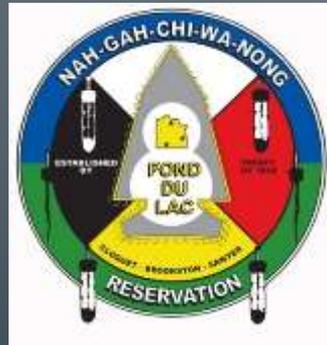


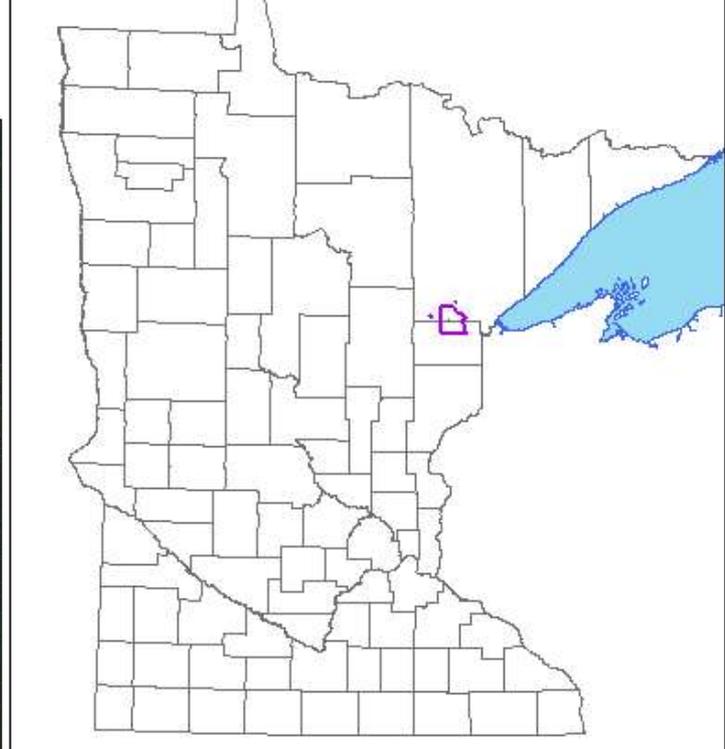
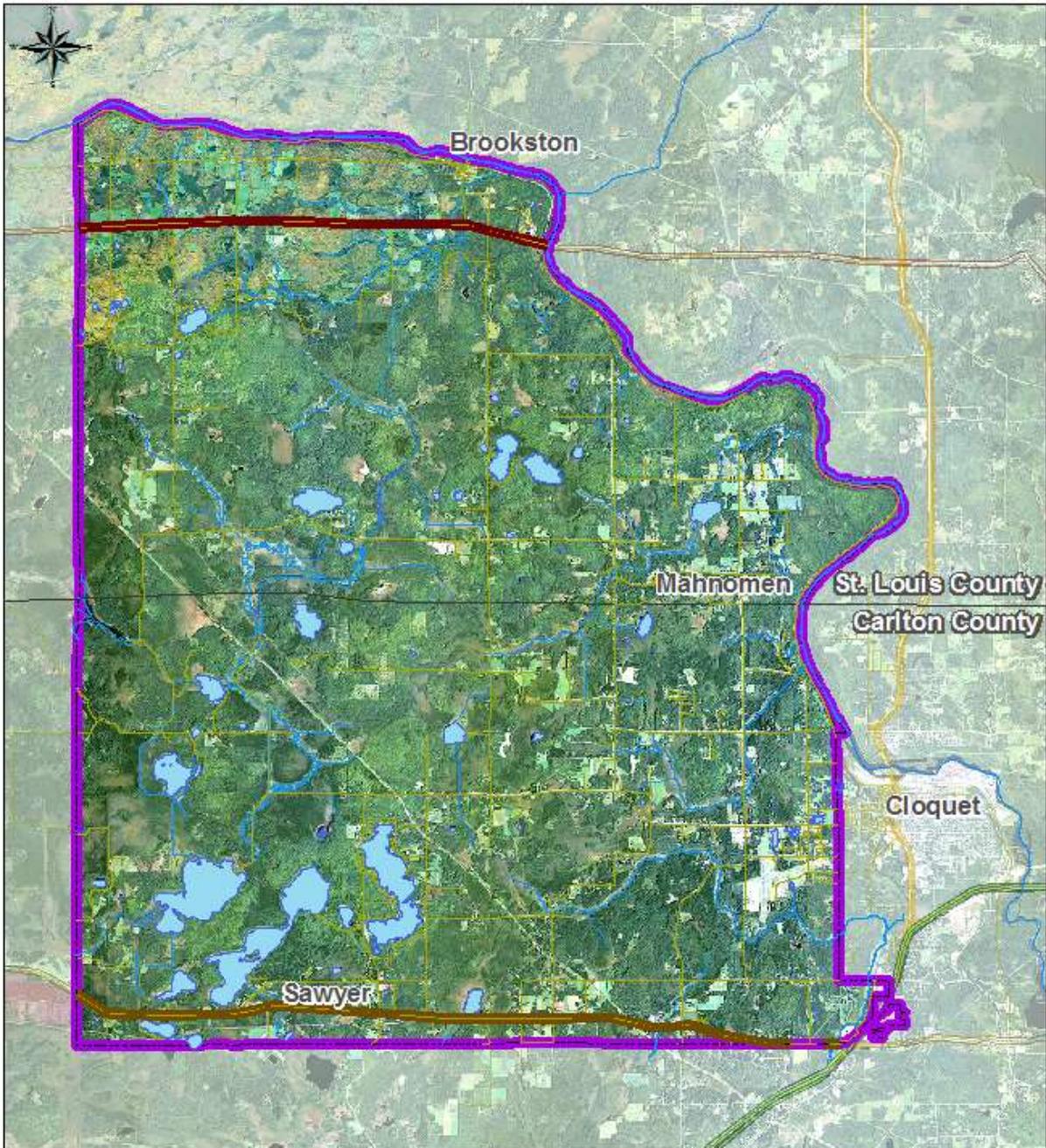
Lake Superior & St Louis River: Water Issues, Concerns and Progress

Nancy Schuldt, Water Projects Coordinator
Fond du Lac Band of Lake Superior
Chippewa

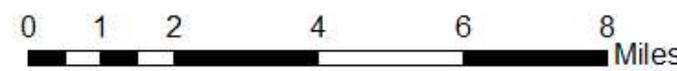
Presentation to Legislative Committee on
Water Resources, July 9, 2021



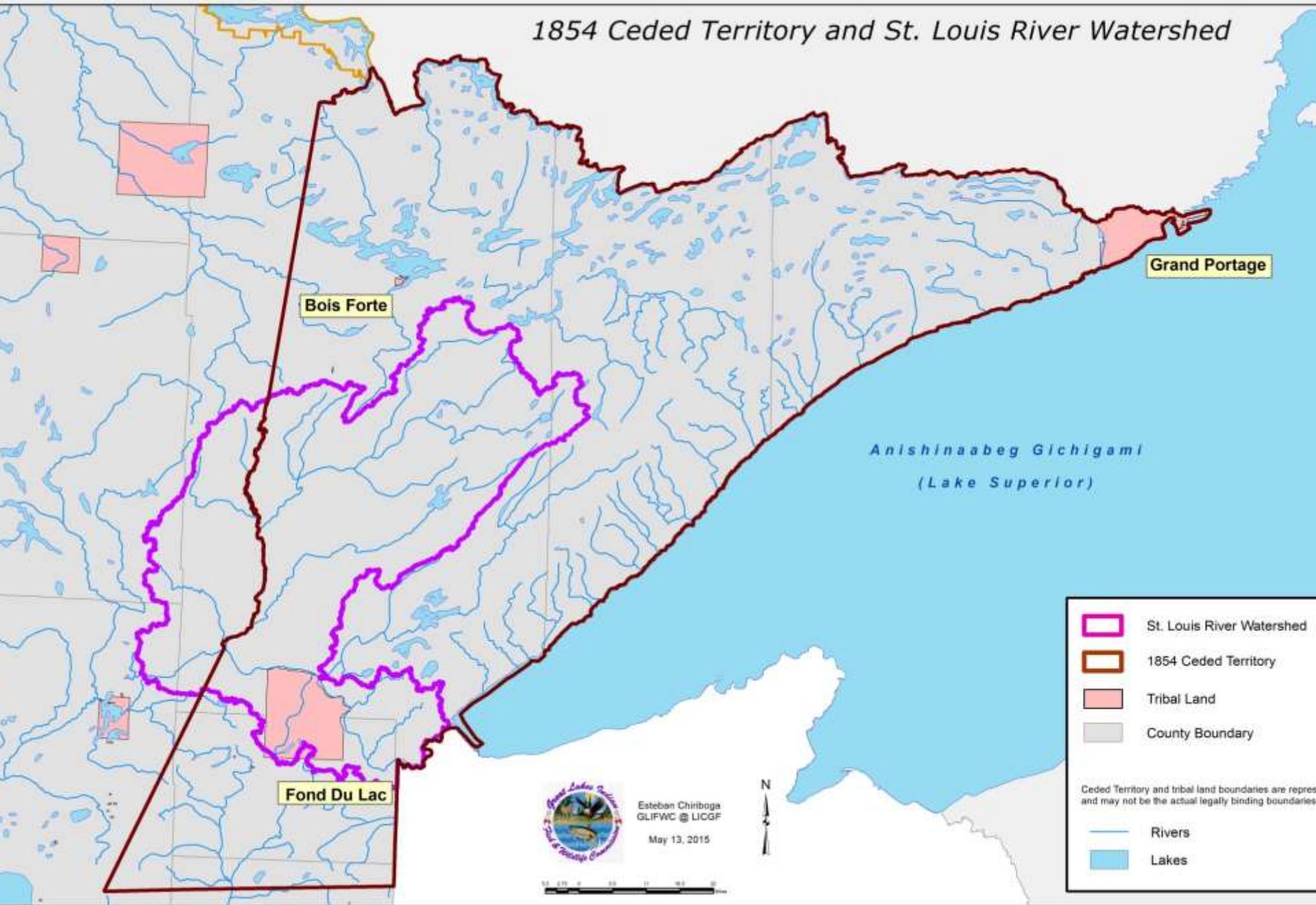
Fond du Lac Reservation Location



- Major_rivers
- Fond du Lac Boundary
- US Hwy 2
- State Hwy 210
- State Hwy 33
- Interstate 35
- Lakes
- Rivers and Streams



1854 Ceded Territory and St. Louis River Watershed



-  St. Louis River Watershed
-  1854 Ceded Territory
-  Tribal Land
-  County Boundary

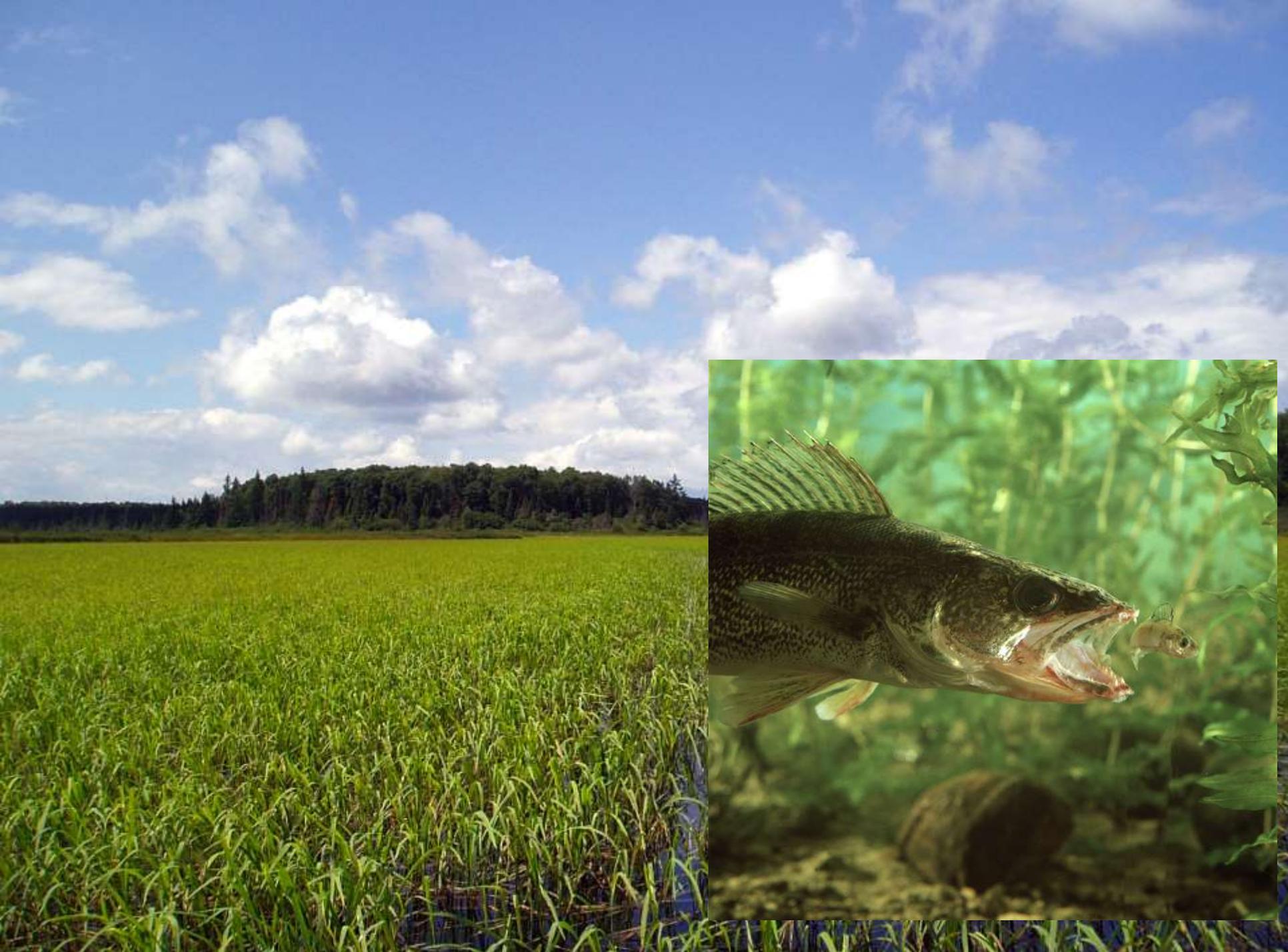
Ceded Territory and tribal land boundaries are represented and may not be the actual legally binding boundaries

-  Rivers
-  Lakes



Esteban Chiriboga
GLIFWC @ LICGF
May 13, 2015





Water Quality Standards

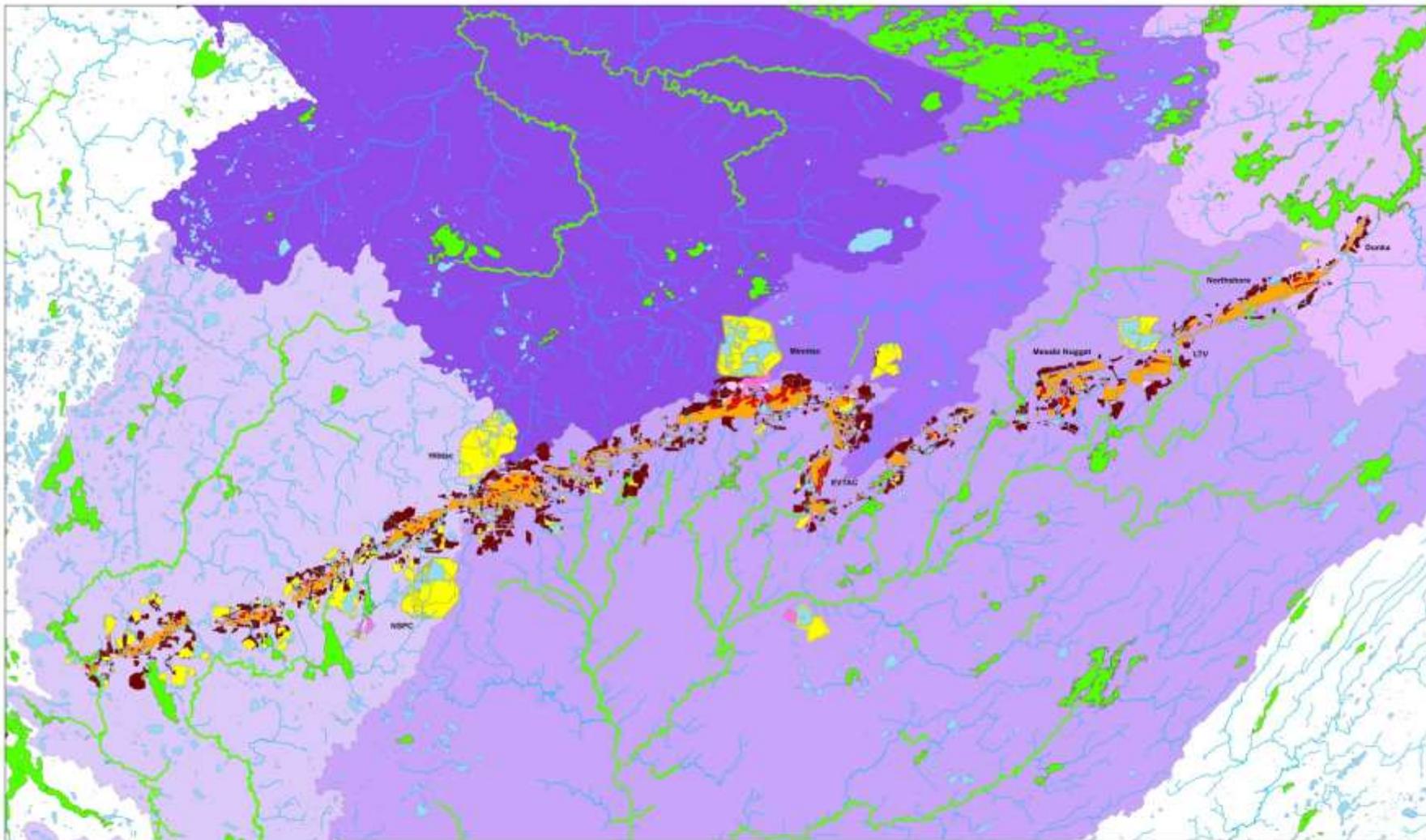
--Clean Water Act §303(c)

- RBC adopted in 1998; EPA approved in 2001; latest updates approved in 2020
- Tribal-specific *designated uses*, including cultural and aesthetic
- Protect ecosystems, human health in the context of a subsistence lifestyle (*criteria – numeric and narrative*)
- “Outstanding Reservation Resource Waters”, “Exceptional Resource Waters” (*antidegradation*)
- Exercise sovereignty (jurisdiction over all waters of the Reservation)









Iron Range Mine Features, Major Minnesota Watersheds and 303d Listed Waters

Mine Features

- Mine Pits
- Tailings Basins
- Stockpiles
- In-Pit Stockpiles
- Other Mine Features

Major Watershed

- Little Fork River
- Mississippi River - Grand Rapids
- Rainy River - Headwaters
- St. Louis River
- Vermillion River

- 2018 Impaired Lakes (Draft)
- 2018 Impaired Rivers (Draft)
- Lakes
- Rivers



Water Quality
Watershed Council
April 2017

(with transportation and political boundaries)



- State Highway
- US Highway
- Interstate
- State Line
- County Bounds

- Project Area Boundary
- St. Louis River
- Plant Community and Aquatic Habitat Boundary
- Tributary Streams
- Lakes



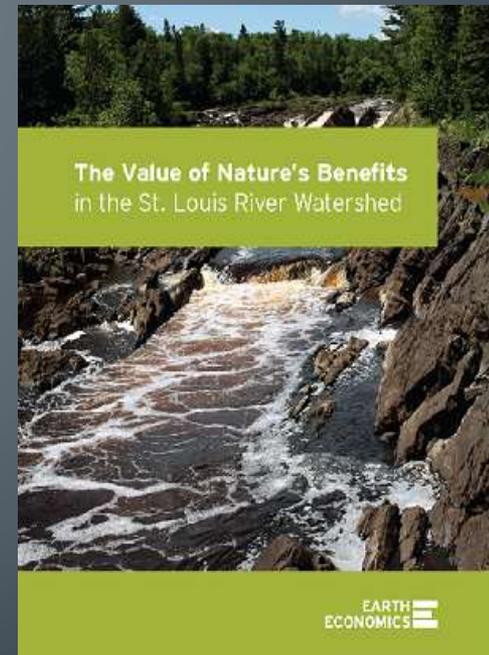
Scale: 1 inch = 4 miles
0 1 2 4 6 8 Miles

THE VALUE OF NATURE'S BENEFITS IN THE ST. LOUIS RIVER WATERSHED

- Earth Economics 2015

- **Goods:** Wild rice, fish, traditional plants, outdoor recreational opportunities
- **Services:** Flood risk reduction, carbon sequestration, water purification

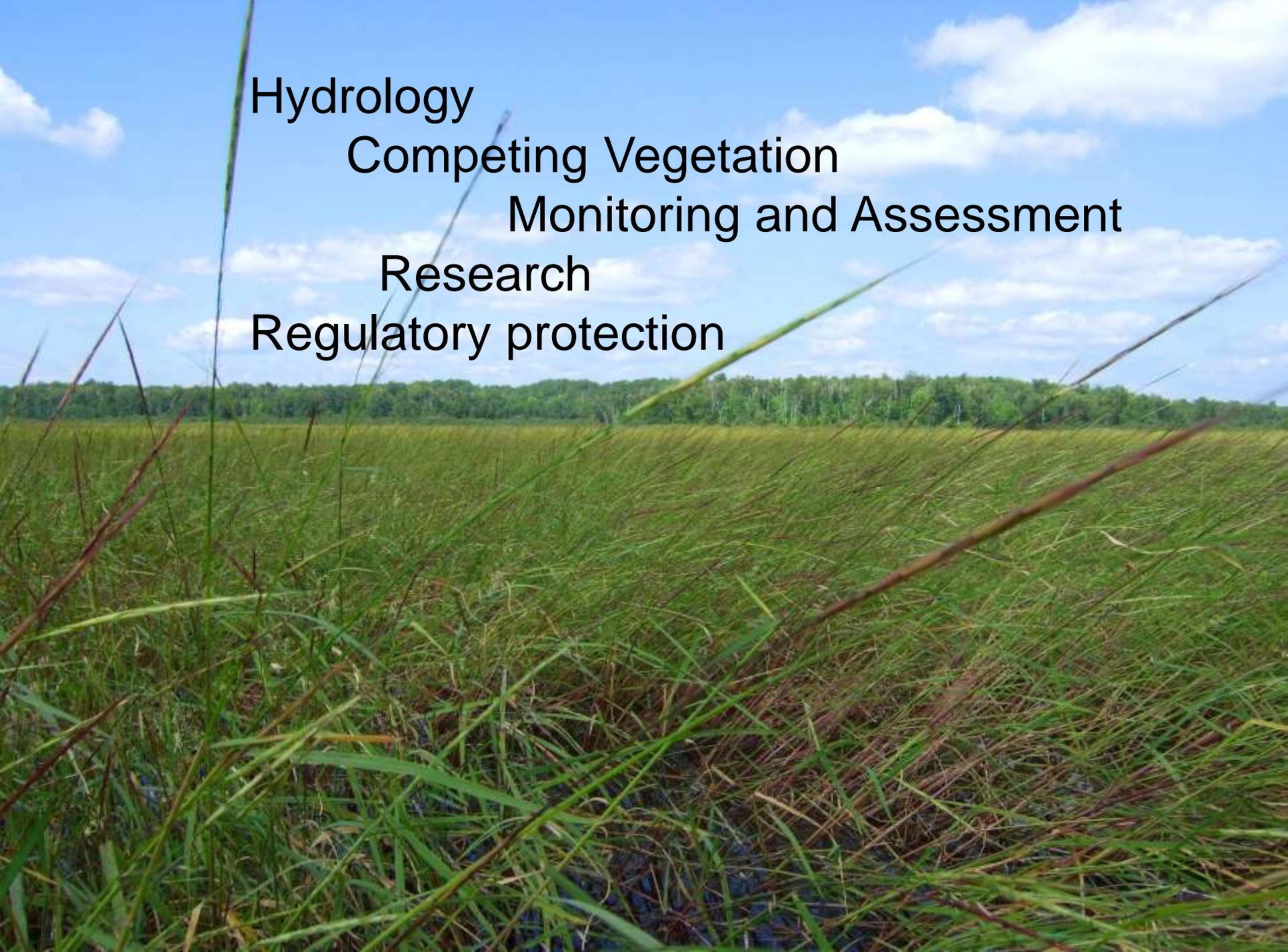
The goal of this report is to provide economic values for the ecosystem functions that exist within the natural landscape of the St. Louis River.





Multiple Stressors on Manoomin





Hydrology

Competing Vegetation

Monitoring and Assessment

Research

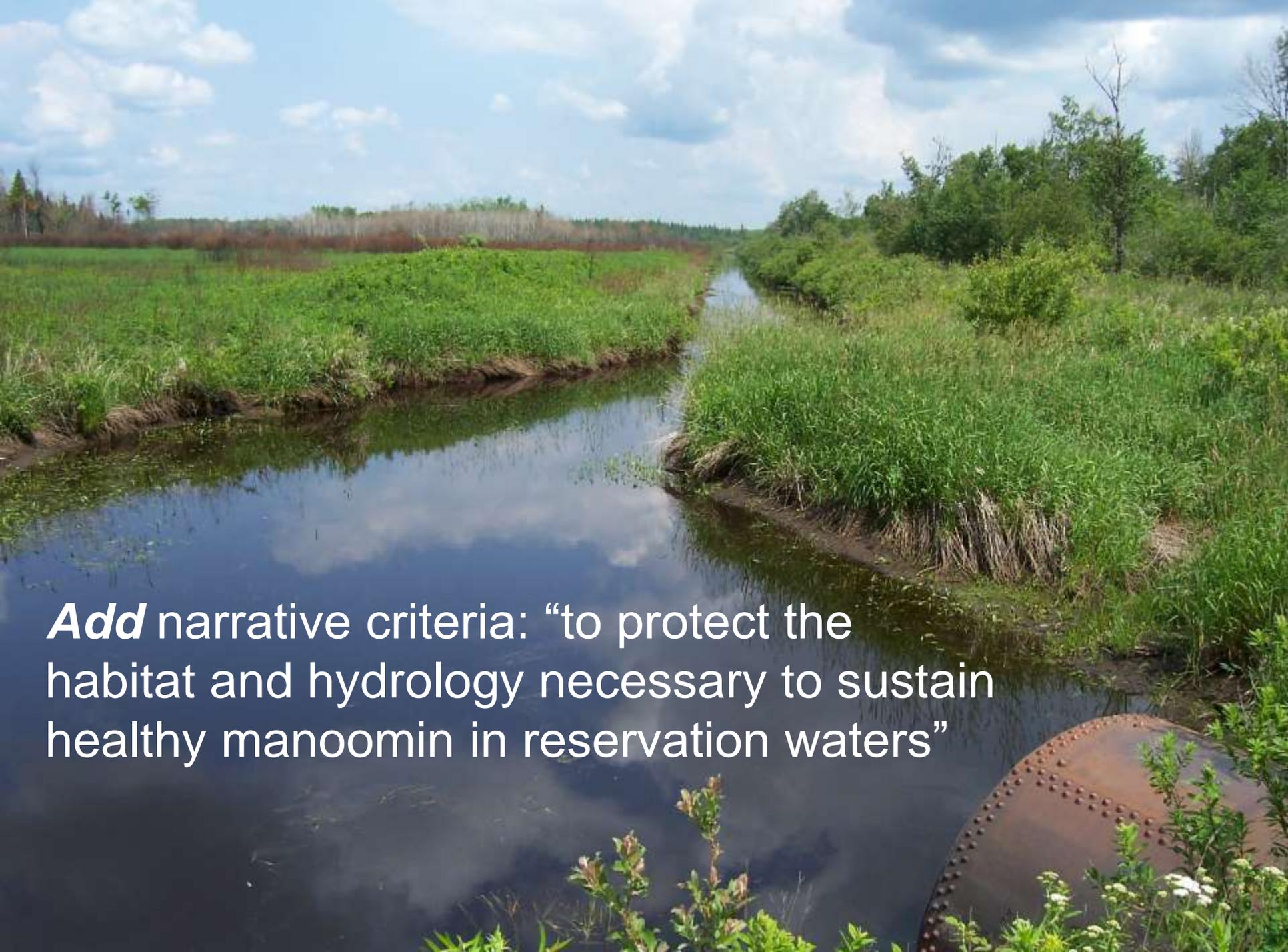
Regulatory protection



Support basic research:
Wild rice ecology,
Sulfate toxicity



**Keep our numeric
sulfate standard!**



Add narrative criteria: “to protect the habitat and hydrology necessary to sustain healthy manoomin in reservation waters”

Food Security/Food Sovereignty



Economic Analysis

Contracted with Earth Economics:

- Provide more detailed analysis of manoomin's contribution to the Minnesota and tribal economies
- Data on tribal, state rice harvesters, processors; annual harvest data
- Developed IMPLAN model
- Evaluated scenario with reduced manoomin; economic impacts to tribes and the state, including increased health care costs, food replacement costs



<http://www.eartheconomics.org/all-publications/manoomin>

42

FISH ADVISORY

FISH IN THIS SECTION
OF THE ST. LOUIS RIVER
ARE CONTAMINATED.

MN. DEPT. OF HEALTH
RECOMMENDS LIMITING
MEALS OF THESE FISH.

CALL MN. DEPT. OF
HEALTH FOR MORE INFO.

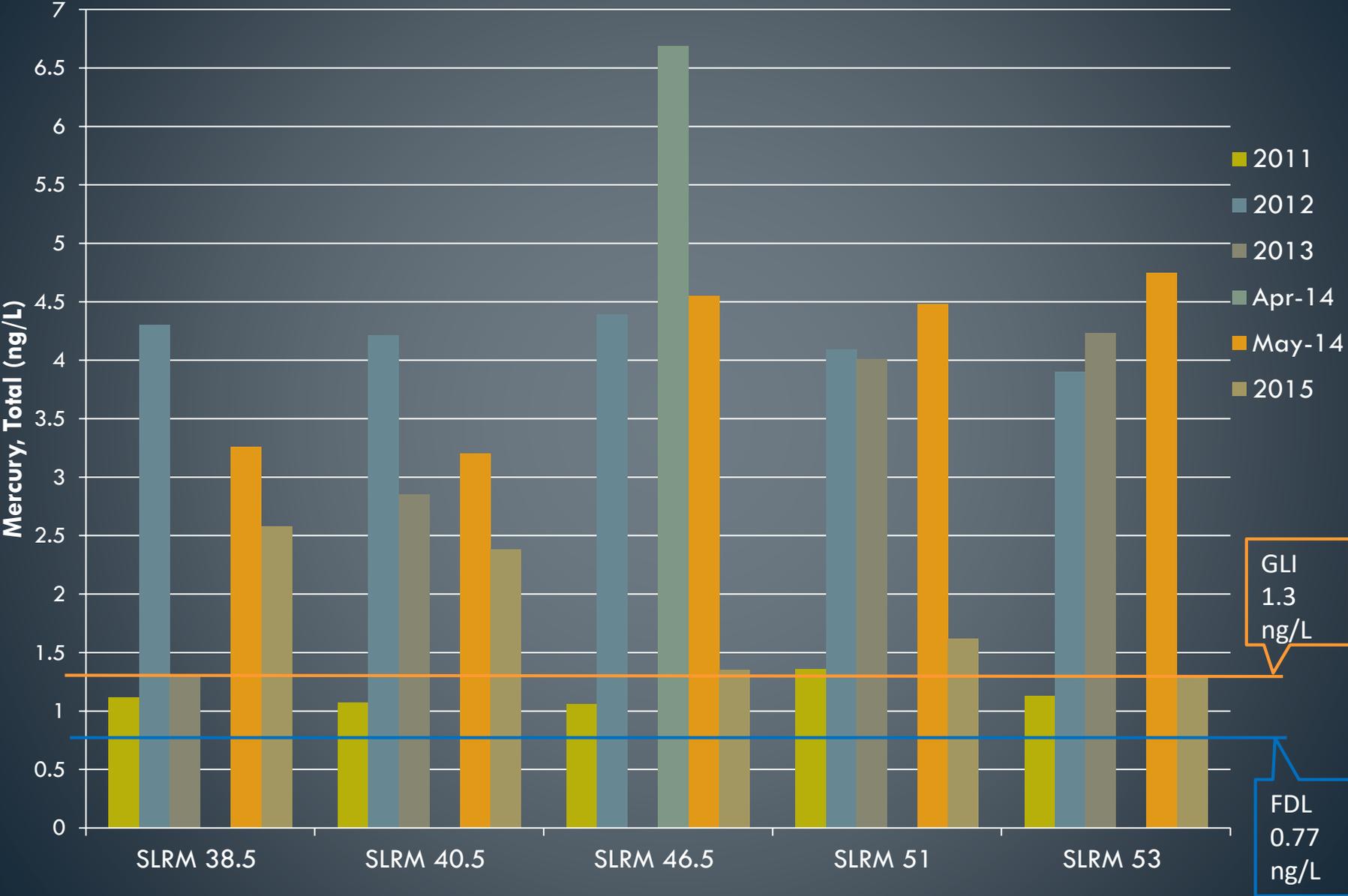
612-627-5047

Mercury Concerns

- ❑ Boreal forest/wetland ecoregion is especially sensitive to mercury deposition and methylation.
- ❑ Some tribal members consume fish at a greater rate than the general population.
- ❑ Existing industrial sources in our watershed can also enhance mercury methylation rates; warming climate can accelerate further
- ❑ The statewide TMDL for mercury does not include the St. Louis River.



Total Mercury for St. Louis River, 2011 - 2015



Q. Which waters in Fond du Lac have been tested?

Lake or River	Species Tested
Joe Martin	Black crappie
Lost	Walleye
Pat Martin	Black crappie
Perch	Northern pike
Simian	Northern pike
Sofie	Bluegill
West Twin	Walleye
	Northern pike
St. Louis River	Channel catfish
	Northern pike
	Smallmouth bass
	Walleye

- Notes:**
- The guidelines in this brochure are based on mercury and PCB levels measured in fish from waters throughout Minnesota, including the reservation lakes listed at left and the St. Louis River along the reservation border.
 - To obtain specific advice for Minnesota waters that have been tested by the state, please visit the Minnesota Department of Health or Department of Natural Resources (DNR) Web sites listed on the back of this brochure. You may also call the Minnesota DNR and ask to be mailed a DNR Lake Survey Report.

Mercury in fish collected and analyzed in 2001, 2008, 2015; Repeat in 2022

Work with MN Dept. of Health to determine safe consumption and offer guidance...but this is not a solution

outside: panel 1

outside: panel 2

outside: panel 3

outside: back cover (MDH version)

outside: front cover (MDH version)

Bought or Caught

Think: species, size and source

- How much mercury is in fish depends on the:
- **Species.** Some fish have more mercury than others because of what they eat and how long they live.
 - **Size.** Smaller fish generally have less mercury than larger, older fish of the same species. Unlike people, fish do not get rid of mercury.
 - **Source.** Fish from lakes in northeastern Minnesota generally have more mercury than in southern and central Minnesota. How clean a lake looks is not a sign of how safe the fish are to eat.

Fish bought at a store or restaurant also contain mercury. Farm-raised fish, such as salmon, are low in mercury but can contain other contaminants that may be found in fish feed. The amount of contaminants is small enough that farm-raised salmon are still good to eat 2 times a week.

Choosing sustainably sourced fish is a personal choice. Sustainably sourced fish are either caught or farmed without harming other types of fish or the environment.

LIGHT OR WHITE CANNED TUNA?

Choose canned light tuna more often than canned white tuna. Canned light tuna has 3 times less mercury than canned white (albacore) tuna and is less expensive.



- Cooking, cleaning and contaminants**
- You cannot remove mercury through cleaning, trimming fat or cooking. Mercury gets into the flesh of fish.
 - You can reduce some other contaminants by trimming skin and fat when you clean and cook fish.



Fish to Avoid

Mercury levels are too high
Do not eat the following fish if you are pregnant or may become pregnant, or are under 15 years old:

- King mackerel
- Muskellunge (muskie)
- Shark
- Swordfish
- Tilefish

Raw fish may cause illness
If you are or might be pregnant, eat only cooked fish. Parasites and bacteria in uncooked fish, such as sushi, can cause illness.

FOR MORE INFORMATION

Check out the resources below to learn more about contaminants in fish and to find recommendations for specific Minnesota lakes and rivers.

- Minnesota Department of Health
health.state.mn.us/fish
800-657-3908
- Minnesota Department of Natural Resources LakeFinder
dnr.state.mn.us/lakefind/index.html

Parmesan Salmon

Try this easy, tasty recipe for serving up a good source of omega-3s. Salmon has a rich, buttery taste and tender, large flakes. Serve with brown rice and a mixed green salad for up to 4 people.

- What you need**
- 1 pound salmon fillet (not steak)
 - 2 tablespoons grated Parmesan cheese
 - 1 tablespoon horseradish, drained
 - 1/3 cup plain nonfat yogurt
 - 1 tablespoon Dijon mustard
 - 1 tablespoon lemon juice

- How to prepare**
1. Arrange the fillet, skin side down, on foil-covered broiler pan.
 2. Combine remaining ingredients and spread over fillet.
 3. Bake at 450°F or broil on high for 10 to 15 minutes, until you can easily flake the fillet with a fork. Do not overcook fish.

- Other options**
- Grill on foil sprayed with cooking oil for 10 to 15 minutes.
 - You can use tilapia, which has a mild, sweet taste and tender, large flakes. Tilapia has fewer calories and fat, and also fewer omega-3s.



FOR MORE RECIPES
Visit ChooseYourFish.org to learn how to select and cook fish.

Developed by HealthPartners Institute in partnership with the Minnesota Department of Health, 2016.

DISH UP SOME

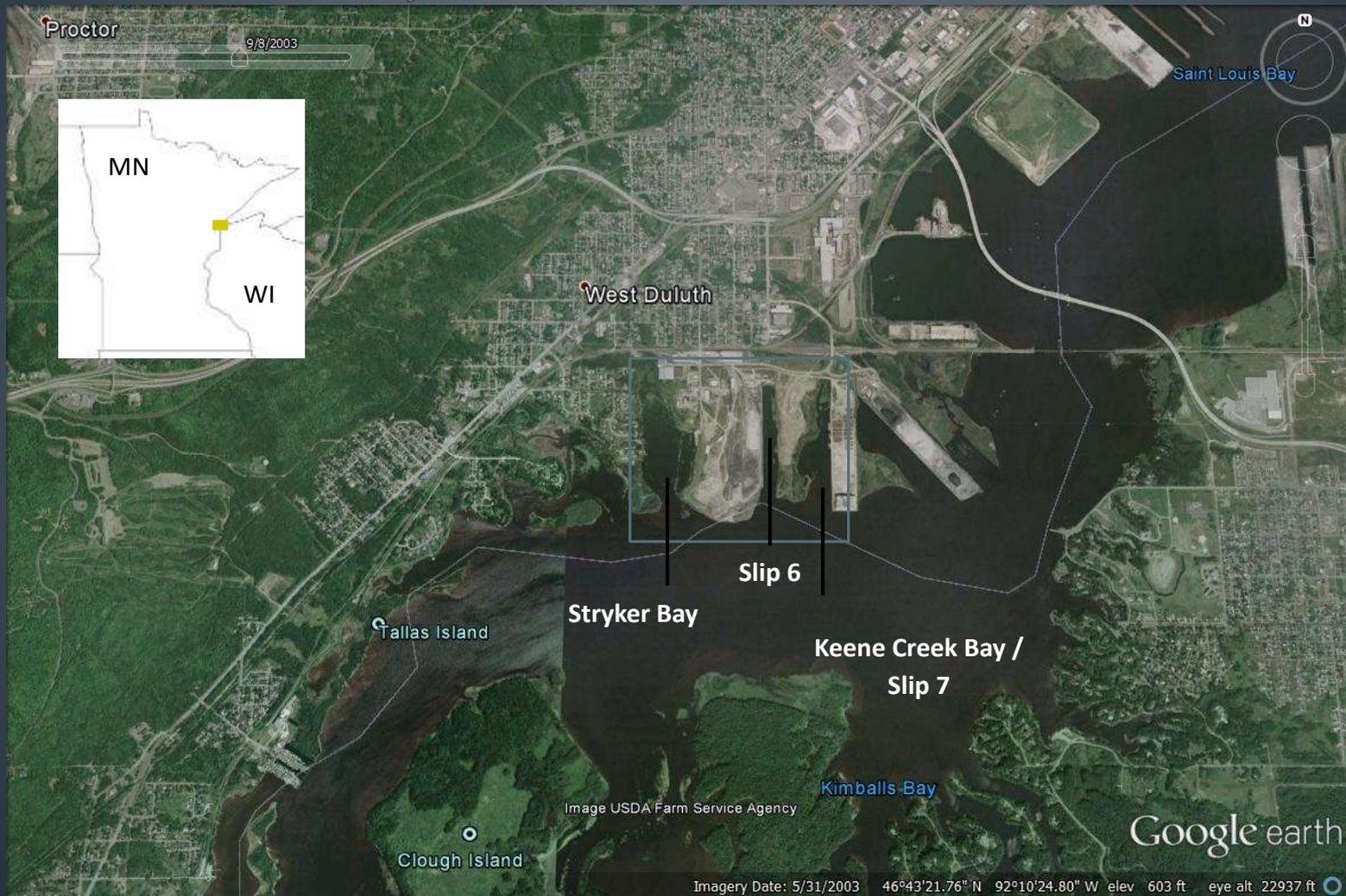
FISH

MDH Minnesota Department of Health

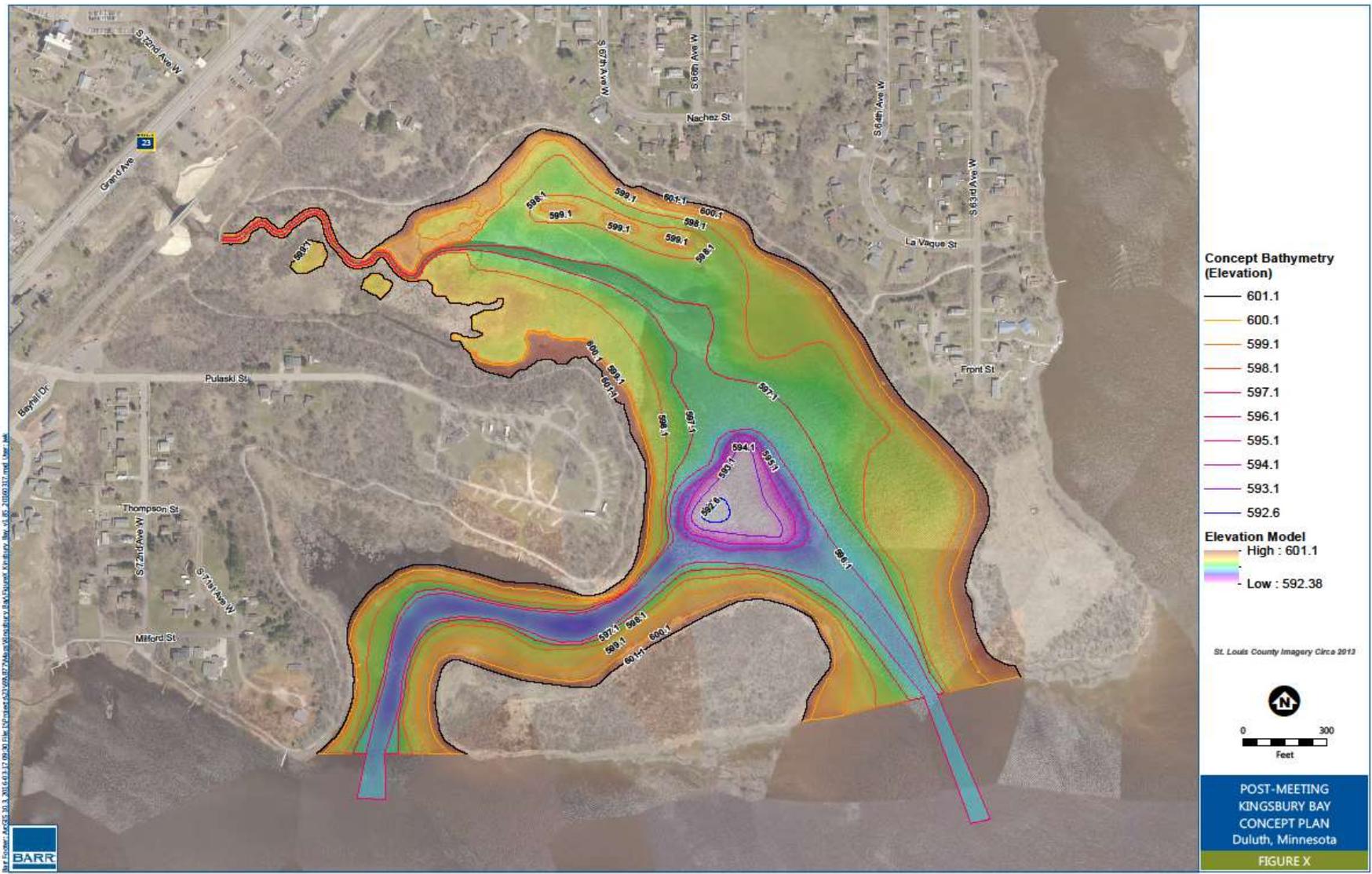
St. Louis River Mercury TMDL

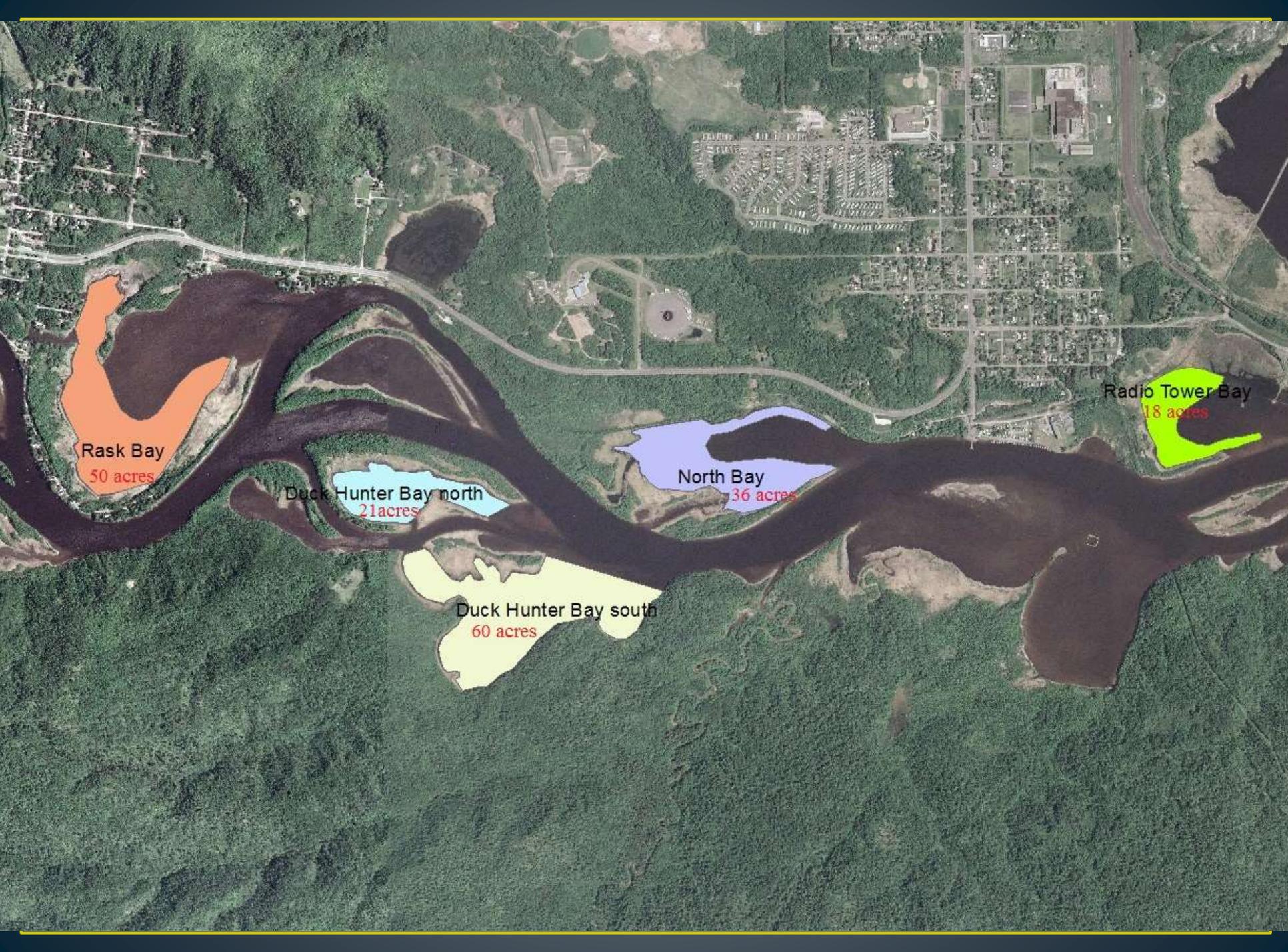
- MN, WI, EPA Region 5, FDL commenced in 2010
- States' focus on AOC – multiple impairments, legacy contamination;
- Tribal focus on fish consumption advisories for mercury – upstream loadings, watershed factors
- Mercury is the ubiquitous contaminant
- *Off the rails in 2013, but...*
- Renewed initiative in 2021, including funding from legislature: technical advisory group convened, agencies discussing roles and outcomes

St. Louis River/Interlake Duluth Tar



Natural Resources Damage Assessment and Restoration...final settlement!





Rask Bay
50 acres

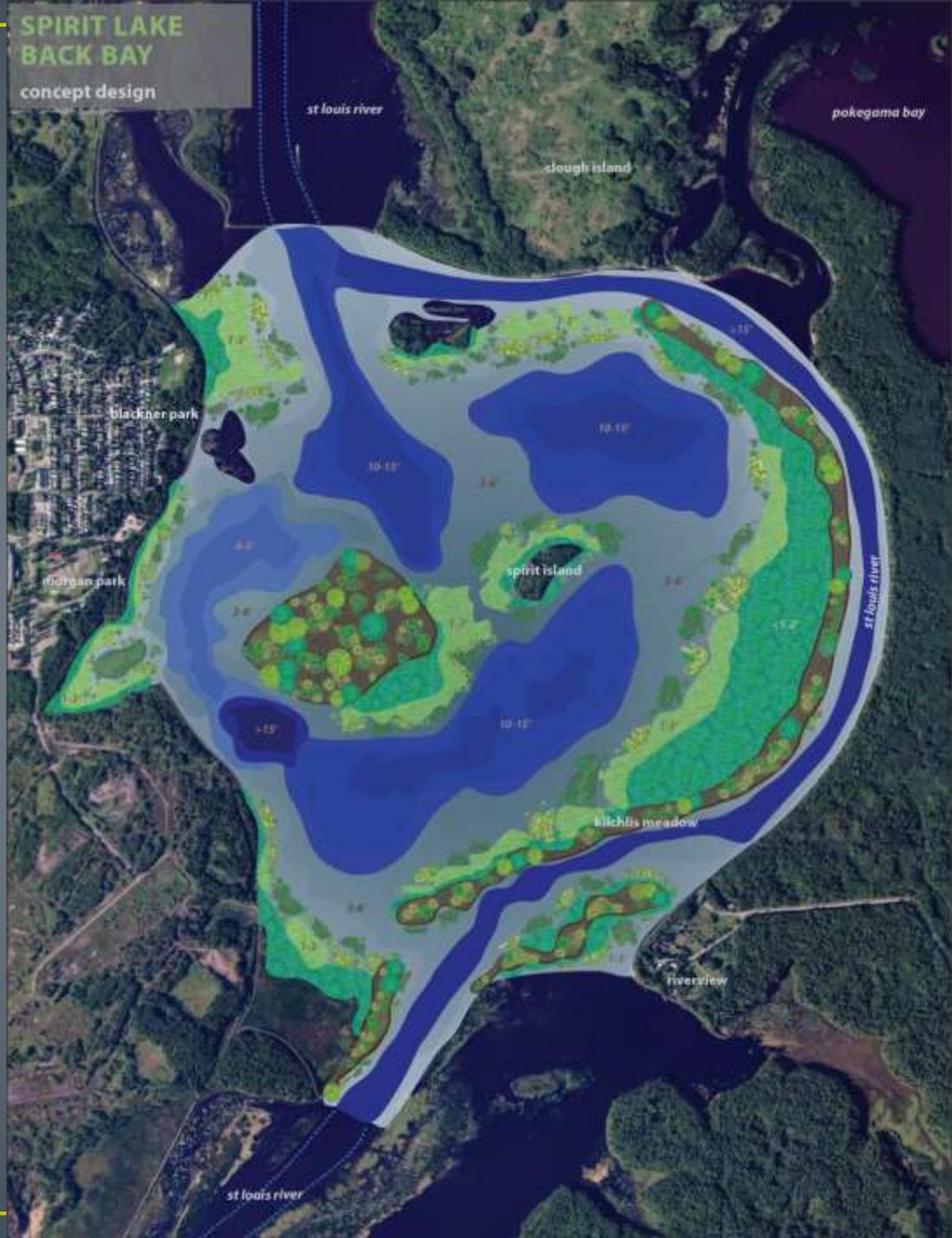
Duck Hunter Bay north
21 acres

Duck Hunter Bay south
60 acres

North Bay
36 acres

Radio Tower Bay
18 acres

US Steel Superfund site
Great Lakes Legacy Act remedy: key to
BUI/AOC delisting
Also active NRDA action underway



Spirit Island:
The sixth stopping place (Ojibwe
migration story); now owned by
the Band





**Oversight/Inspection of Enbridge pipelines during construction:
Environmental compliance and cultural surveys
Comprehensive surface and groundwater monitoring plan**



Restoring lake sturgeon:
culturally significant,
historically abundant

Chi miigwech!

nancyschuldt@fdlrez.com

218-878-7110

