

STATE OF THE RIVER REPORT 2016

Water quality and river health
in the Metro Mississippi River





Friends of the Mississippi River
101 East Fifth Street, Suite 2000
Saint Paul, MN 55101

(651) 222-2193

www.fmr.org



Mississippi National River and Recreation Area
111 Kellogg Boulevard East, Suite 105
Saint Paul, MN 55101

(651) 290-4160

www.nps.gov/miss

www.stateoftheriver.com

The *State of the River Report* illustrates that, while in many ways the Mississippi River is cleaner and healthier than a generation ago, there are a number of river impairments and disturbing trends that must be reversed to restore the river.

In this Policy Guide, Friends of the Mississippi River highlights the top 10 policy actions that decision-makers can take to help protect and restore the metro Mississippi River.

While this list is far from comprehensive, the actions below represent excellent opportunities to greatly improve the overall health of the river by addressing many of the issues raised in the *State of the River Report*.

These recommendations will enhance public health and safety, improve river recreation, protect our drinking water, and enhance the economic vitality of communities throughout the Mississippi River watershed.



1 Promote perennial cropping systems

Improve water quality and farm profits by incentivizing conversion from annual crops to market-based perennial crops.

- a. Implement the **Working Lands Watershed Restoration Program** to incentivize establishment of perennial crops and cover crops for use in biofuel production, green chemistry, biomass thermal energy and grazing programs;
- b. Fully fund research and development of innovative, economically viable conservation crops through the **University of Minnesota's Forever Green** initiative; and
- c. Adopt a **state biofuels standard** that requires one-third of the ethanol consumed in Minnesota automobile fuels be made from perennial crops and cover crops by 2025.



2 Improve chloride management

The state should adopt comprehensive chloride reduction legislation. This legislation should provide ongoing support for the state's chloride management activities and include:

- a. **Full funding** to sustain and promote road salt application training for both public and private applicators;
- b. **Elimination or reduction of liability** for private applicators who become certified in responsible salt application; and
- c. **Research funding** to develop new technology and alternatives to chloride-containing deicing chemicals.

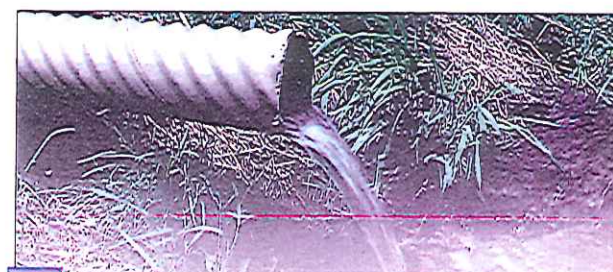
3 Continue bald eagle research

Provide long term funding for eagle health and population research. In addition, the state, in concert with local communities, should develop and implement river reforestation plans to ensure healthy regeneration of cottonwood and other prime nesting and perching trees.



4 Enhance river fish research

The state should implement consistent, comprehensive surveys of all fish in the metro Mississippi River. Natural resource staff must have the information they need to effectively manage aquatic life in the river. Unfortunately, the state lacks comprehensive data of fish populations, diversity and species mix. The state and other local partners should fund and implement regular, comprehensive evaluations of fish and aquatic life in the river.



5 Implement comprehensive drain tile reform

In many cases agricultural drainage systems (drain tile) can be installed in crop fields without permits, reporting or any conservation requirements. The state should adopt legislation that includes the following:

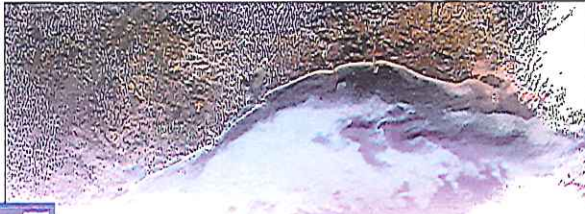
- a. **Required permits** for all new drain tile installations, so that state and local water managers can better understand the extent of these systems and their potential impacts on water quality and river hydrology;
- b. **Required or incentivized conservation** systems installed on all new drain tiles, to better mitigate the impacts of artificial drainage; and
- c. **Comprehensive mapping** of existing drainage systems to better manage and mitigate their impacts on surface waters.

6 Control invasive Asian carp

Continue to fund research into how modifying flow through dam gates and installing carp-deterrent technologies such as bubble, electric and acoustic barriers in the locks can be most effective.

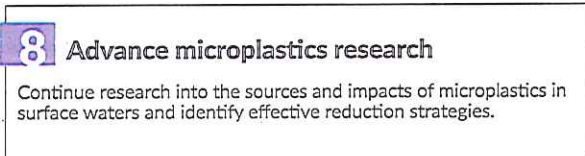
- a. The Army Corps of Engineers should **modify lock operations** to reduce recreational traffic wherever feasible, and manage lock operations to incorporate our growing understanding of Asian carp behavior, migration patterns and biology; and
- b. **Enhance long-term funding** for research into the behavior and biology of Asian carp.





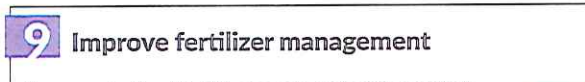
7 Establish nitrate standards

Nitrate pollution can compromise aquatic life and is especially problematic downstream in the Gulf of Mexico. The state cannot effectively control this pollutant without science-based water quality standards. The Minnesota Pollution Control Agency should adopt long-overdue nitrate standards to protect aquatic life in Minnesota's surface waters.



8 Advance microplastics research

Continue research into the sources and impacts of microplastics in surface waters and identify effective reduction strategies.



9 Improve fertilizer management

Excess agricultural fertilizers can impair surface waters, groundwater and drinking water supplies. Minnesota must:

- a. Amend the state's **Nitrogen Fertilizer Management Plan** to provide meaningful protections for our groundwater and drinking water throughout the state;
- b. Amend the state's proposed **Nitrogen Fertilizer Rule** to compel farm operations to manage fertilizer use in a way that does not contaminate groundwater and drinking water sources; and
- c. Establish **conservation-based fertilizer recommendations** that identify the maximum level of nitrate fertilizer that can safely be applied given local soils, weather, drainage and cropping systems.

10 Develop a statewide pharmaceutical management plan

Unused and expired pharmaceuticals including prescription medications are frequently disposed of down the drain, exposing surface waters and groundwater to potential contamination. Old and unused medicines can also pose a risk for accidental poisoning, theft and drug abuse. Currently, pharmaceutical disposal programs vary greatly at the local level, and no statewide pharmaceutical management plan is in place.

The state of Minnesota should develop a statewide pharmaceutical management plan that includes a network of secure disposal sites and a comprehensive outreach and education program within the next five years.



Friends of the Mississippi River
101 East Fifth Street, Suite 2000
Saint Paul, MN 55101

(651) 222-2193

www.fmr.org

www.stateoftheriver.com

STATE OF THE RIVER REPORT

POLICY GUIDE



The *State of the River Report* illustrates that, in many ways, the Mississippi River is cleaner and healthier than a generation ago. However, there is still much to be done in order to restore the river and reverse some disturbing trends.

Clean water is everyone's responsibility, and we can all do our part to help protect this vital natural resource.

This guide highlights the "top 10" stewardship actions that individuals can take with your friends and neighbors to help protect and restore the Mississippi River and its watershed for future generations.

IN YOUR HOME OR APARTMENT

1 Use salt wisely

Excess chloride can be toxic to aquatic life in lakes, rivers and streams. Winter road deicers are the primary source of chloride to Minnesota's waters, and it only takes 1 teaspoon of salt to permanently pollute 5 gallons of water.

Residents can do their part by shoveling early and often, using deicing products sparingly and sweeping up extra material for future use. Traditional rock salt is not effective in temperatures below 15°F. Some alternative deicers work in temperatures down to -20°F. Sand can be used for traction when salts won't melt ice. More information on smart winter maintenance is available at <https://www.pca.state.mn.us/water/follow-these-simple-tips-protect-our-water>.

For more information on chloride pollution in the metro area, see page 38 of the *State of the River Report*.



2 Don't flush your pills

Pharmaceuticals in surface waters can have impacts on fish and other aquatic wildlife.

Expired or unwanted medications should never be flushed or disposed of down the drain. Wastewater treatment systems are not designed to remove these pollutants. If it goes down the drain, it goes in your water.

If your local drug store does not participate in a drug take-back program, contact your county solid waste office, the Minnesota Pollution Control Agency, or visit DisposeMyMeds.org to find nearby drug take back programs.

If you dispose of medications yourself, mix them with fine materials (coffee grounds, cat litter) and place into a sturdy, leak-proof container before putting it in the garbage.

For more information on pharmaceuticals and the Mississippi River, see page 47 of the *State of the River Report*.

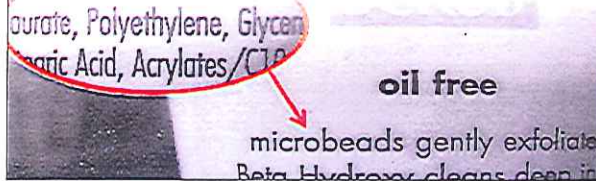


3 Avoid microplastics in your purchasing

Microplastics are tiny pieces of plastic that end up in the environment through the breakdown of litter, car tire wear, or after plastics in clothing and consumer products are washed down the drain. Microplastics present potential risks to wildlife and human health, and can be found in the metro river's water, sediment and aquatic life.

Download the smartphone app from www.beatthemicrobead.org to scan product labels and determine whether they contain microbeads. Consumers can also choose clothing made from natural fibers, avoid single-use plastics such as plastic bags and take-out containers, and remain careful not to litter or flush plastic materials down the toilet.

For more information on microplastics and the Mississippi River, see page 42 of the *State of the River Report*.



IN YOUR YARD AND GARDEN

4 Rake up, sweep up, pick up

Leaves, grass, lawn chemicals, trash and winter salts can wash into storm sewers and pollute local rivers, lakes and streams throughout Minnesota.

Remember: if it's in our streets, it's in our streams. Remove these materials from your street, sidewalk and driveway before they wash into the river.



5 Keep the rain drop where it falls

Excess runoff contributes to higher flows and can carry pollutants into local rivers, lakes and streams. Make sure your downspouts are directed to gardens and other areas that can use the water - not onto your driveway, street or sidewalk. Capture and store runoff with rain gardens, rain barrels and perennial vegetation before it reaches the street.

For more information about how rain gardens and other landscaping choices can help improve water quality while providing a beautiful, year-round landscaping amenity, see www.bluethumb.org.

To learn more about how flow impacts the Mississippi River, see page 12 of the *State of the River Report*.



6 Maintain a river-friendly yard

Healthy yards can help reduce runoff pollution and improve habitat. To maintain a water-friendly lawn, set your lawnmower on a high setting (3"), leave grass clippings on the lawn and avoid excess watering.

If you use lawn chemicals and fertilizers, use them wisely (never over-apply these products) and always keep them on the lawn - not sidewalks, streets and driveways.

Homeowners or property managers who hire lawn care providers should look for those who have completed the Minnesota Pollution Control Agency's Summer Turf Care Best Practices certification.

If the only time you visit a corner of your lawn is to mow it, consider replacing it with flowering plants or native vegetation. These absorb water more effectively than turf and provide beneficial habitat.

Residents concerned about pollinator health can plant pollinator-friendly landscapes. Additional information is available at www.tinyurl.com/zcfpn95.



STATE OF THE RIVER REPORT

STEWARDSHIP GUIDE



IN YOUR COMMUNITY

7 Adopt your storm drain

Storm sewers discharge directly to rivers, lakes and streams untreated. If it goes down the storm drain, it goes in your water.

Many communities offer storm drain stenciling and adoption programs. Residents can participate in these where available, or take responsibility for keeping nearby storm drains free of leaves and trash.



8 Pick up after your pet

Pet waste can wash into storm sewers and contribute to bacteria and phosphorus pollution in waters, including the Mississippi River. Clean pet waste from your yard and always pick up after your pet on walks.

For more information on bacteria and the Mississippi River, see page 16 and 18 of the *State of the River Report*.



9 Lead-free shot and tackle

Lead is a toxic element that has negative impacts on wildlife that consume it. Lead is in most fishing jigs and sinkers and ammunition, and poisons wildlife such as loons and eagles. Eating just one lead sinker can poison a loon.

Hunters and anglers can help reduce lead in the environment by using non-toxic ammunition and fishing tackle, and asking bait and tackle stores to stock unleaded sinkers. If using lead ammunition, recover and remove all shot game from the field. Dispose of existing lead shot and tackle at your local hazardous waste collection site. For more information, see www.tinyurl.com/hywevzq.

For more information about lead in eagles in the metro river corridor, see page 28 of the *State of the River Report*.



10 Lend a hand

You care about the Mississippi River – get involved in making it healthier! Become an active member of organizations like Friends of the Mississippi River or Mississippi Park Connection. These groups are doing important river protection work and need your help! Join as a member and participate in volunteer activities and action alerts.

You can also share your passion for the river by working with your neighbors to keep your streets and storm drains clean.

Find out more at www.fmr.org and www.parkconnection.org.

Want to do more?

Friends of the Mississippi River and the National Park Service offer dozens of educational and hands-on volunteer opportunities throughout the year to help the river. You can find out more about these programs by visiting us online.



Friends of the Mississippi River
101 East Fifth Street, Suite 2000
Saint Paul, MN 55101

(651) 222-2193

www.fmr.org



Mississippi National River and Recreation Area
111 Kellogg Boulevard East, Suite 105
Saint Paul, MN 55101

(651) 290-4160

www.nps.gov/miss

www.stateoftheriver.com