

Resource Protection

LAKES, STREAMS, & FORESTS IN THE UPPER MISSISSIPPI RIVER BASIN



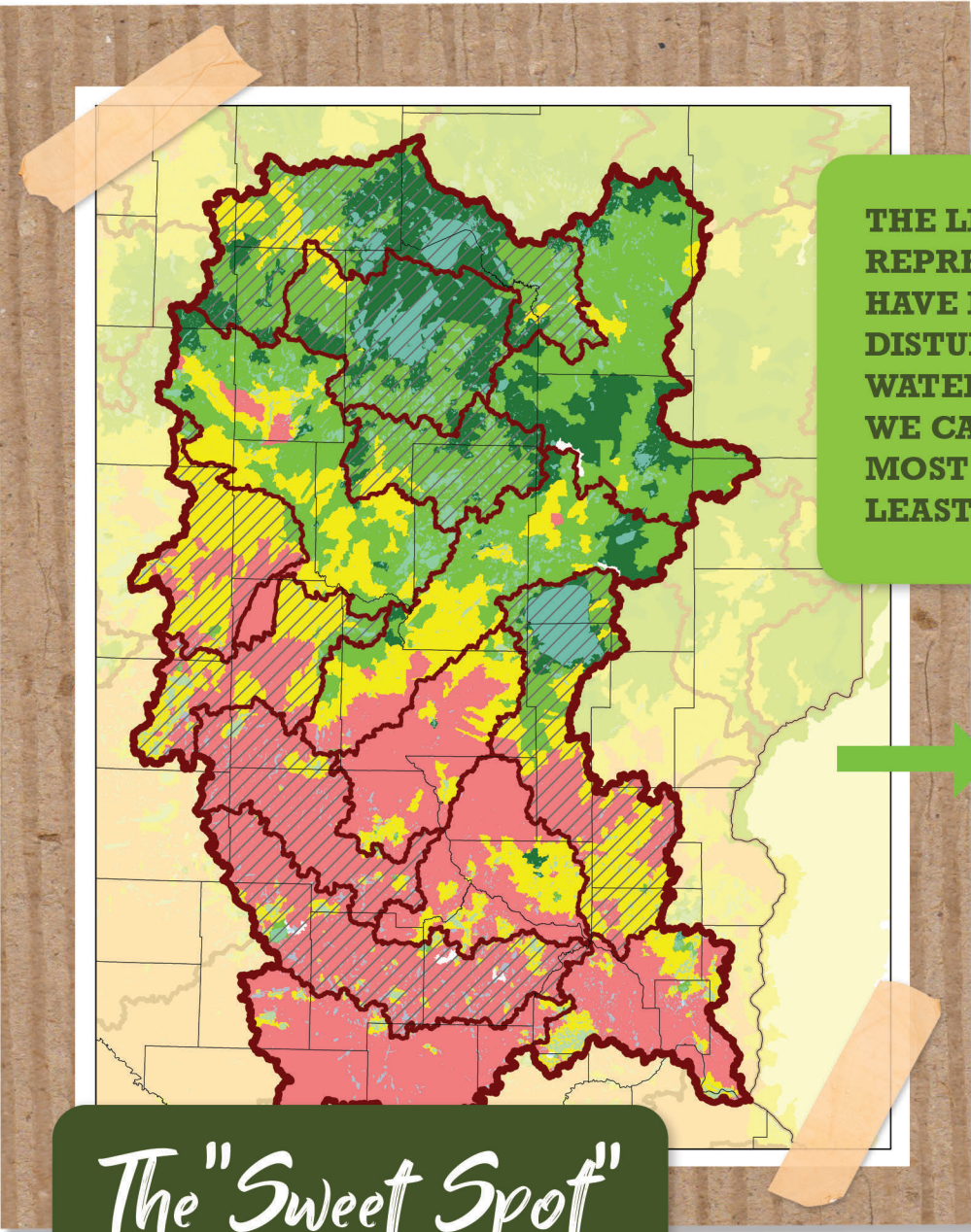
Forested lands provide clean water because the excess stormwater is absorbed into the land like a *giant sponge*. The more trees, shrubs, and native vegetation the land holds, the more stormwater runoff it can absorb. Excessive stormwater is harmful when it runs directly into lakes and rivers because it carries sediment, toxins, and overloaded amounts of nutrients like phosphorus, which can damage fish and wildlife habitat.

An ounce of prevention is worth a pound of cure and the cost for protection is much less than the cost of restoration.

Lands can be used and protected at the same time. Protection does not mean lands cannot be lived on, used or even managed for timber.

“Water, in all its uses and permutations, is by far the most valuable commodity that comes from the forest land that we manage, assist others to manage, and/or regulate.”

- Policy Statement,
National Association
of State Foresters



THE LIGHT GREEN AREA REPRESENTS LAKES THAT HAVE LOW LEVELS OF DISTURBANCE & GOOD WATER QUALITY, THUS WE CAN PROTECT THE MOST HABITAT AT THE LEAST EXPENSE.

-  Little to no disturbance or land use conversion
-  Low disturbance. The protection "Sweet Spot"!
-  Intermediate disturbance. Declining water quality.
-  Mostly disturbed lands. Poor water quality.

The "Sweet Spot"



PROTECTION

The lands indicated by dark green have already met the protection goal. But the light green zones are great candidates for increased protection. The cost to protect these wooded tracts are 10 to 15 times less expensive than to restore disturbed lands!



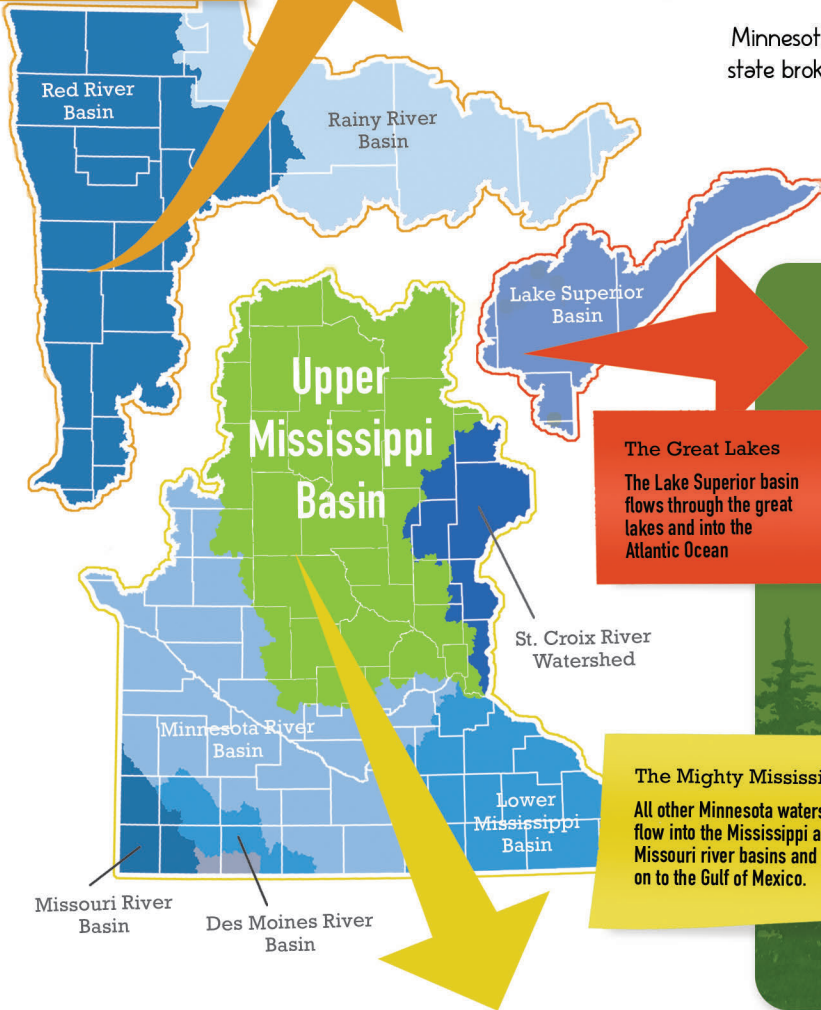
RESTORATION

Land restoration, in regard to lake and stream habitat and water quality, is a difficult and costly endeavor. As mentioned above, it's far more cost effective to protect high-quality waters than to attempt to restore degraded watersheds.

North to the Arctic
The Red River and Rainy River watershed flow north into the Arctic Ocean

ALMOST NO WATER FLOWS IN TO MINNESOTA, IT ALL FLOWS OUT

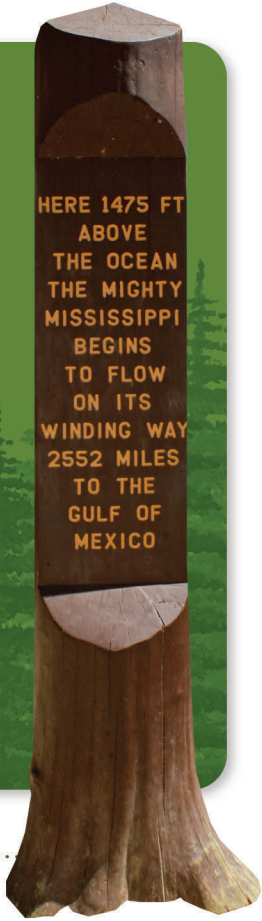
Minnesotans are stewards of many waters. The map shows our state broken into counties, (the white lines) by major watershed, (the various blue sections) The upper Mississippi basin, (Highlighted in green) and by water flow (the orange, red, and yellow groups).



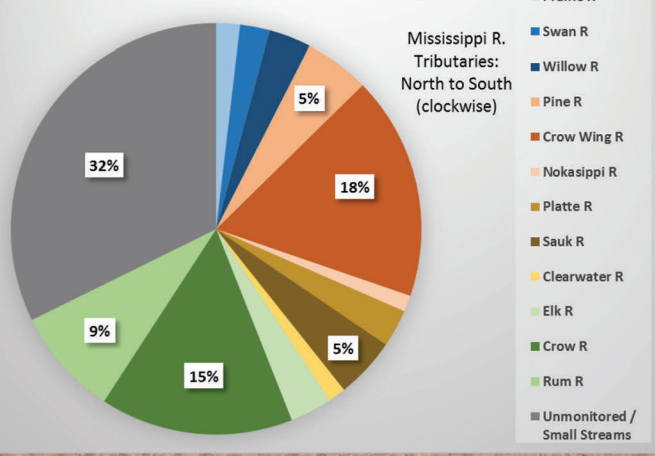
The Great Lakes
The Lake Superior basin flows through the great lakes and into the Atlantic Ocean

The Mighty Mississippi
All other Minnesota watersheds flow into the Mississippi and Missouri river basins and then on to the Gulf of Mexico.

The Mississippi River begins its winding journey to the Gulf of Mexico as a mere 18-foot wide knee-deep river in Itasca State Park. From here the river flows north to Bemidji, where it turns east, and then south near Grand Rapids. It will flow a total of 694 miles before working its way out of Minnesota.



Twin Cities Drinking Water: Source Water Origin



"Drink up!"
YOUR CLEAN WATER HAS BEEN PROVIDED BY THE UPPER MISSISSIPPI BASIN!

SOURCE-WATER

The upper Mississippi basin serves as Minnesota's largest source-water. It is the primary water source for the cities of St. Cloud, Minneapolis, and St. Paul.



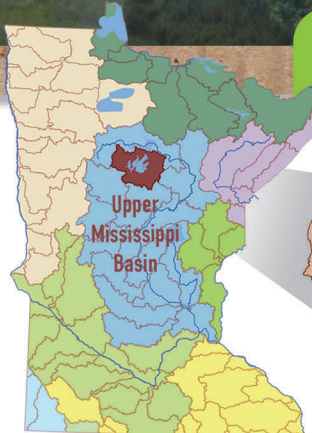
WITHIN THE BASIN:

- 15 Major Watersheds
- 112 Sub-watersheds
- 1349 Minor watersheds



Watershed Geographic Context

WORKING AT MULTIPLE SCALES



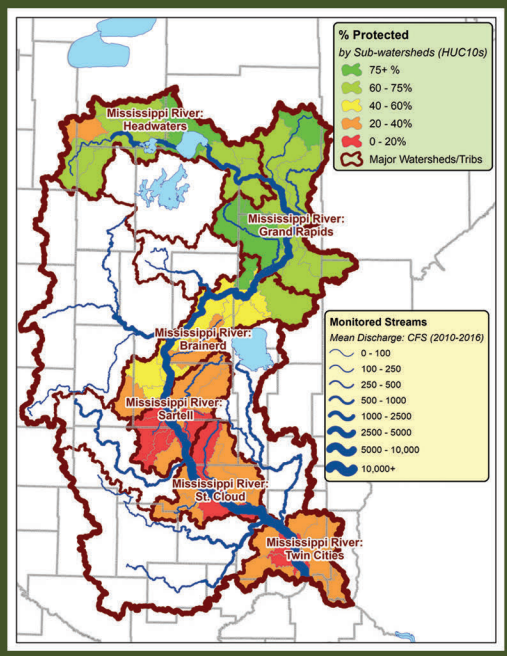
Major Watershed
*HUC08

Subwatershed
*HUC10

Minor Watershed
*HUC14

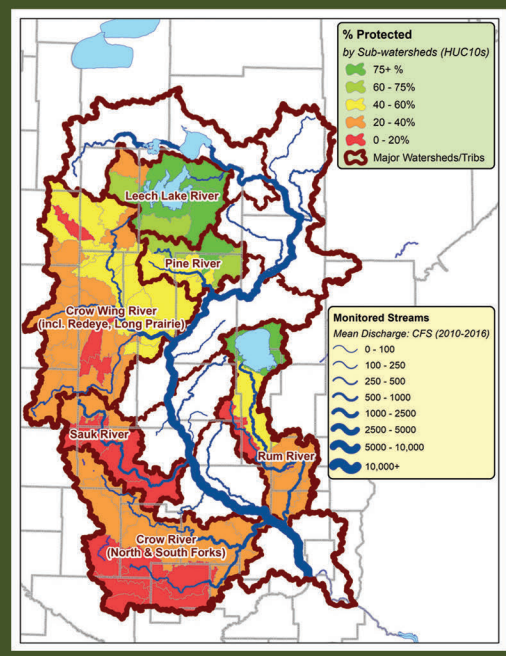
BI-LATERAL MAJOR WATERSHEDS

- Along Main-stem
- Flow-through watersheds
- Population Centers



TRIBUTARY MAJOR WATERSHEDS

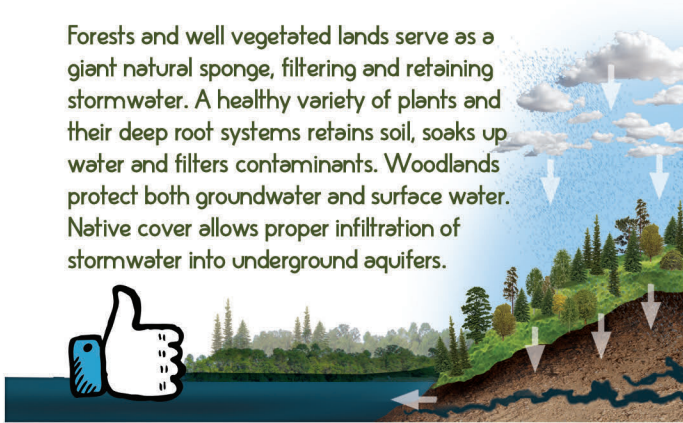
- 5 on West, 1 on East
- Crow River = 2 majors
- Crow Wing River = 3 majors



Protect forests, protect water

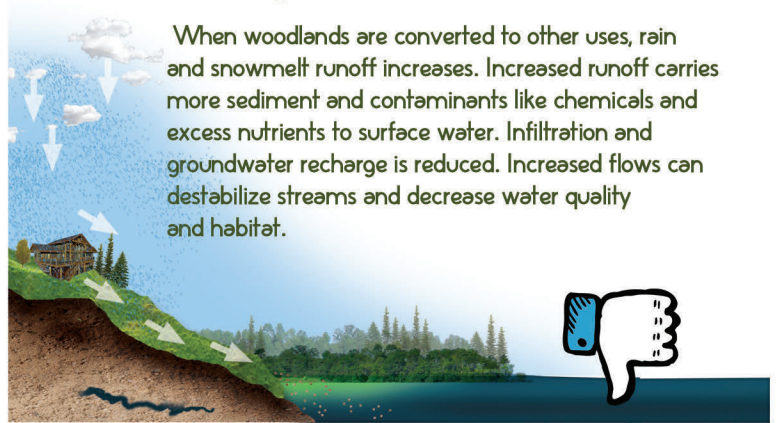
Forested Lands Retain Water

Forests and well vegetated lands serve as a giant natural sponge, filtering and retaining stormwater. A healthy variety of plants and their deep root systems retains soil, soaks up water and filters contaminants. Woodlands protect both groundwater and surface water. Native cover allows proper infiltration of stormwater into underground aquifers.



Developed Lands Shed Water

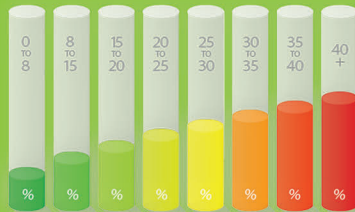
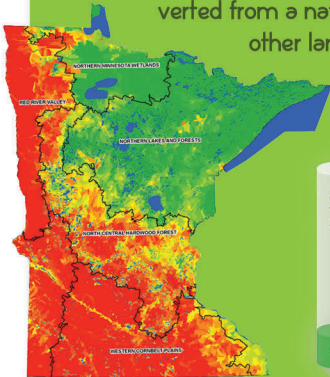
When woodlands are converted to other uses, rain and snowmelt runoff increases. Increased runoff carries more sediment and contaminants like chemicals and excess nutrients to surface water. Infiltration and groundwater recharge is reduced. Increased flows can destabilize streams and decrease water quality and habitat.



Land use, habitat, & water quality

Habitat and water quality are dependent on the percentage of use on the land or "Disturbance".

Statewide percentages of lands that have been converted from a natural forested or prairie condition to other land uses such as crop, pasture land, and developed areas are shown in yellow, orange, and red.



The magic number is 25%

Watershed land cover was analyzed for over 1,200 fishing lakes in Minnesota. Increased runoff brings excess phosphorus to lakes, which cause harmful algae blooms.

The phosphorus concentration in lakes goes up dramatically when more than 25% of the watershed is disturbed.



THE GOAL IS TO PROTECT 75%

The dial on the right shows the overall risk / health percentage of a lake or watershed. The goal is always to move the needle to higher levels of land protection for the sake of the lake or watershed.



Productive & protected!

Protection does not mean lands can not be lived on, used, or even managed for timber. Working woodlands can be both productive and protected.



Designed for Protection

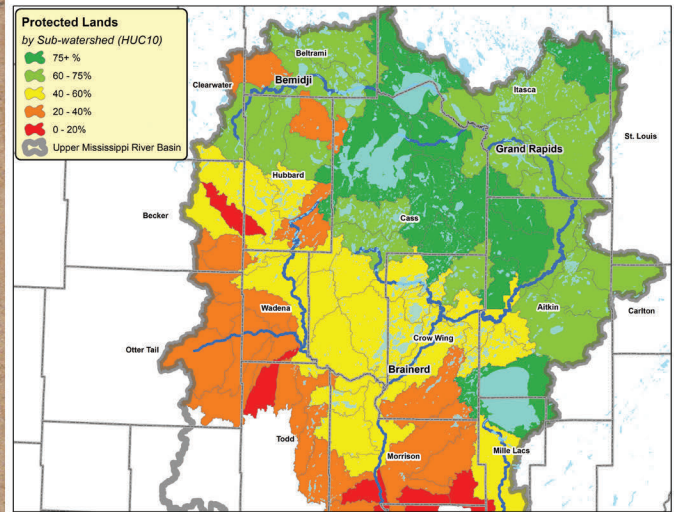
FOCUS IS ON THE UPPER HALF OF THE BASIN WHERE THERE ARE: SANDY SOILS, LOW SLOPE, NUMEROUS LAKES / WETLANDS (STORAGE), FORESTED LANDSCAPE, INTACT HYDROLOGY, AND HIGH QUALITY HABITAT (AQUATIC & TERRESTRIAL)

CHALLENGES:

- One of the most complicated ownership patterns of private, county, state, and federal, & tribal land in the US.
- 4000+ lakes (how to prioritize)

WHERE TO START:

The light green portions shown on the map & in the chart are the "sweet spot" where we maximize *return on investment*. The most acres of the highest quality fish & wildlife habitat for the fewest dollars.



Major Watershed	Watershed Acres	Forest Lands (ac)	% Forested*	% Protected	Strategy
Leech Lake River	857,971	560,736	65.4%	79.1%	Vigilance
Mississippi River - Grand Rapids	1,332,798	979,498	73.5%	76.2%	Vigilance
Mississippi River - Headwaters	1,228,889	799,294	65.0%	72.5%	Sweet Spot!
Pine River	500,887	338,948	67.7%	65.6%	Sweet Spot!
Mississippi River - Brainerd	1,076,300	539,590	50.1%	52.1%	Further to go
Crow Wing River	1,268,959	667,797	52.6%	46.3%	Further to go
Rum River	1,013,794	322,607	31.8%	45.8%	Further to go
Long Prairie River	565,078	135,945	24.1%	33.5%	Limited
Redeye River	572,069	143,895	25.2%	31.2%	Limited
Mississippi River - Sartell	656,115	138,344	21.1%	26.4%	Limited
Mississippi River - St. Cloud	717,376	128,179	17.9%	25.6%	Limited
Sauk River	666,750	68,068	10.2%	21.6%	Limited
North Fork Crow River	644,320	87,281	13.5%	<20%	Limited
South Fork Crow River	944,854	33,848	3.6%	<20%	Limited
Mississippi River - Twin Cities	818,100	68,776	8.4%	<20%	Limited

* Includes woody wetlands

2008 - 2020

Setting the Stage for Success



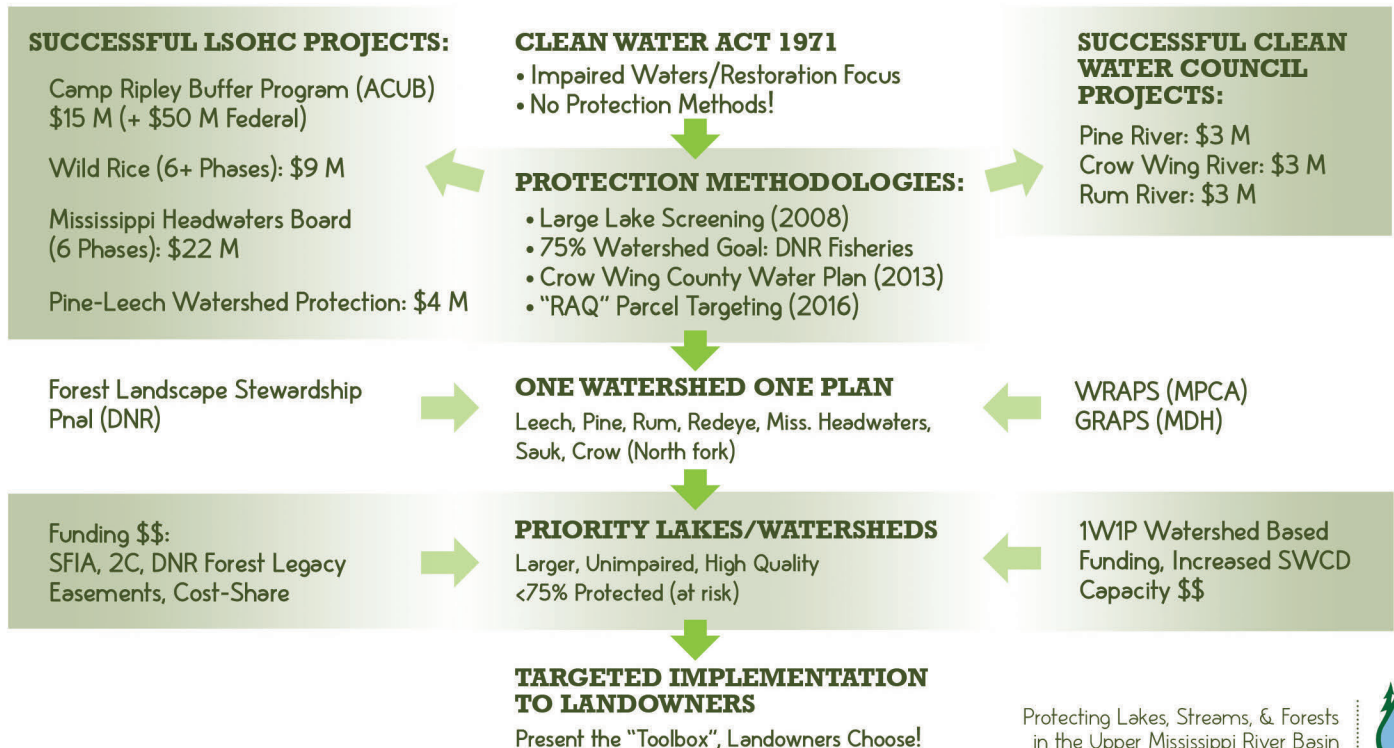
CLEAN WATER LAND & LEGACY

Both the Clean Water Council and Lessard-Søms Outdoor Heritage Council were established by the Legacy Amendment passing in 2008.

The Clean Water Land & Legacy Amendment generates revenue for clean water & habitat related projects, which are reviewed and allocated by the Lessard-Søms Outdoor Heritage Council (LSOHC) and Clean Water Council.



Habitat and Water Quality Protection: Successful Protection Efforts in the Upper Mississippi Basin



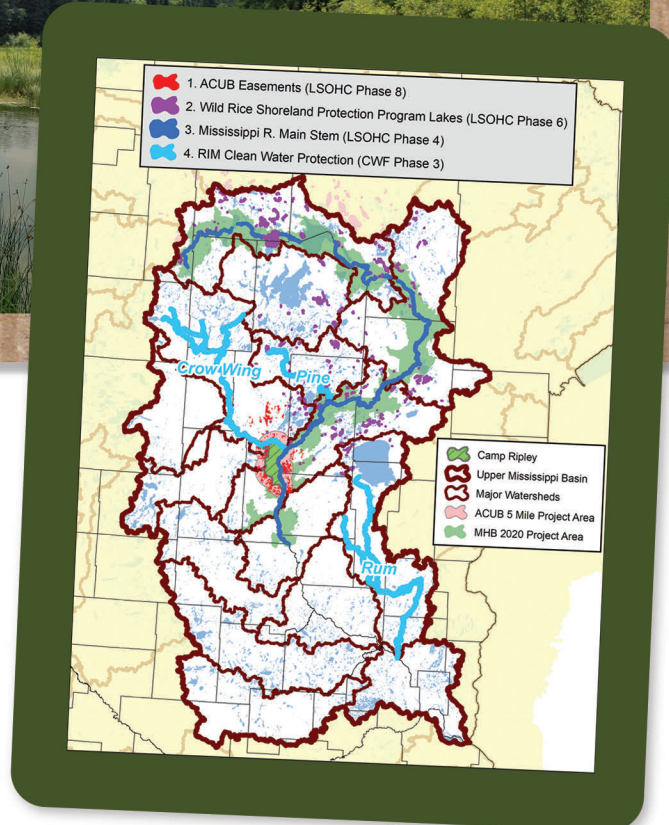
Early Protection Successes



INITIAL PROTECTION FUNDING:

Most of initial protection funding has been stream-focused:

Nearly 10x more funds to protect streams vs. lakes since 2005



PROTECTION SUCCESS:

The protection and proper land management of forests and woodlands for habitat and water quality and habitat is what has moved the needle toward the win column for each of the watersheds within the basin. More than 200,000 acres have been designated for protection over the past six years.

Project	# of Phases	Primary Geography	Conservation Tool	Project Start Year	Funding Source(s)	Total Funding Amount	Lake or River Focus
Camp Ripley ACUB Protection	2	Camp Ripley & vicinity	Easements	2006	DOD/NGB	\$38 Million	River
Camp Ripley Sentinel Landscape ACUB Habitat Protection Program	10	Camp Ripley & vicinity	Easements	2010	OHF	\$15 Million	River
Wild Rice	7	10+ counties	Easements	2012	OHF	\$9 Million	Lake
Clean Water Critical Habitat (<i>Northern Waters Land Trust, MLT</i>)	8	Cass, Hubbard, Crow Wing, Aitkin	Easements, Acquisition	2014	OHF	\$21.5 Million	Lake & River
Mississippi Headwaters Habitat Corridor Project	6	First 400 miles of Miss. R.	Easements, Acquisition	2016	OHF, CWF	\$22 Million	River
RIM Critical Shorelands (<i>multiple rivers</i>)	4	Pine R., Crow Wing R., Rum R.	Easements	2016	CWF, TNC	\$11 Million	River
Protecting North-Central Minnesota Lakes	1	Camp Ripley, Aitkin & Crow Wing Co.	Easements, BMPs	2017	ENRTF	\$0.75 Million	Lake
Targeted RIM Easement & Acquisition to the Parcel	2	Pine R. & Leech Lake R. Watersheds	Easements, Acquisition	2020	OHF	\$4.5 Million	Lake & River

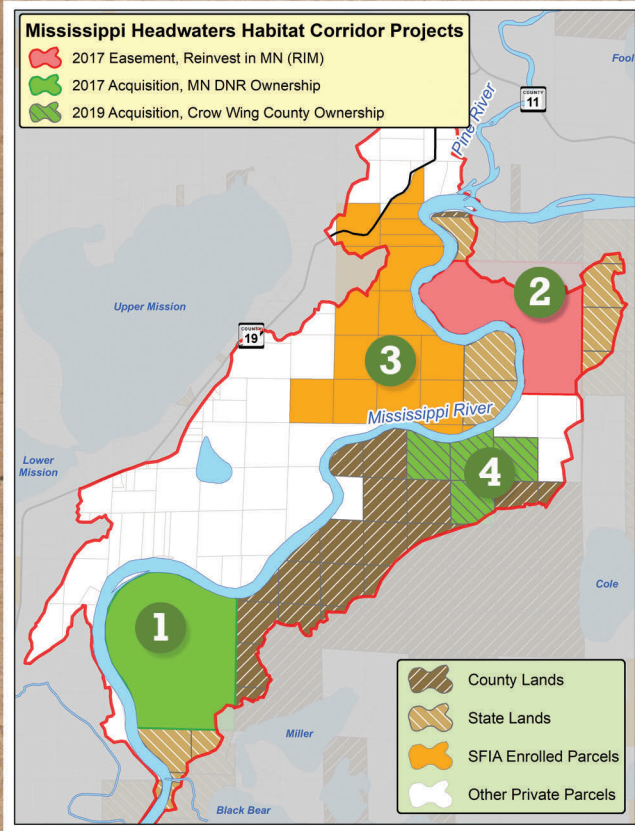
- River focused projects
- Lakes focused projects
- Both River & Lakes

DOD - Department of Defense
 NGB - National Guard Bureau
 OHF - Outdoor Heritage Fund

CWF - Clean Water Fund
 TNC - The Nature Conservancy
 ENRTF - Environment & Natural Resources Trust Fund

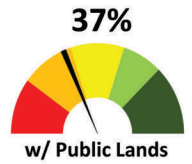
Project Spotlight

Mississippi River Targeted Easements & Acquisition

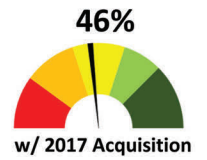


PROGRESSION OF PROTECTION

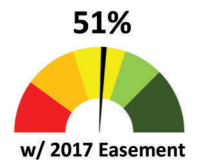
In this project spotlight, you can follow the progression of protection as lands are enrolled in conservation programs, easements, or purchased. The map to the left shows parcels along the river, the numbers show the timeline of protection steps. It begins with the watershed hovering at 37% protection.



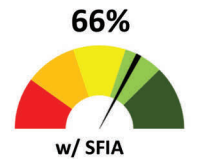
1 2017 Land acquisition along the riverbank. MN DNR Ownership. Protection climbs from 37% to 46%.



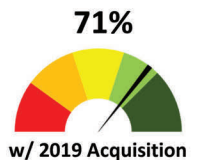
2 2017 Land enrolled in RIM. (Reinvest in MN) Protection jumps from 46% to 51%.



3 Land parcels enrolled in SFIA. Sustainable Forest Incentive Act. Protection climbs from 51% to 66%.

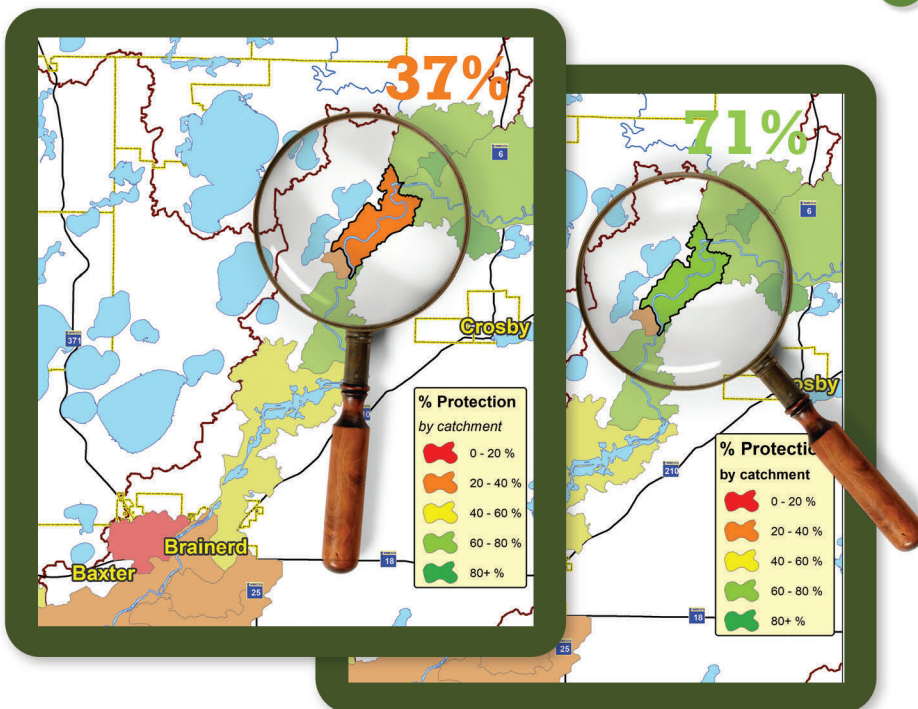


4 2019 Land acquisition by Crow Wing County Protection has nearly reached the target goal of 75% protection.

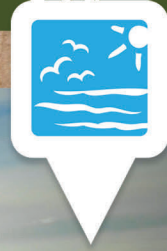


CONSERVATION TEAMWORK

It takes a coordinated conservation team of many to move the needle, including SWCDs, Counties, NGOs, State & Federal Government Agencies, and engaged landowners.



Lakes... the next priority



SHIFTING THE FOCUS TO LAKES

Most Minnesotans benefit from clean lakes without ever knowing it. Our way of life is deeply connected to the quality of our lakes.

Northwoods lakes are extremely valuable, but if we don't protect them, fish and wildlife habitat can be degraded.

Much like streams and rivers, the primary threat when it comes to our pristine northern lakes is over-development. When land is converted from its native vegetative cover to other uses or to development it loses its power to protect the lake.

When the land becomes over-developed, the habitat and water quality declines.



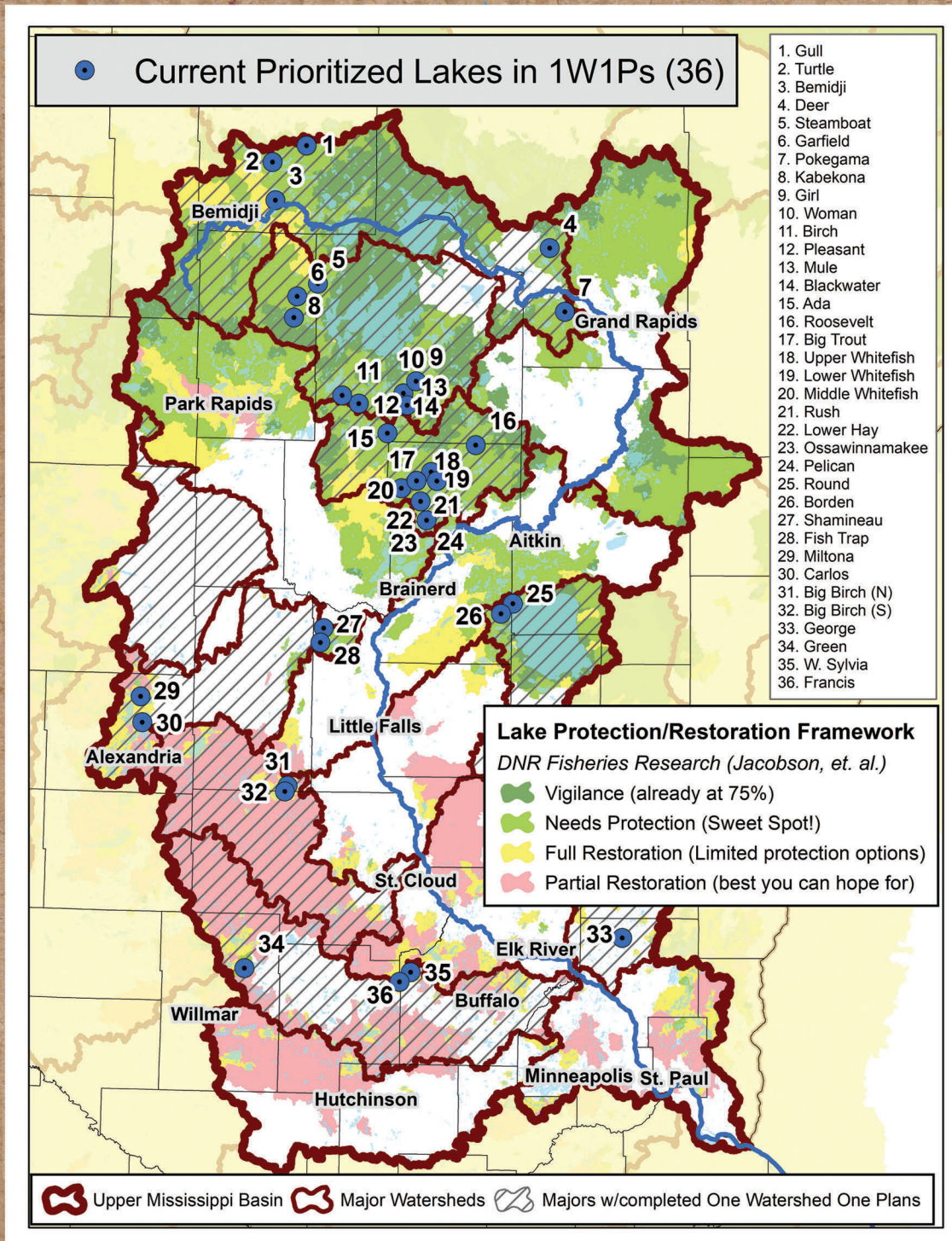
The Push to the Finish



The table below shows key lakes, within each watershed of the upper Mississippi basin. The current percentage of protected land is shown. Along side the protection percentage is listed the number of remaining acres needed to reach a 75% protection goal for each lake/watershed.

LAKES	COUNTY	WATERSHED	TOTAL PROTECTED %	ACRES NEEDED FOR 75%	
Ada	Cass	Pine River	71.9%	271	SO CLOSE!
Bemidji	Beltrami	Mississippi Hdwtrs	56.1%	2980	
Big Trout	Crow Wing	Pine River	59.4%	1290	
Birch	Cass	Leech Lake River	56.5%	921	
Birch (N & S)	Stearns	Sauk River	37.1%	5296	DANGER ZONE!
Borden	Crow Wing	Rum River	50.6%	2751	
Carlos	Douglas	Long Prairie River	53.8%	2189	
Deer	Itasca	Mississippi Hdwtrs	61.4%	2274	
Fish Trap	Morrison	Long Prairie River	60.1%	1045	
Francis	Meeker/Wright	Crow River (N Fork)			
Garfield	Hubbard	Leech Lake River	47.2%	4256	
George	Anoka	Rum River	30.1%	3784	
Girl, Woman	Cass	Leech Lake River	76.0%	0	👍
Green	Kandiyoki	Crow River (N Fork)			
Gull	Beltrami	Mississippi Hdwtrs	59.7%	1064	
Kabekona	Hubbard	Leech Lake River	73.4%	82	SO CLOSE!
Lower Hay	Crow Wing	Pine River	34.3%	3476	
Miliona	Douglas	Long Prairie River	57.4%	2020	GO GREEN!
Mule, Blackwater	Cass	Leech Lake River	61.2%	982	
Ossawinnamakee	Crow Wing	Pine River	38.1%	4754	DANGER ZONE!
Pelican	Crow Wing	Pine River	63.8%	2003	
Pleasant	Cass	Leech Lake River	43.2%	2726	
Pokegama	Itasca	Mississippi Hdwtrs	56.8%	5367	
Roosevelt	Cass/CWC	Pine River	66.6%	1147	
Round	Aitkin/ CWC	Rum River	65.3%	679	
Rush	Crow Wing	Pine River	64.9%	531	
Shamaineau	Morrison	Long Prairie River	54.1%	3632	
Steamboat	Hubbard	Leech Lake River	53.3%	2296	
Turtle	Beltrami	Mississippi Hdwtrs	52.0%	3574	
West Sylvia	Wright	Crow River (N Fork)			
Whitefish	Crow Wing	Pine River	65.3%	1532	

36 Priority Lakes



There's Still Time ...to Protect Our Lakes



GAINING MOMENTUM...

Local governments are already making strides to prioritize lakes in One Watershed One Plans, but a comprehensive strategy within a Lakes Conservation Vision would provide guidance on how to invest Clean Water and Outdoor Heritage Funds wisely.

Multiple economic and social benefits hinge on protecting clean water. For example, our tourism, timber, fishing and hunting industries depend on it. Furthermore drinking water for downstream communities flows from our northern lakes.



IS THERE A PRICE TAG FOR OUR LAKES?

Proper funding is needed to continue progress. Our Minnesota way of life depends on the protection of clean water!

