporting the Lake Pepin Legacy Alliance. As a supporter, you understand that Lake Pepin is a critical ecological, social, and economic resource for local communities and the broader Mississippi River Basin.

We believe in standing together during difficult times and know that businesses and families have been impacted by the global pandemic. Here is snapshot of our supporting community from 2019-2020. Please support our supporters, your community, and each other as we work towards a healthier, brighter future for all.

## TITANIUM

McKnight Foundation  
Katherine B. Andersen Fund  
Albrecht & Poss Family Foundation  
Annesco Project Fund  
Mortenson Family Foundation

## PLATINUM

Red Wing Shoe Co. Foundation  
Wacouta Firefly Fund  
Citizens for a Clean Mississippi, Inc.

## GOLD

Frontenac Sportsman Club  
Lake City Sportsman's Club  
Red Wing Area Fund  
Lake City Chamber of Commerce  
(Tour de Pepin)  
Hubbard Broadcasting Foundation  
Cargill CARES

## SILVER

Lake Pepin Partners in Preservation  
St. James Hotel  
Red Wing Grain  
Minnesota Environmental Fund

## BRONZE

Red Wing Wildlife League  
Cultural Cloth  
Flueger Crane, LLC  
Ole's Bar & Grill  
Abode Gallery  
Community Crust Pizza  
Indigo Swan Jewelry & Fine Arts  
Red Wing Masonic Lodge  
Sargent's Nursery  
Swan Jewelers LTD  
Treats & Treasures  
United Lutheran Church  
West End Sports Center  
Xcel Energy

## IN-KIND

Broken Paddle Guiding Co.  
Big River Magazine  
Pearl of the Lake Paddleboat  
Liberty Tree Farm  
Chap Achen Photography  
Lake City Sportsman's Club  
Spave  
Stockholm Pie & General Store  
National Eagle Center  
Oliver's Wine Bar  
Indigo Swan Jewelry & Fine Arts  
Treats & Treasures  
Six String Saloon  
Turning Waters BB&B

## TERRY WOELTGE MEMORIAL FUND

**852 INDIVIDUAL  
MEMBERS!**