



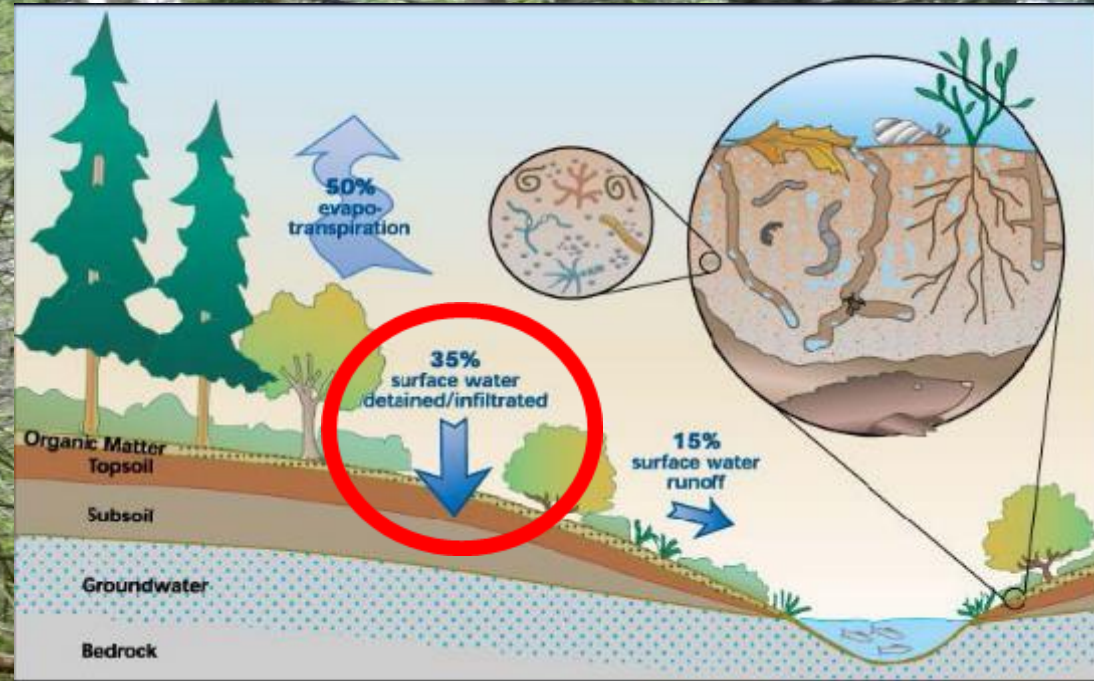
Protecting our Water - One Forest at a Time

Mille Lacs Watershed Management Group

Isle, MN

June 24, 2023

Key Concept – Protect the Sponge!

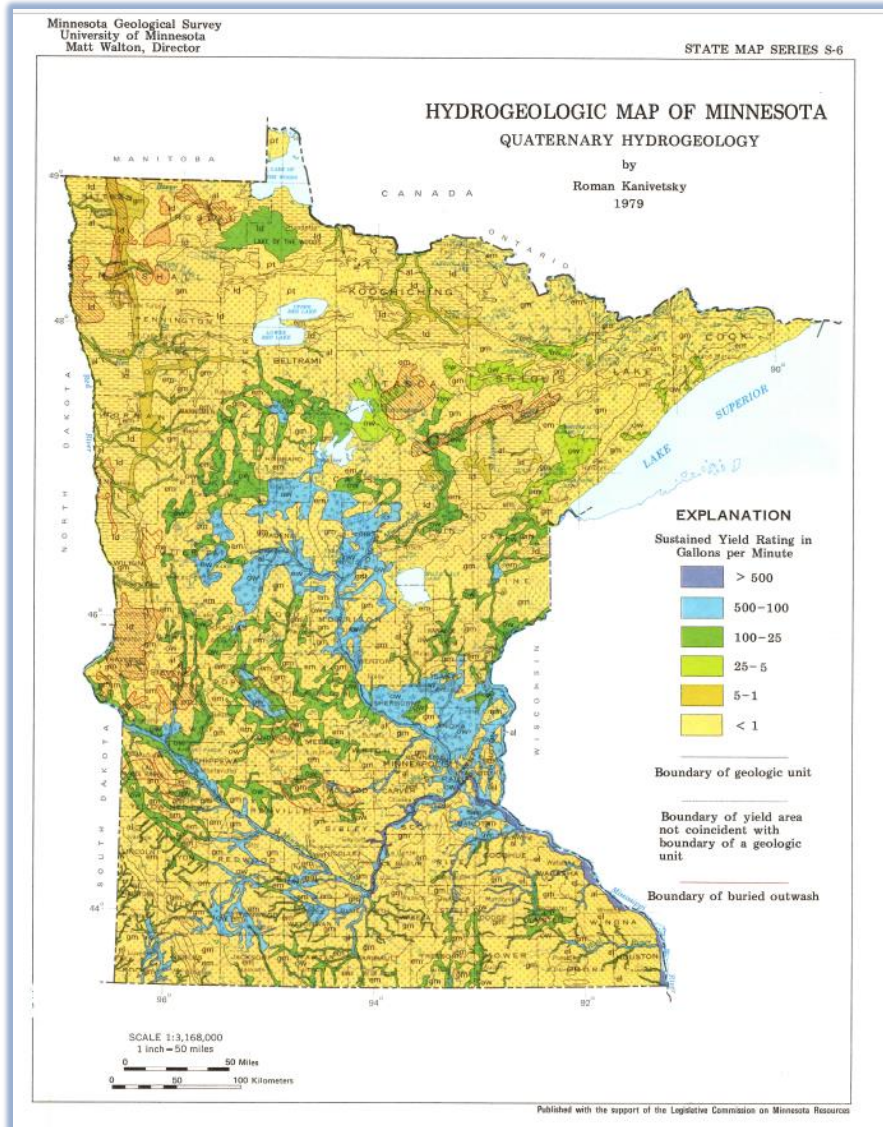


Forests infiltrate water

“Porous forest soils absorb precipitation and deliver clean water through groundwater connections to lakes and streams.”

Pete Jacobson, DNR Fisheries

So do forests really matter?



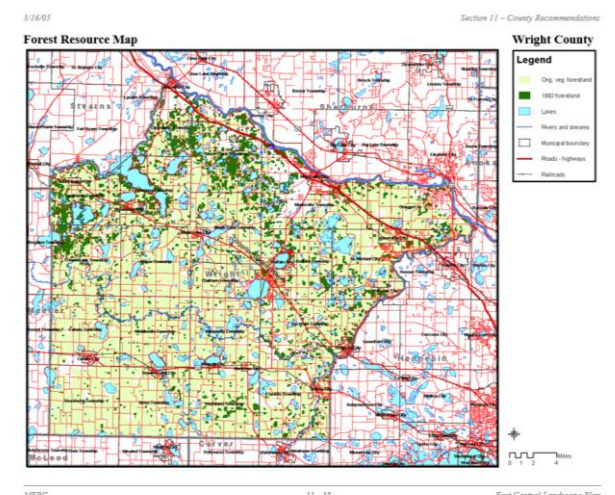
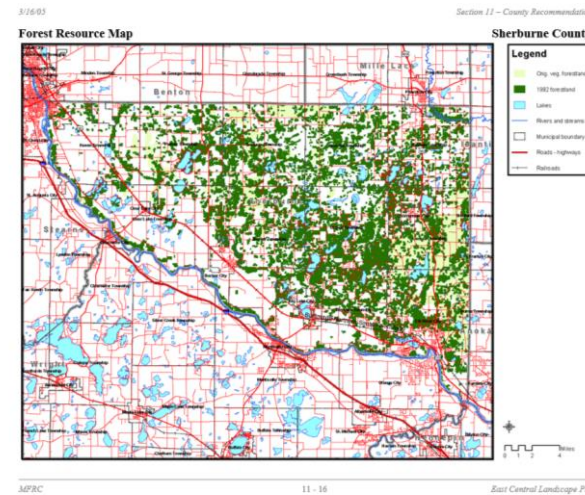
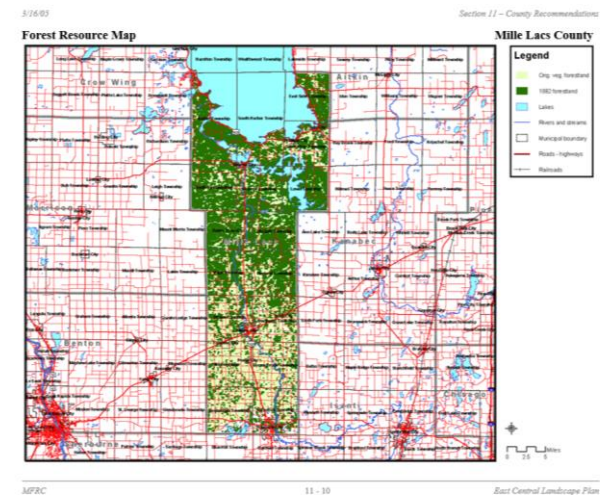
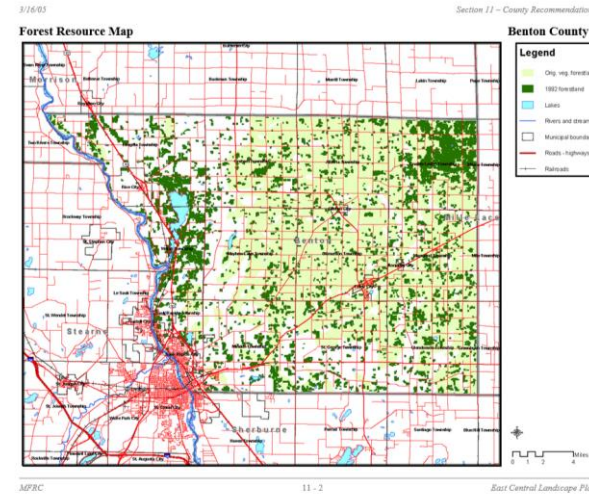
Forests Infiltrate Water!

Historic Land Cover Loss

From a historic land cover perspective, what has happened to forests in your watershed?
Up, down, same

Is increasing forestry/reforestation a relevant way to implement your 1W1P?
Yes or No

How are we addressing forests in our water plans?



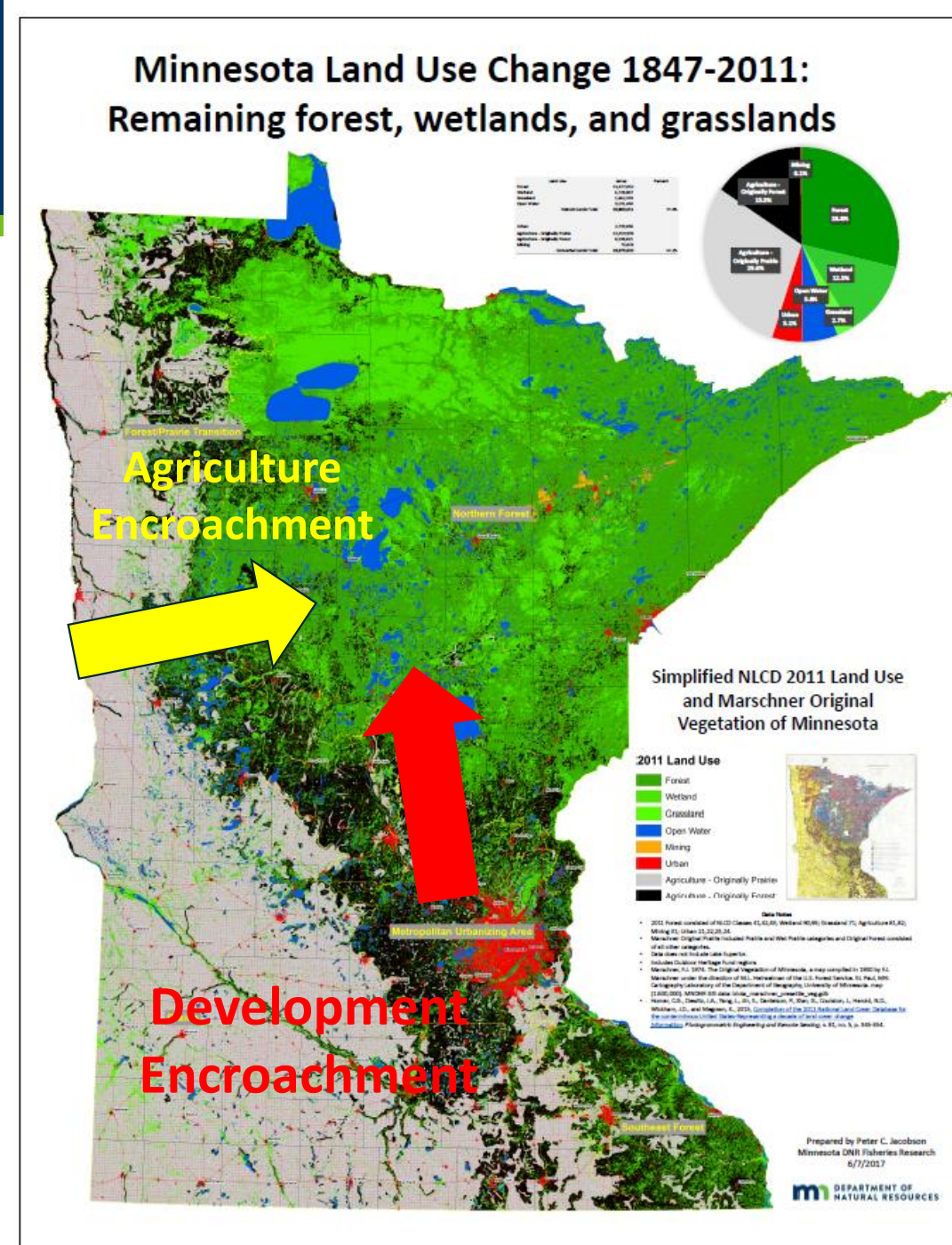
Context - Minnesota's Forests

The MN Forest Land Cover Story

- Total area - 54 M acres
- Presettlement - 32 M acres
- Today - 17 M acres

*How can we deliver
at landscape scales?*

*We don't plan to plan,
we plan implement!*



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

Successful LSOHC Projects:

Camp Ripley Buffer Program (ACUB):
\$10 M (+ \$50 M Federal)

Wild Rice (6+ Phases): \$9 M

Mississippi Headwaters
Board (5 Phases): \$16+ M

Pine-Leech Watershed Protection: \$4 M

Clean Water Act: 1971

- Impaired Waters / Restoration Focus
- **No Protection Methods**

Protection Methodologies:

- Large Lake Screening (2008)
- 75% Watershed Goal: DNR Fisheries (2010)
- Crow Wing County Water Plan (2013)
- "RAQ" Parcel Targeting (2016)

Successful Clean Water Council Projects:

Pine River: \$3 M

Crow Wing River: \$3 M

Rum River: \$3 M

Forest Landscape
Stewardship Plan (DNR)

Funding \$\$:
SFIA, 2C, FFF
Easements,
Cost-Share

One Watershed One Plan (1W1P)

Leech, Pine, Rum, Redeye, Miss. Headwaters, Sauk, Crow (north fork)

WRAPS (MPCA)

Priority Lakes/Watersheds

- Larger, Unimpaired, High Quality
- <75% Protected (at risk)

1W1P
Watershed
Based Funding,
Increased SWCD
Capacity \$\$

Targeted Implementation to Landowners

- Sell the "Toolbox", Landowner's Choose!

Minnesota:

Headwaters State

HUC 4 Level:

- Upper Miss Basin

HUC 8 Level – 1W1P/LSPs:

- Major Watersheds

HUC 10 Level:

- Subwatersheds

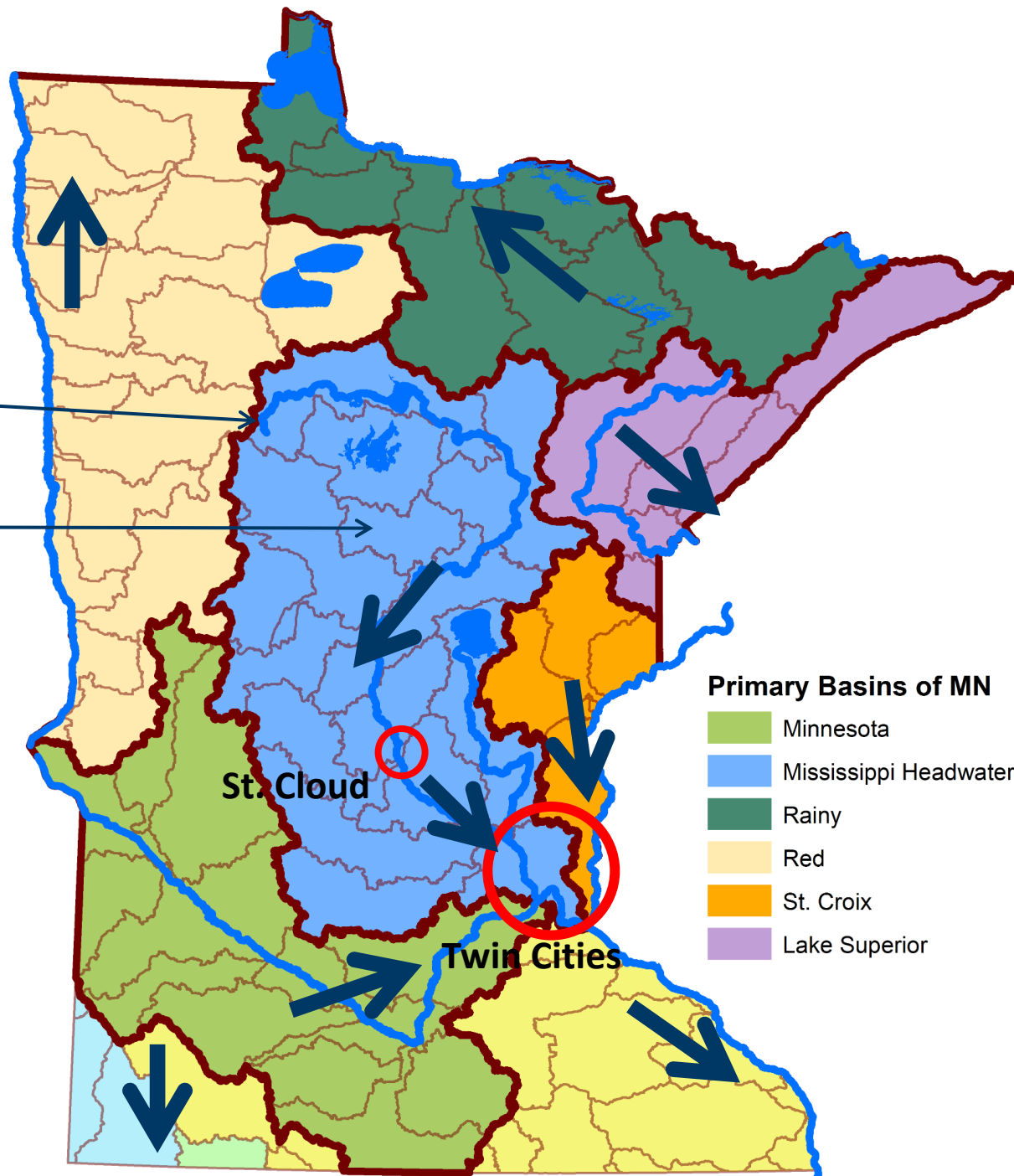
HUC 14 Level:

- Minor watersheds

Parcel Level:

- Landowners

*Drilling down for
shared priorities!*



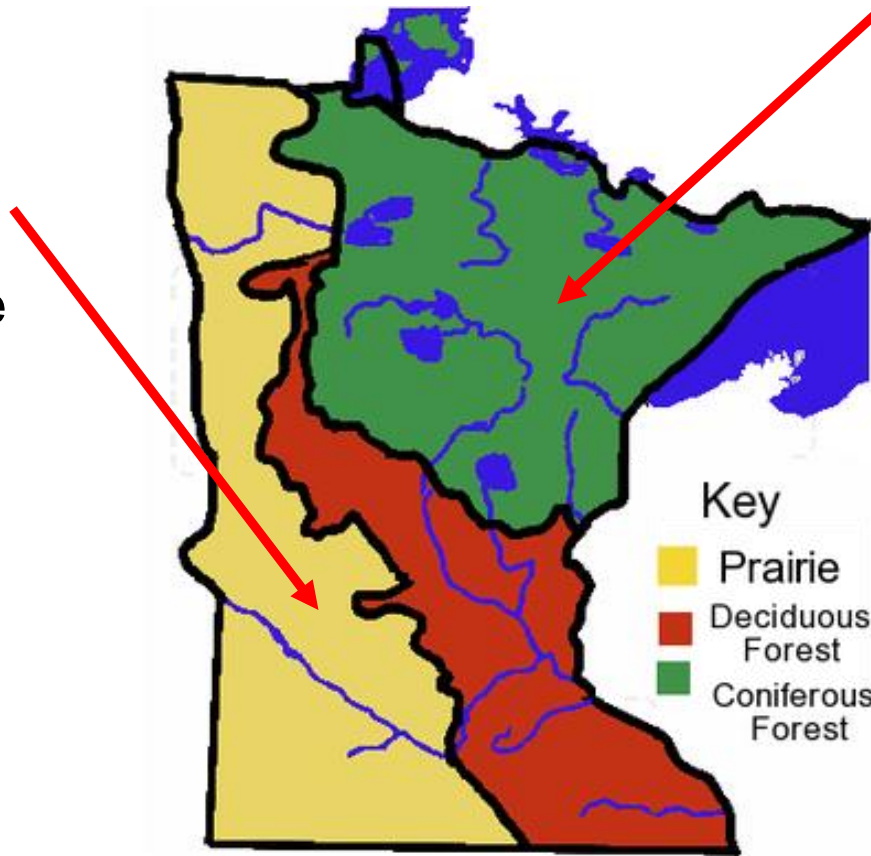
“Water, in all its uses and permutations, is by far the most valuable commodity that comes from the forest land that we manage, assist others to manage, and/or regulate.”

National Association of
State Foresters

Landscape Context for Conservation in MN

Restoration

- Water Quantity Drivers
- Streams/ Ditch Based
- Ag Based
- Lake-bed Clay Soils
- High Land Disturbance
- Little Public Land
- Watershed Districts
- **High Land Values**

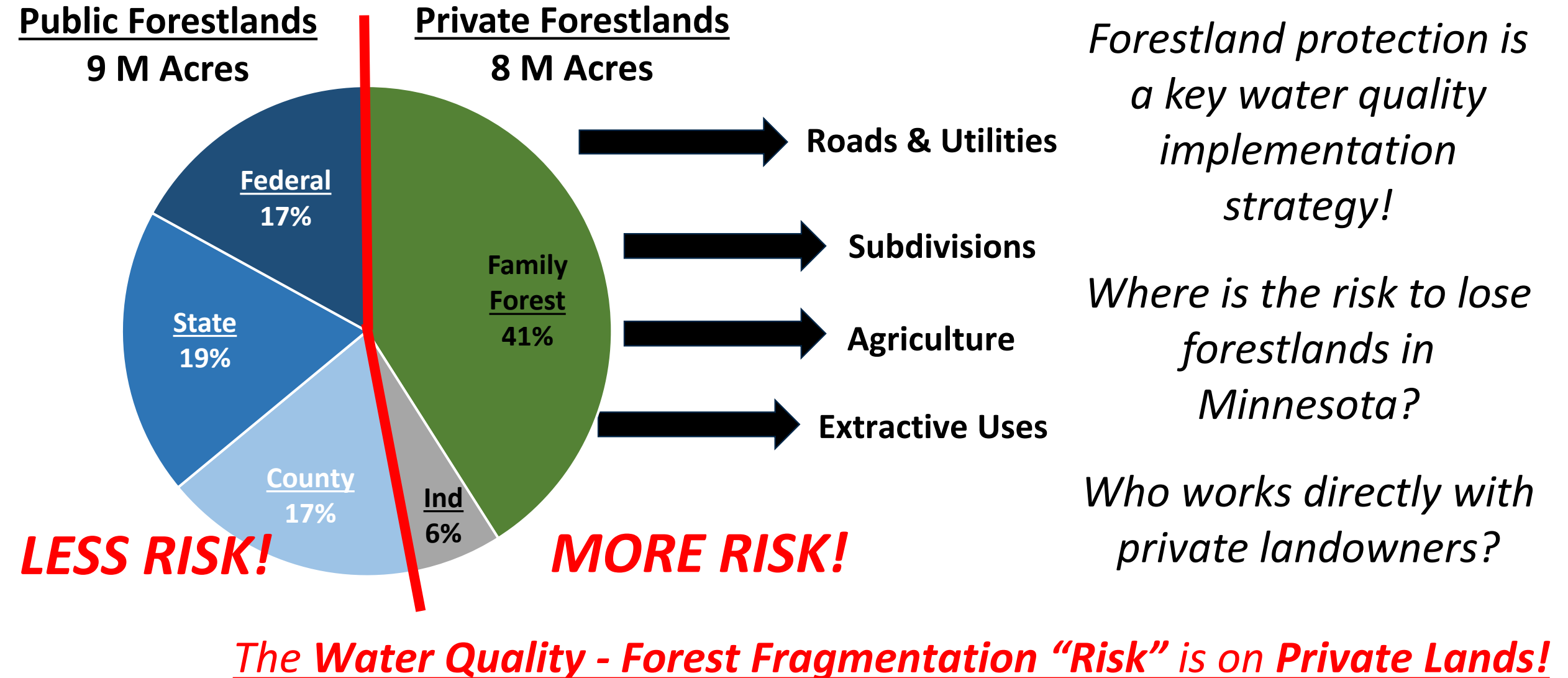


Protection

- Water Quality Drivers
- Lake Based
- Forest Based
- Outwash/Till Soils
- Low Land Disturbance
- Lots of Public Land
- Lake Associations
- **Low Land Values = Better Return on Investment**

(Better ROI)

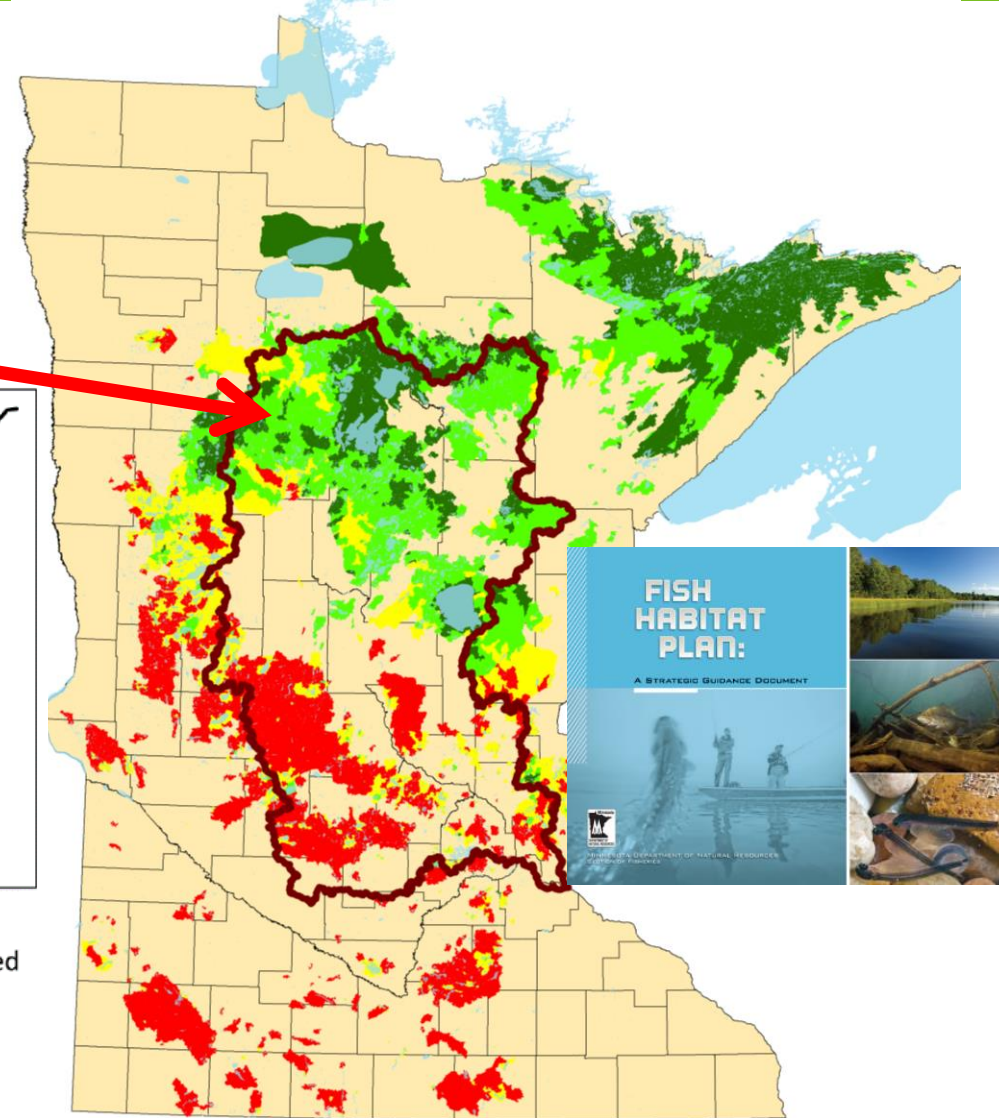
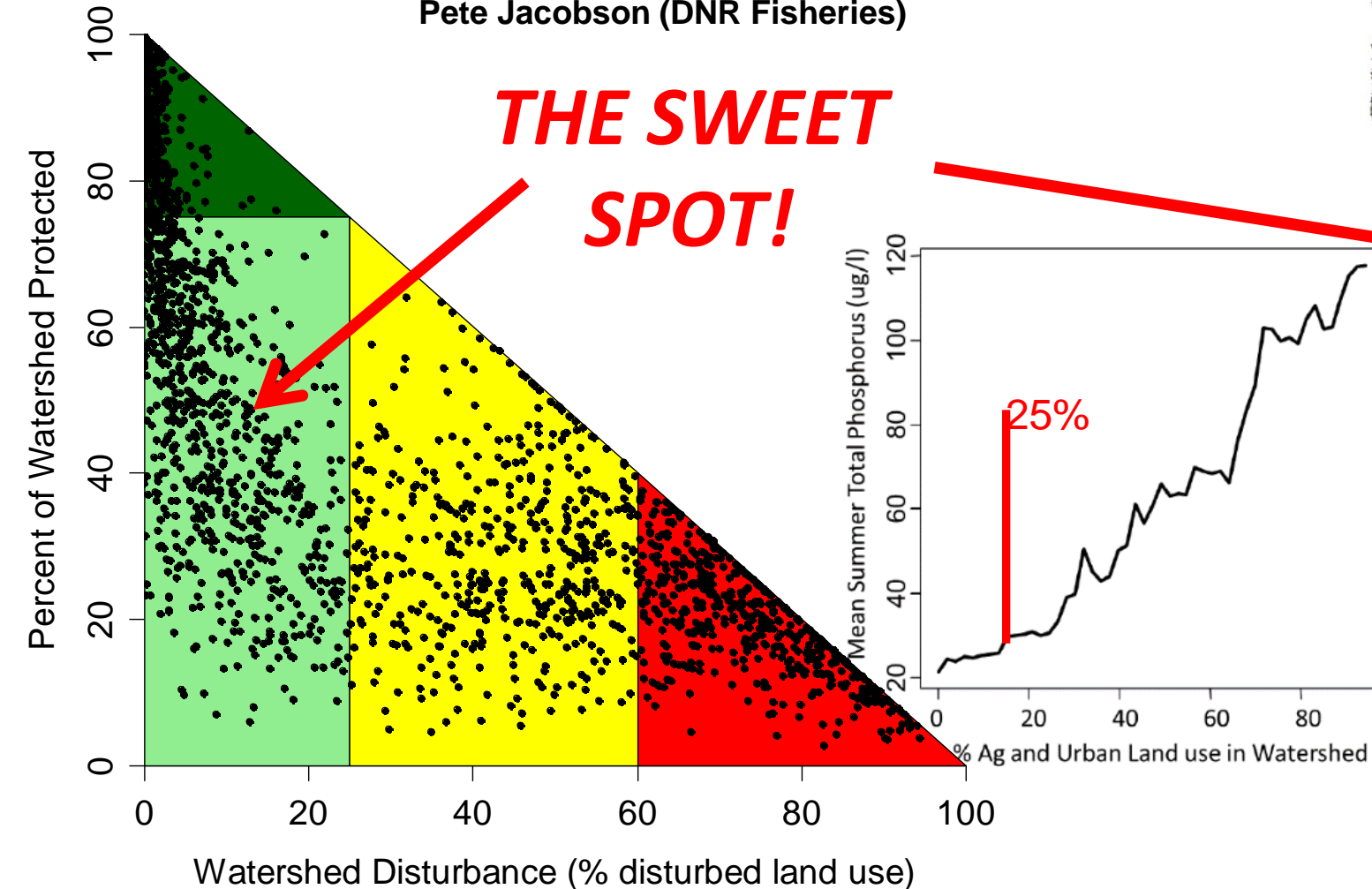
Why Watershed Protection? Why Private Lands?



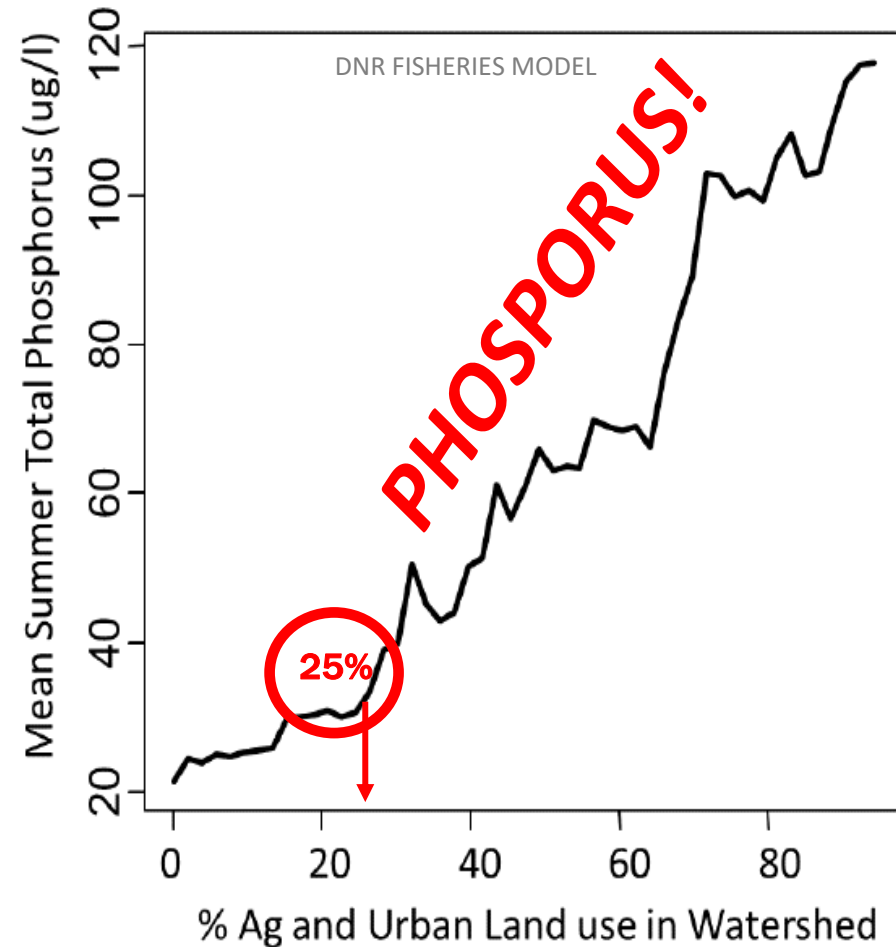
Is there a tipping point for watershed disturbance?

“Priority” = Intersection of Quality & Risk

Pete Jacobson (DNR Fisheries)



What is Forestland “Protection”?



Because: Over 25% Watershed Disturbance can cause increased phosphorus concentrations in lakes

Therefore: Protect 75% of the Watershed to protect lakes

Defining “Protection”

Public Waters + Public Land + Wetlands (WCA) + Forest Incentives (SFIA, CRP) + Conservation Easements

Legislatively created tools designed for local implementation!

Protection doesn't mean you can't manage!



Keep Working Forests Working

State Policy Direction - PTM

Prioritize (by WATER)

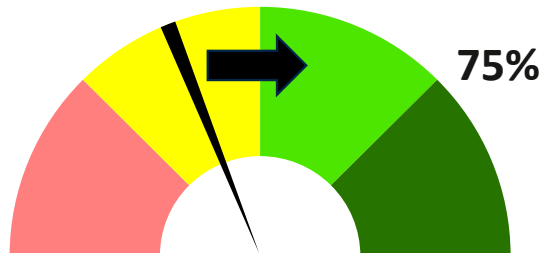
- Subwatersheds (HUC 10s)
- Minor watersheds (HUC14s)
- Tool = Minor Watershed Assessment

Target (by LAND)

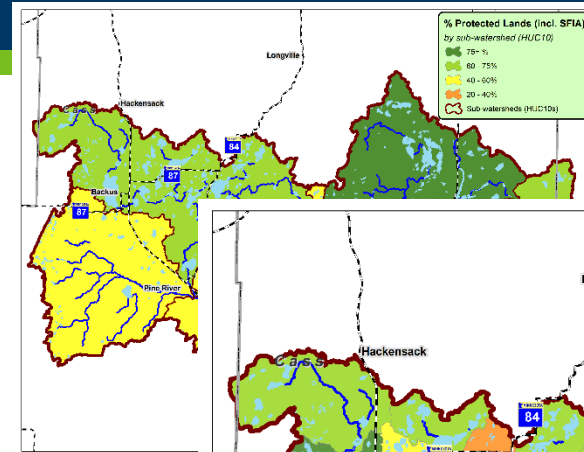
- Private forestlands – parcel level
- Acreage threshold (>20 acres)
- Tool = RAQ – Riparian, Quality, Adjacency

Measure (by NEEDLE)

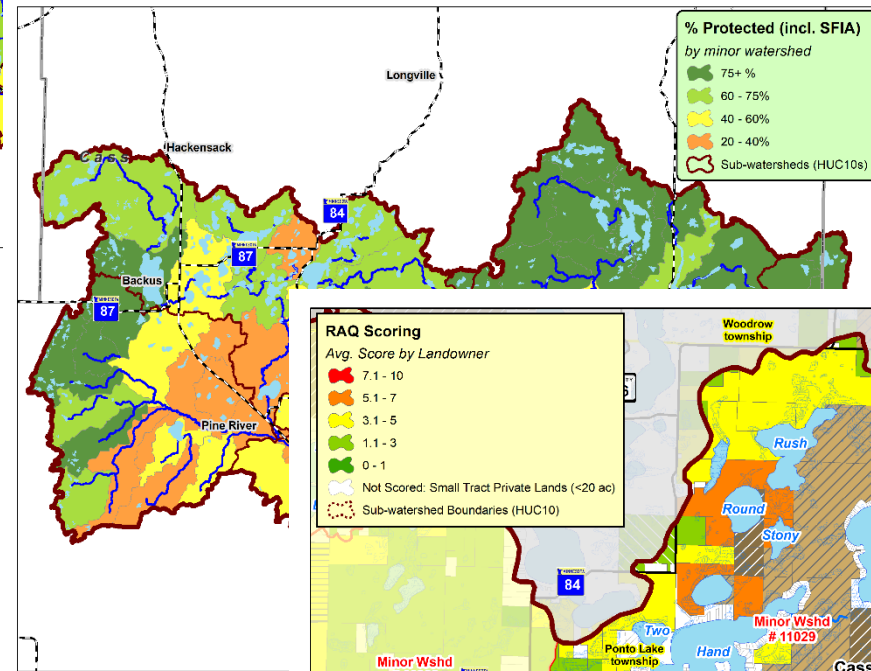
- Move the needle toward Protection!



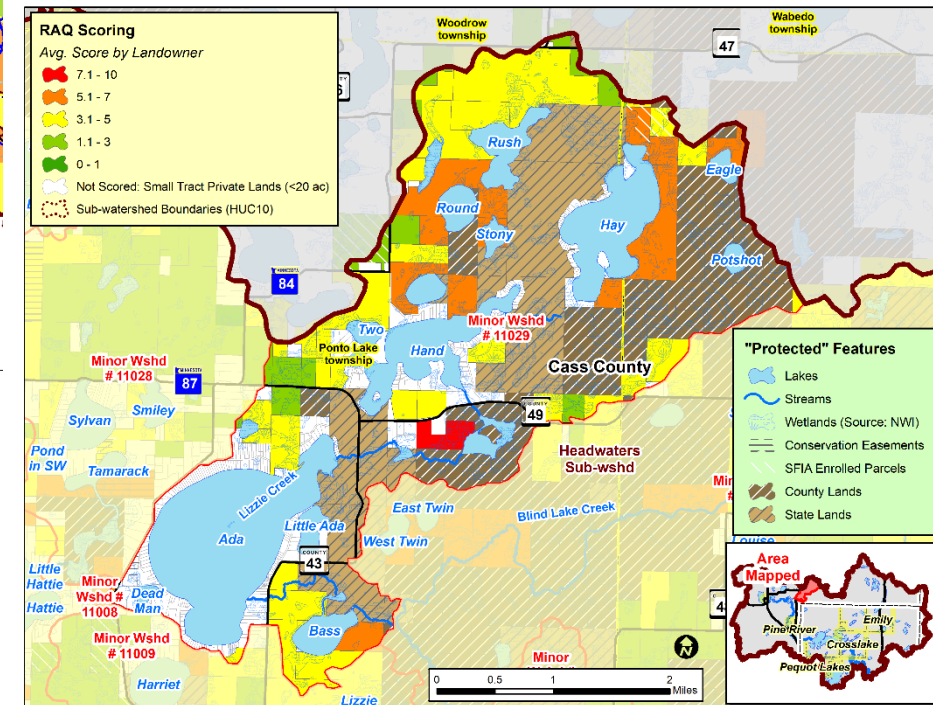
HUC 10



HUC 14



Parcel



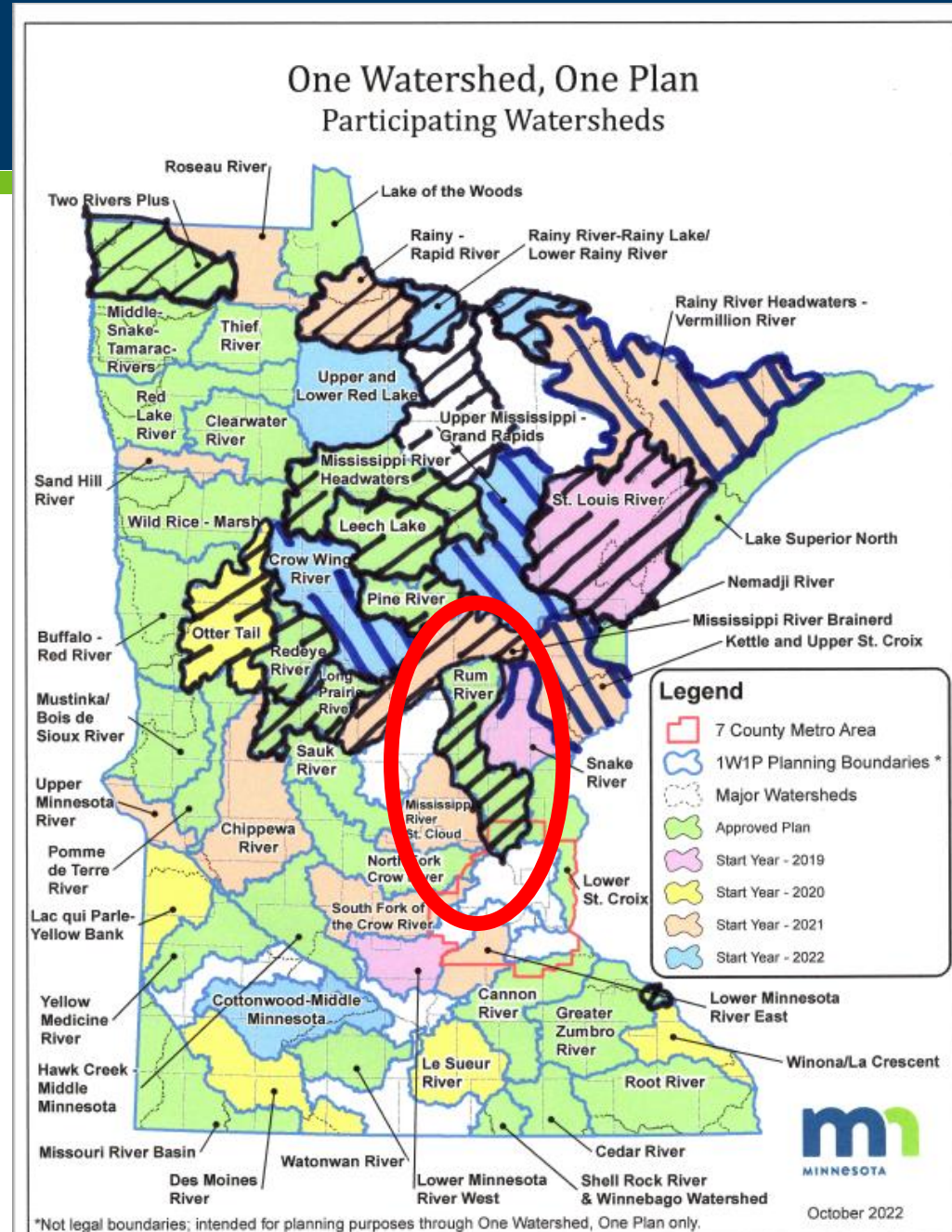
Drilling down!

LSP/1W1P Integration

“Implementation”
Protected Forested Watersheds
= Forest Economy \$\$\$



“Implementation”
Clean Water
= Tourism Economy \$\$\$



*Rum River Watershed
Landscape Stewardship Plan*



Aitkin SWCD Crow Wing SWCD Isanti SWCD Mille Lacs SWCD
Sherburne SWCD Mille Lacs County Environmental The Nature Conservancy

mi DEPARTMENT OF
NATURAL RESOURCES

mi BOARD OF WATER
AND SOIL RESOURCES



What is a LSP?

A forest mgmt. plan based on HUC 8 watersheds:

- Focused planning process – 3 mtgs, 4-5 months.
- Developed local team/process. Low cost. 3 parts:

Part 1 – *Where have we been?* Analysis, context.

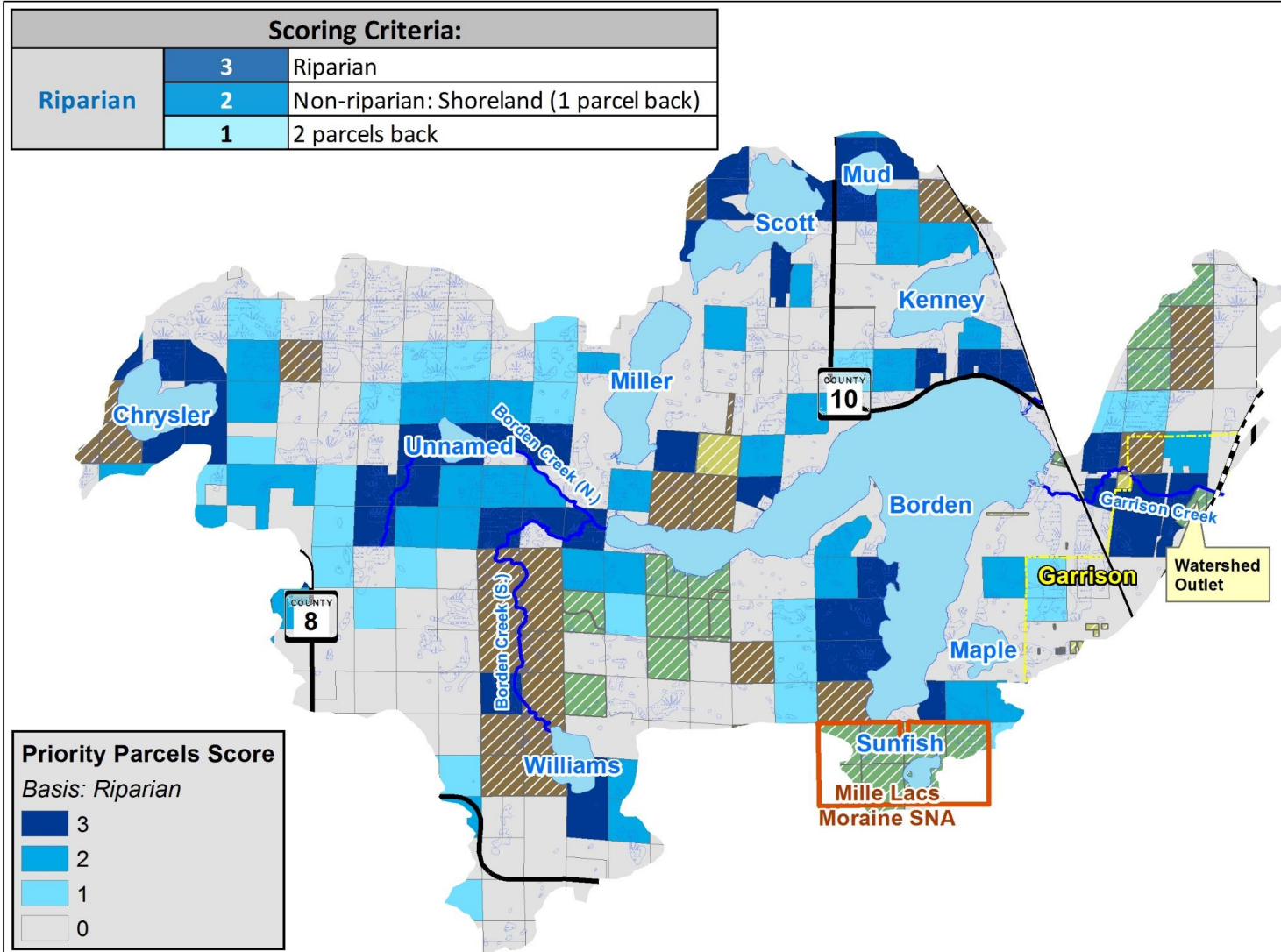
Part 2 – *Where do we want to go?*

- Vision.
- Goal 1. Forestland protection.
- Goal 2. Promote forest stewardship.

Part 3 – *How to make it happen?* Coordination.

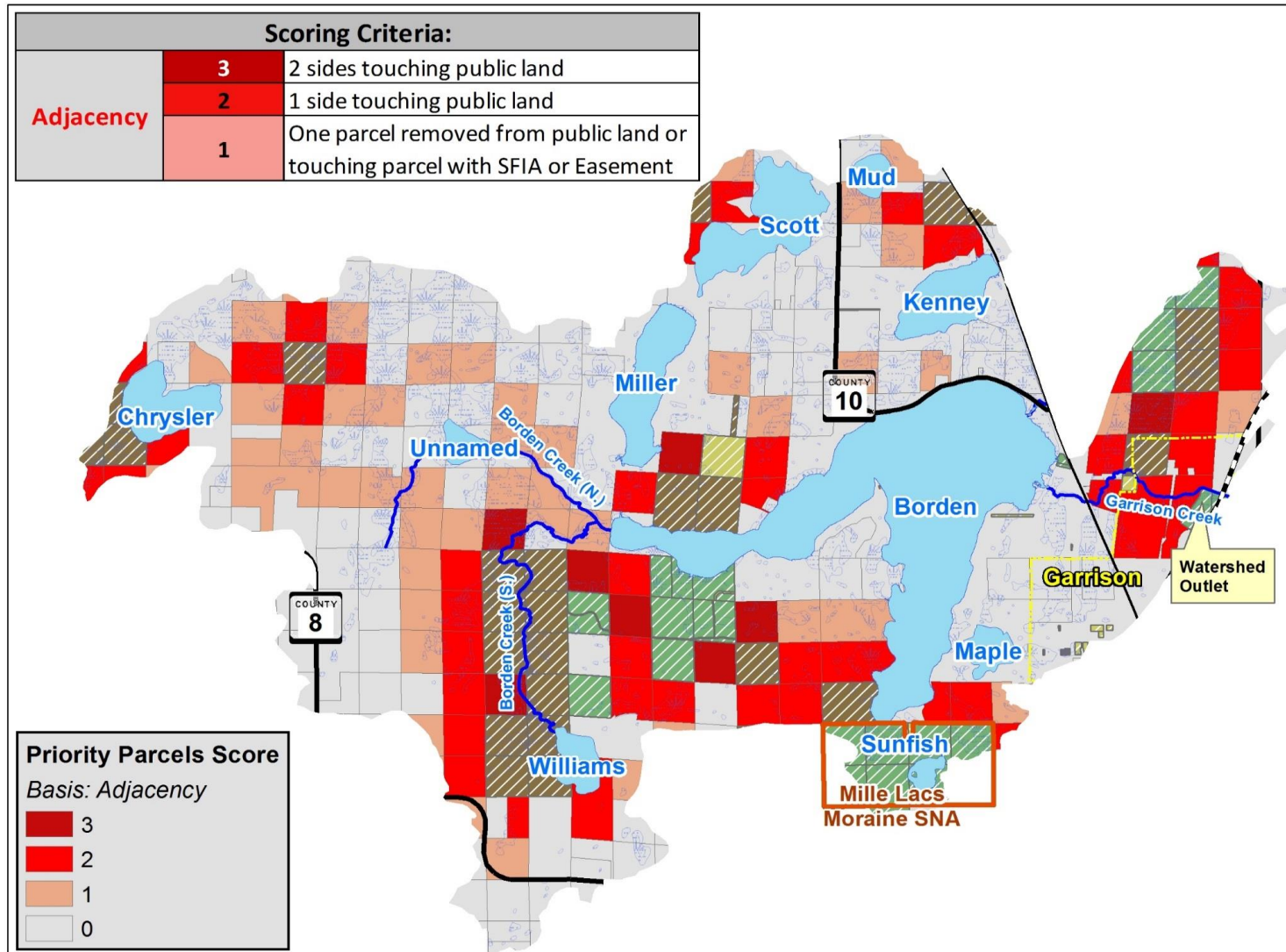
***Integrate planning processes by
preparing LSPs in advance of 1W1Ps.***

RAQ 'em up! R = Riparian



Scoring Criteria:		
<u>R</u> iparian	3	Riparian
	2	Non-riparian: Shoreland (1 parcel back)
	1	2 parcels back
<u>A</u> djacency	3	2 sides touching public land
	2	1 side touching public land
	1	One parcel removed from public land or touching parcel with SFIA or Easement
<u>Q</u> uality*	3	1 point for each feature that the parcel touches: such as High or Outstanding Biodiversity (upl. or aqu.), Wild Rice L,
	2	
	1	

RAQ 'em up! A = Adjacency to Public Lands

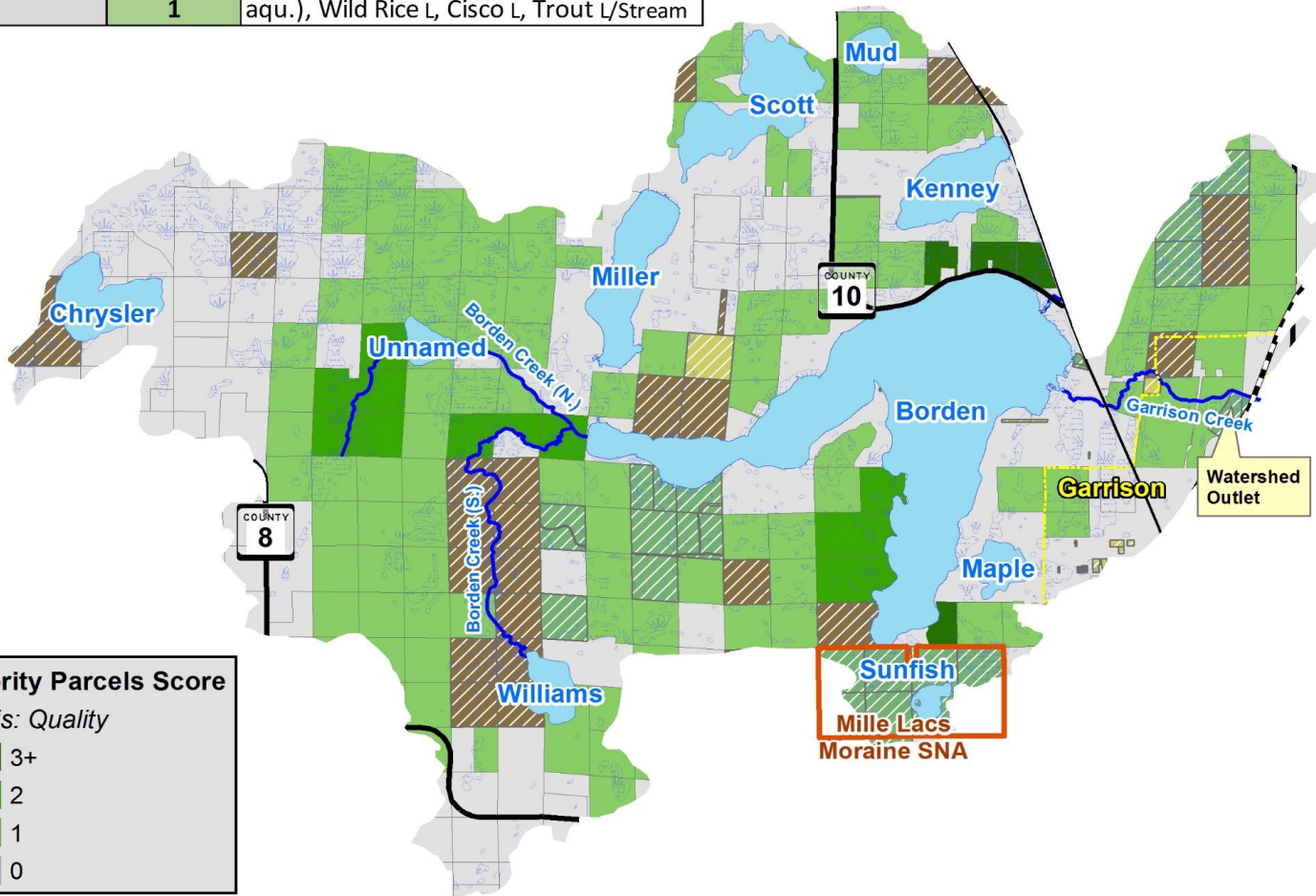


Scoring Criteria:		
<u>R</u> iparian	3	Riparian
	2	Non-riparian: Shoreland (1 parcel back)
	1	2 parcels back
<u>A</u> djacency	3	2 sides touching public land
	2	1 side touching public land
	1	One parcel removed from public land or touching parcel with SFIA or Easement
<u>Q</u> uality*	3	1 point for each feature that the parcel touches: such as High or Outstanding Biodiversity (upl. or aqu.), Wild Rice L,
	2	
	1	

RAQ 'em up! Q = Quality

Scoring Criteria:

Quality	3	1 point feature that parcel touches: High
	2	or Outstanding Biodiversity (upl. or
	1	aqu.), Wild Rice L, Cisco L, Trout L/Stream



Quality*

3

2

1

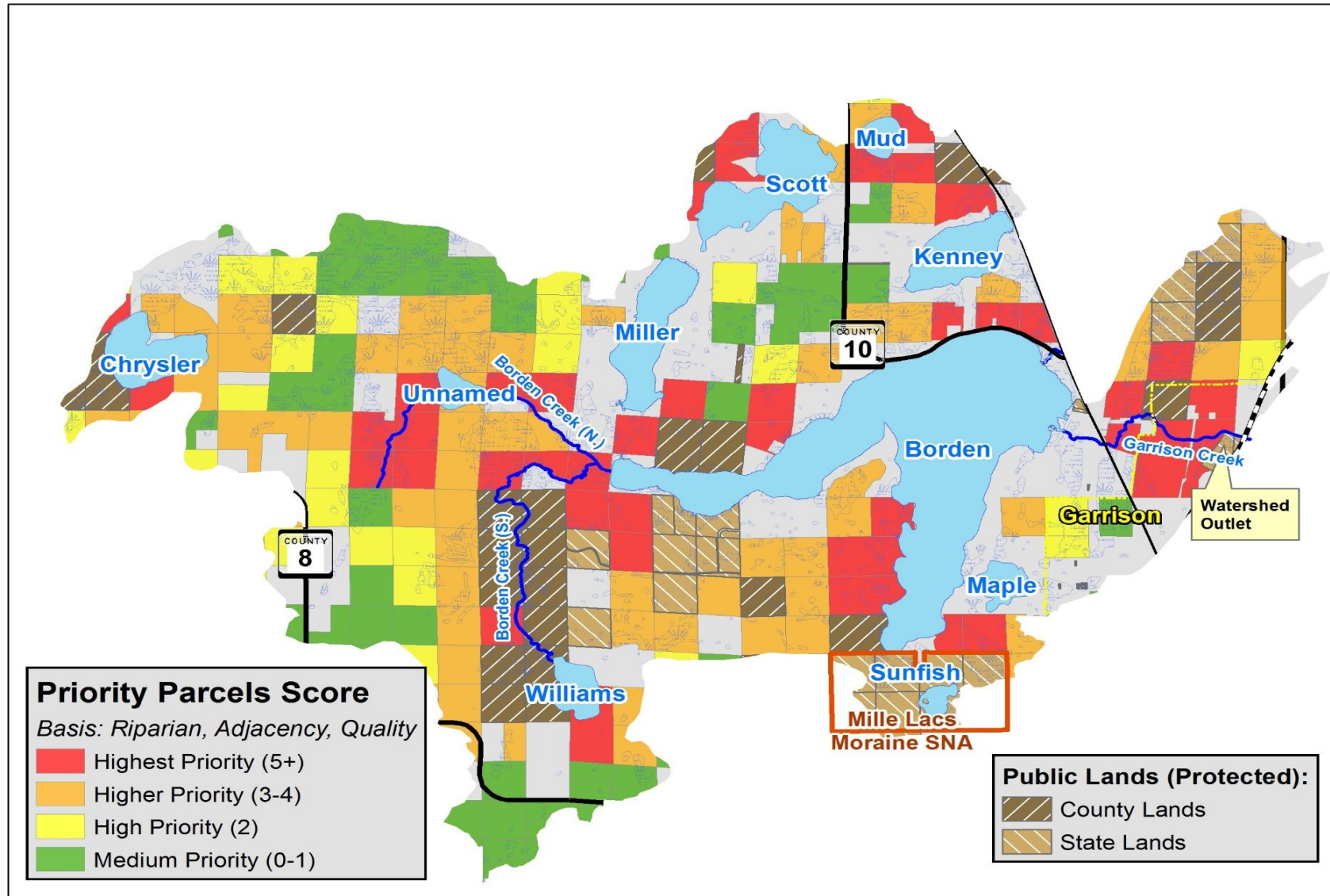
1 point for each feature that the parcel touches: such as High or Outstanding Biodiversity (upl. or aqu.), Wild Rice L,

"Quality" can be...

Anything Locally Important, such as:

- Cisco/Tullibee Lakes
- Trout Lakes/Streams
- Outstanding Terrestrial Biodiversity
- Wild Rice Lakes/Streams
- Rare Species
- Old Growth Forests
- Important Bird Areas
- Mussel Habitat
- Fisheries Habitat: native muskies, walleye spawning, smallmouth
- MN Wildlife Action Network data

RAQ 'em up! Total of RAQ Components (Max = 10)



Landowner Table with RAQ Scores & Costs

Acres	Scoring				Property / Landowner Information					
	Total Score	Riparian	Adjacency	Quality	Parcel #	Owner Name	Land Value	60% of Land Value = Cost!	Cost/Acre	Cost/Acre/Pt
87.0	6	3	2	1	240124402C00889	WILDERNESS OF MINNESOTA	\$394,400	\$236,640	\$2,721	\$453
56.7	6	3	2	1	660212302000009	WHITNEY, LYMAN H JR REV TRUST	\$178,500	\$107,100	\$1,888	\$315
57.0	3	3	0	0	760121405000009	MACRAE, MARGARET TRUST AGR	\$142,500	\$85,500	\$1,500	\$500
41.8	6	3	2	1	240124402AA0889	MILLE LACS RV PARK LLC	\$111,000	\$66,600	\$1,593	\$265
39.7	6	3	1	2	660083200000009	BAILLIF, HAROLD R & SUSAN A	\$85,400	\$51,240	\$1,290	\$215
39.8	4	0	3	1	660164100000009	DALBEC, MARK	\$76,000	\$45,600	\$1,146	\$287
30.5	5	3	2	0	760121304000009	MACRAE, MARGARET TRUST AGR	\$75,000	\$45,000	\$1,478	\$296
40.5	3	2	0	1	660151200000009	WILDERNESS POINT, ASSOC	\$73,200	\$43,920	\$1,084	\$361
40.4	3	0	2	1	660153300000009	HUTCHISON, GERALD D & KIM	\$73,200	\$43,920	\$1,088	\$363
35.2	5	3	2	0	760013402000009	FREE, JAMES W & MARGERY L	\$71,300	\$42,780	\$1,215	\$243
40.5	4	0	3	1	660152300000009	WILDERNESS POINT, ASSOC	\$70,400	\$42,240	\$1,044	\$261
39.9	6	2	3	1	660162200000009	NASH, KATHLEEN B	\$68,400	\$41,040	\$1,029	\$171
39.8	5	2	2	1	660162100000009	NASH, KATHLEEN B	\$68,400	\$41,040	\$1,031	\$206
37.6	4	2	1	1	660144300A00009	MUCHA, PETER & JOAN E JNT TRU	\$67,600	\$40,560	\$1,080	\$270
39.8	5	1	3	1	660162400000009	NASH, KATHLEEN B	\$67,200	\$40,320	\$1,012	\$202
39.9	3	0	2	1	660163100000009	KREIBICH, RICHARD W & SANDRA	\$66,200	\$39,720	\$996	\$332
40.8	3	1	1	1	660152400000009	WILDERNESS POINT, ASSOC	\$62,000	\$37,200	\$912	\$304
35.9	6	3	1	2	660074100B00009	BAILLIF, HAROLD R & SUSAN A	\$59,600	\$35,760	\$995	\$166
38.4	5	3	0	2	660074400000009	LAVENDER SPRINGS TREE FARM LL	\$58,800	\$35,280	\$920	\$184
40.0	7	3	3	1	660174300000009	JOHNSON, STEPHEN A & MARTIN	\$56,400	\$33,840	\$847	\$121
39.7	5	2	2	1	660093100000009	BERNIE LIVING TRUST DATED 3/7/1	\$55,100	\$33,060	\$832	\$166
26.8	4	3	1	0	760014400000009	SICHAK, JAMES	\$45,800	\$27,480	\$1,025	\$256
39.9	3	0	2	1	660164300000009	LESKEE, H JAMES TRUST	\$45,600	\$27,360	\$687	\$229
37.3	3	0	2	1	660163400A00009	MARRIN, DANIEL M & LINDA M	\$45,500	\$27,300	\$733	\$244
26.8	3	3	0	0	760014301A00009	SICHAK, JAMES	\$38,900	\$23,340	\$871	\$290
							\$1,293,840	\$1,161	\$268	






Example: Pine River One Watershed, One Plan

Goal 1. Protection

Surface
Ground
Forestry

GOAL: Protect and enhance forest cover, outstanding lake water quality, habitat, surficial sand aquifers, and downstream drinking water by promoting 75% land protection in targeted minor watersheds.

***Forestland
Protection is
Goal #1!***

Implementation Action:	Source	Program	Level	Targeted sub-watersheds (HUC10):	Prioritized Resources (lakes or watersheds):	10 year Measurable Outcome:	Lead & Supporting Entities:	Funding Source	Timeframe	Total 10-year Cost
					Tier 1 Lakes: Ossie,					
Promote private forestry stewardship planning (Figure X – toolbox).	LSP		2	Whitefish, Lower Pine, Headwaters	Tier 2 Lakes: Ada, Bertha, O'Brien, Pelican, Roosevelt, Rush-Hen, Ruth (Table 6-4). Use RAQ maps from the LSP for targeting priority parcels.	10 plans per year	CWSWCD, CSWCD, DNR	CSWCD, CWSWCD, DNR	2019-2029 \$20,000 each year	\$200,000
Promote the Sustainable Forest Initiative Act to provide annual incentive payments to encourage private landowners to keep their wooded areas undeveloped.	LSP		2	Same as above	Same as above	75% minor watershed protection (Table 6-4 on next page)	CWSWCD, CSWCD, DNR	SFIA	2019-2029 \$92,312.70/yr*	\$923,127* *Not included in total below because it is already allocated from the general fund
Permanently protect undeveloped land with conservation easements.	LSP		2	Same as above	Same as above	Same as above	CWSWCD, CSWCD, DNR, MLT, NWLT	NWLT, TNC, MLT, LCCMR, CWF, LSOHCC, DNR	2019-2029 \$670,104/yr	\$6,701,042 (Table 6-4)
Permanently protect undeveloped land with acquisitions.	1W1P		3	Same as above	Same as above	Same as above	DNR, Trust for public lands	DNR, LCCMR, LSOHCC	2019-2029	Combined with easements above
Maintain and align forestry roads to minimize forest fragmentation.	WRAPS		1	Same as above	Same as above	Same as above	CWCo, CCo	CWCo, CCo - current funding	2019-2029	
Goal Total									\$690,104/yr	\$6,901,042

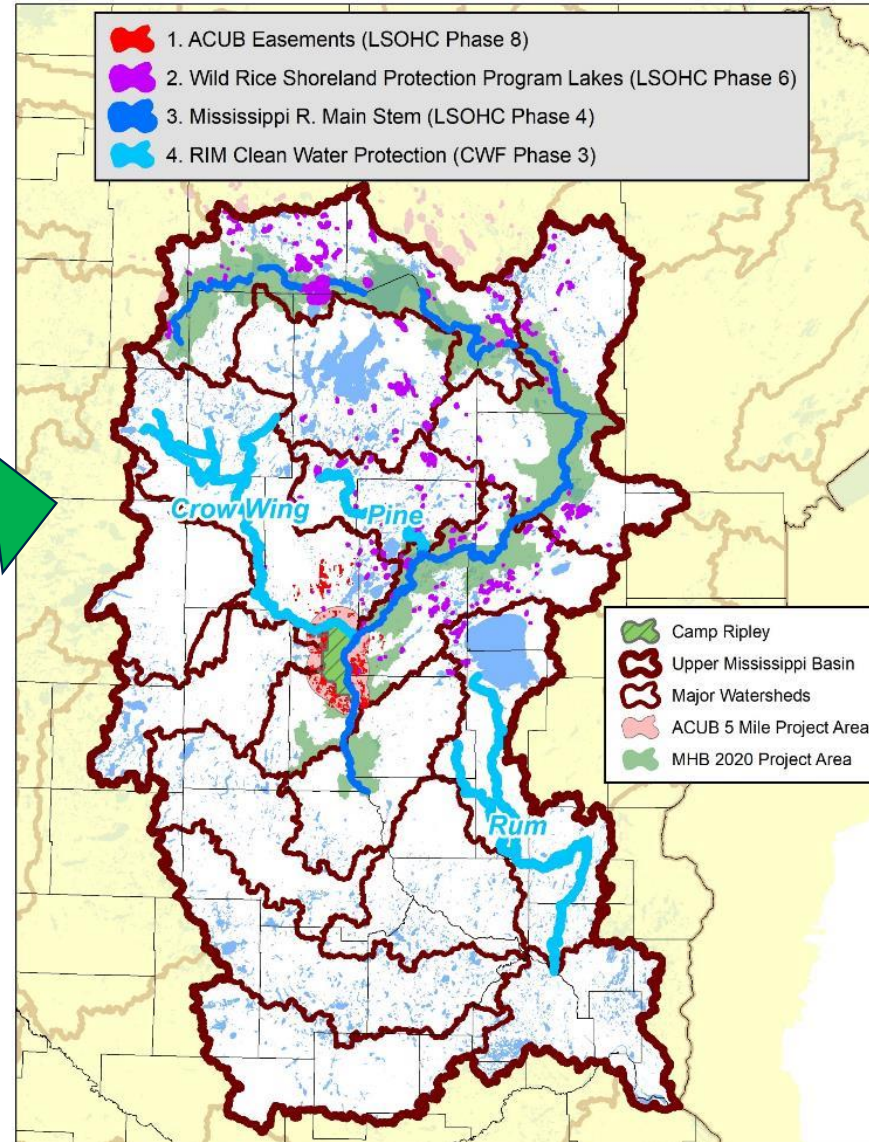
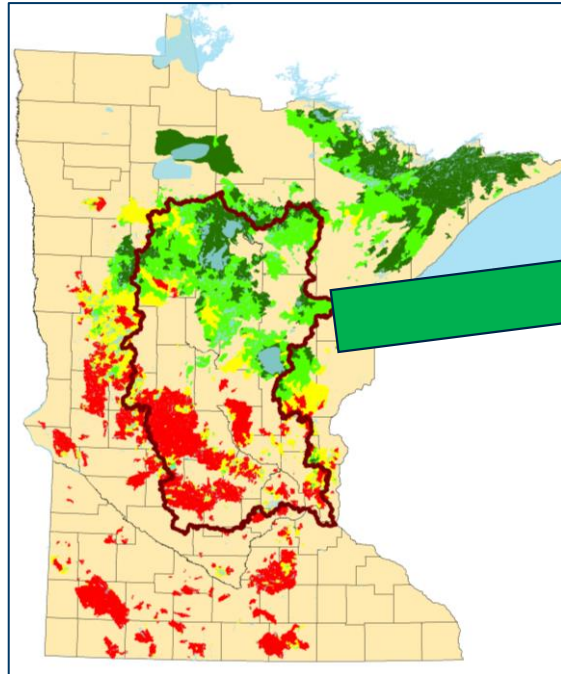
PFM Implementation Toolbox



Landowners choose!

Source: Dan Steward, BWSR. Referenced in the USFS publication, "***Landscape Stewardship Guide***".

Forestland Protection Projects (2005 – present)

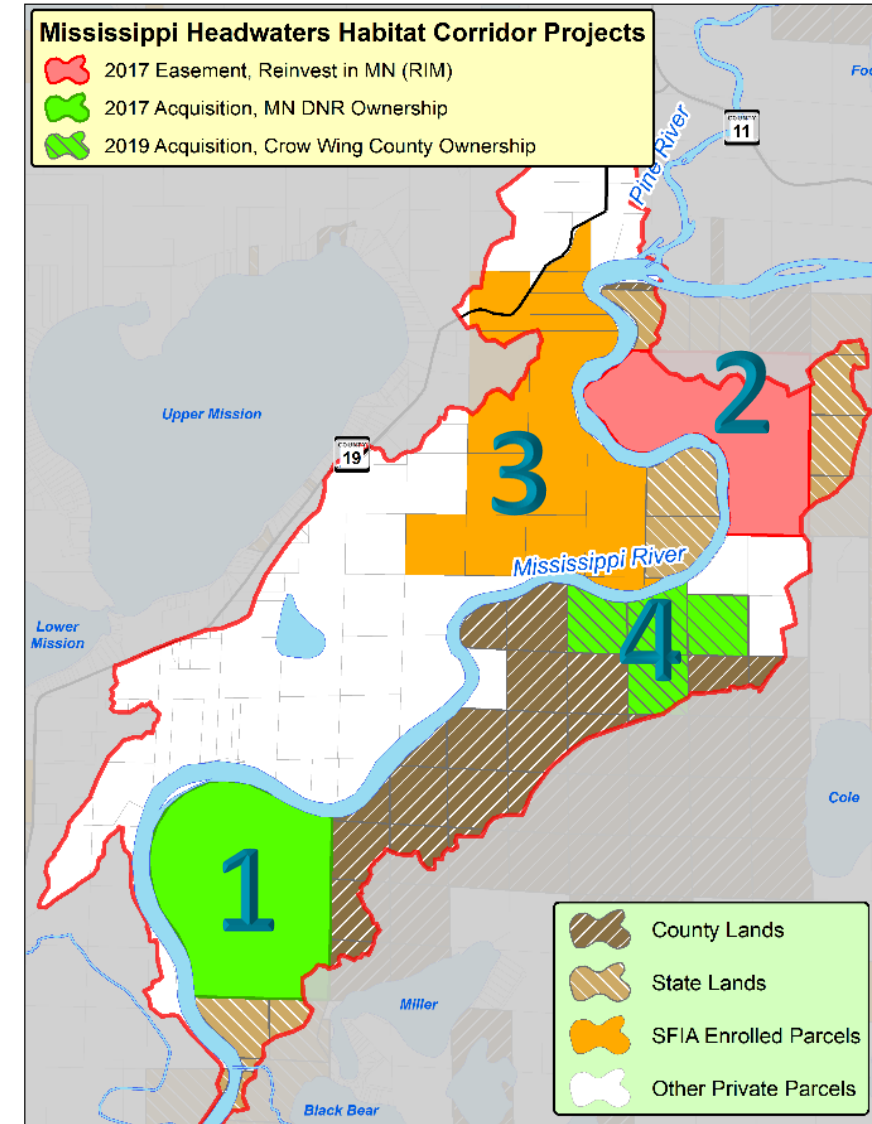
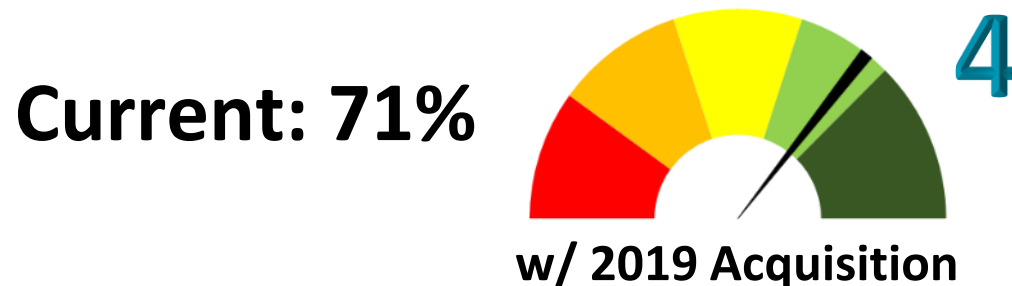
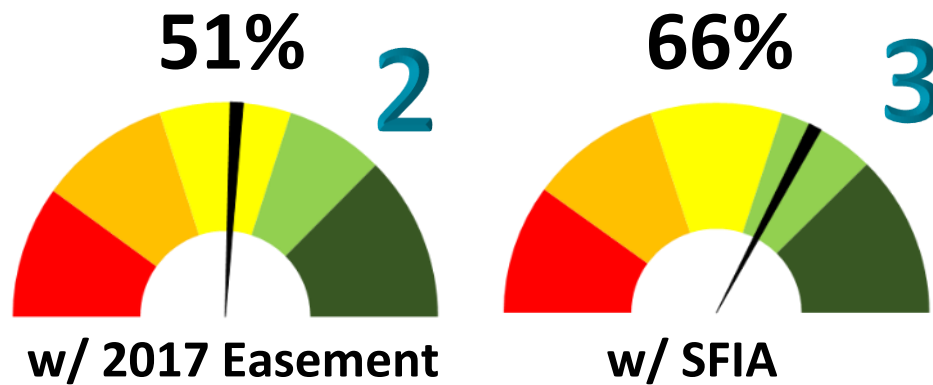
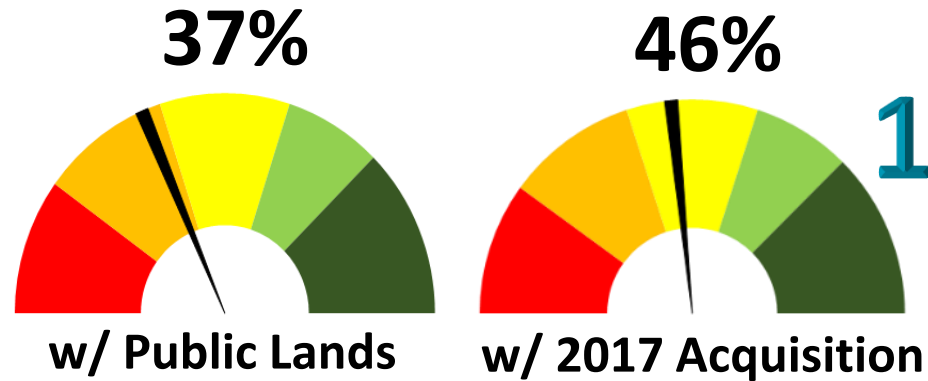


Accomplishments so far...

Forestland Protection Projects

1. ACUB Project:
\$60 M – Fed + LSOHC
2. Wild Rice Project:
\$9 M – LSOHC
3. Mississippi River Corridor:
\$16+ M – LSOHC
4. RIM Clean Water – **Rum Wd**:
\$9 M – CWC
5. Leech / Pine Watershed
\$4 M - LSOHC

Implementation Success Story: Mississippi River



Pine-Mississippi River Confluence

SUCCESS STORY



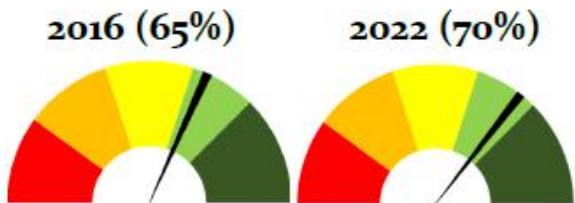
Protection Change from 2016 - 2022

% by minor watershed

- Gain of 10+ %
- Gain of 2 - 10%
- Little Change (+/- 2%)

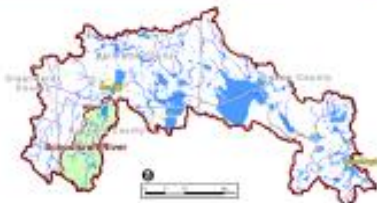
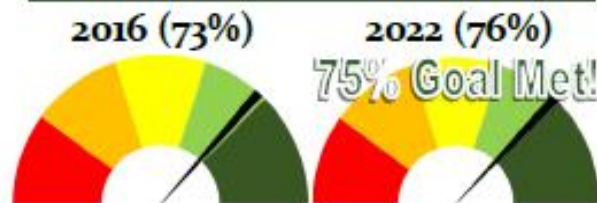


Key Facts:



- **County:** Crow Wing
- **Watershed Context:**
Major (HUC08): Pine River, Miss. R. Brainerd Sub-watersheds (HUC10): Little Pine R., City of Brainerd-Mississippi River
Minor Watersheds: 11051, 10084
- **Primary Water Resources:**
Confluence of Pine River with Mississippi River
- **Project Goals:**
Clean Water, Habitat, Downstream Source Water
- **Geomorphic Context:** Outwash, Moraine
- **Partners/Programs:** BWSR RIM, SFIA
- **Conservation Tools:** Easement, SFIA
- **Fund:** Clean Water Fund, Lessard-Sams Outdoor Heritage Fund
- **Other Notes:**

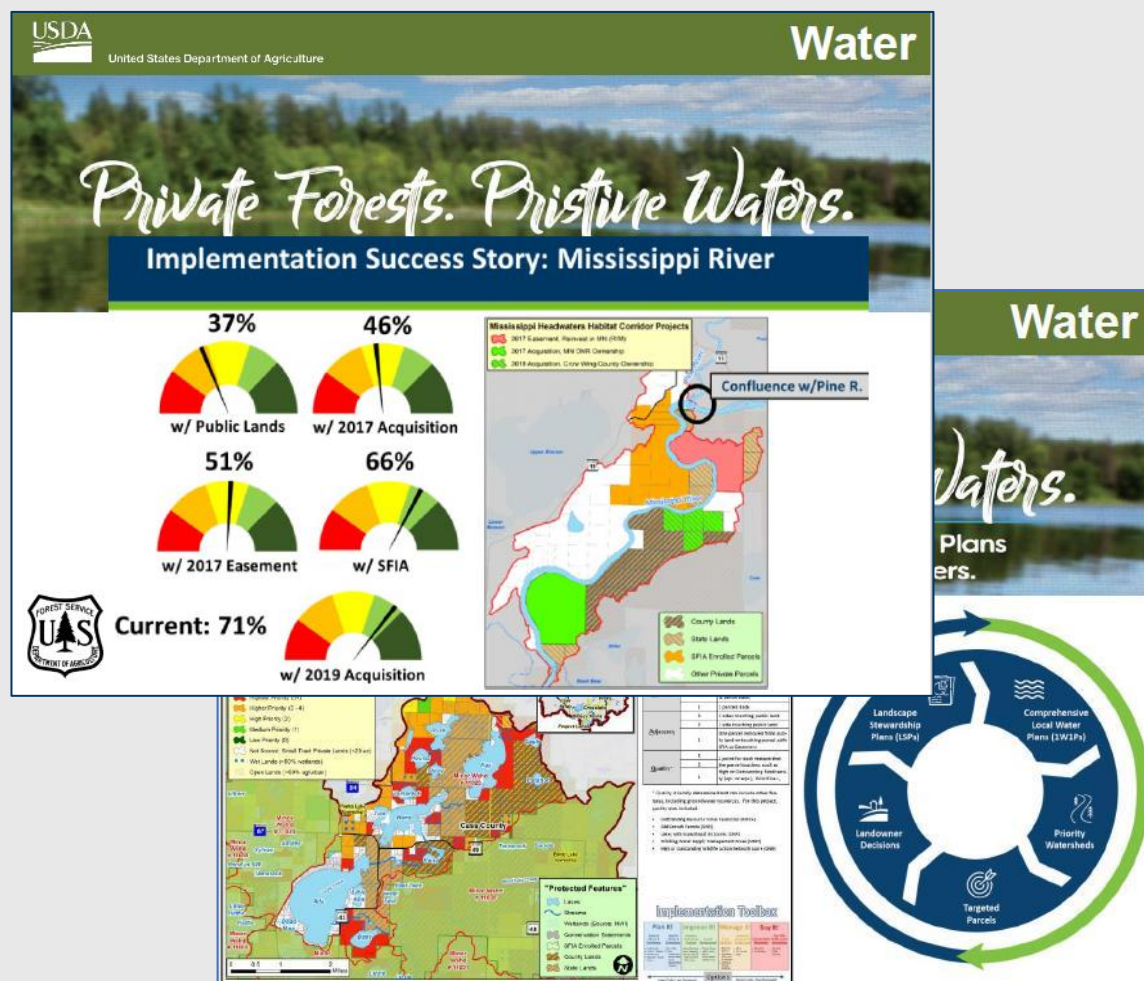
Upper Schoolcraft River SUCCESS STORY



- **County:** Hubbard
- **Watershed Context:**
Major (HUC06): Mississippi River Headwaters
Sub-watershed (HUC10): Schoolcraft River Minor Watersheds: 7080, 7074, 7075, 7076, 7077, 7078, 7079, 7088
- **Primary Water Resources:**
Schoolcraft River (Exception IBI Scores), Hattie/Beauty Lakes
- **Project Goals:**
Clean Water, Habitat, Downstream Drinking Water
- **Geomorphic Context:** Lacustrine, Moraine (top of watershed)
- **Partners & Programs:** The Conservation Fund, BWSR NIM (Clean Water Fund), SFIA
- **Conservation Tools:** Fee-Title, Easement, SFIA
- **75% Goal Met!**

US Forest Service Review – MN DNR Forestry PFM

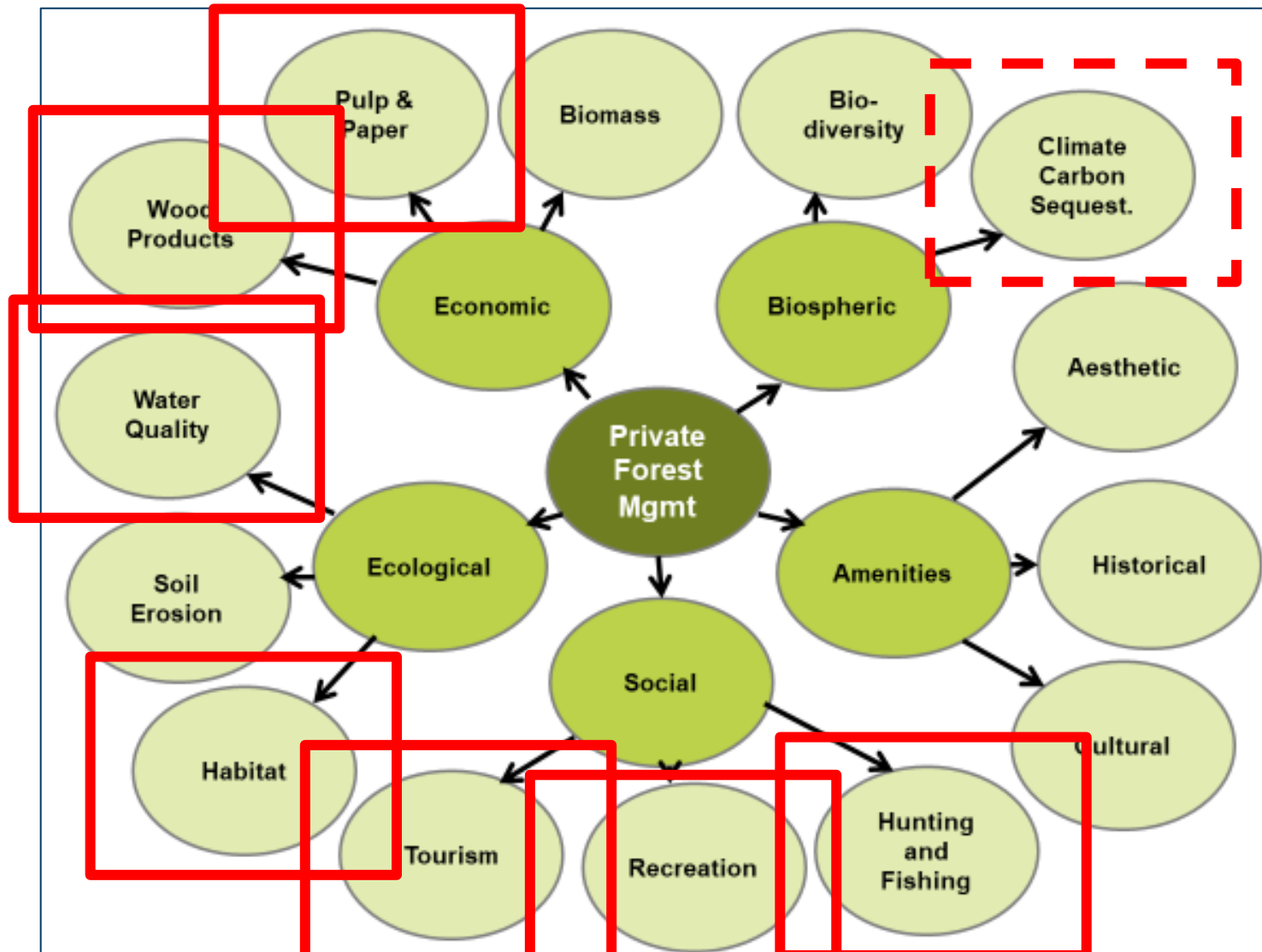
Washington's 5-year review of US FS Programs in 20-State NE Region



PFM Partnership – A National Model

- **Out of 20 NE states, Minnesota was recognized as the premier example** on how the Forest Stewardship Program can achieve its conservation outcomes around of water, wildlife, wildfire resiliency and job/rural prosperity.
- Minnesota has combined traditional private forest landowner assistance with a Landscape Stewardship perspective, linking that to water quality.
- This work has resulted in a watershed-based approach to land use and water quality planning that maintains or improves water quality through strategic forest investments.

Landscape Scale Implementation – What's next?

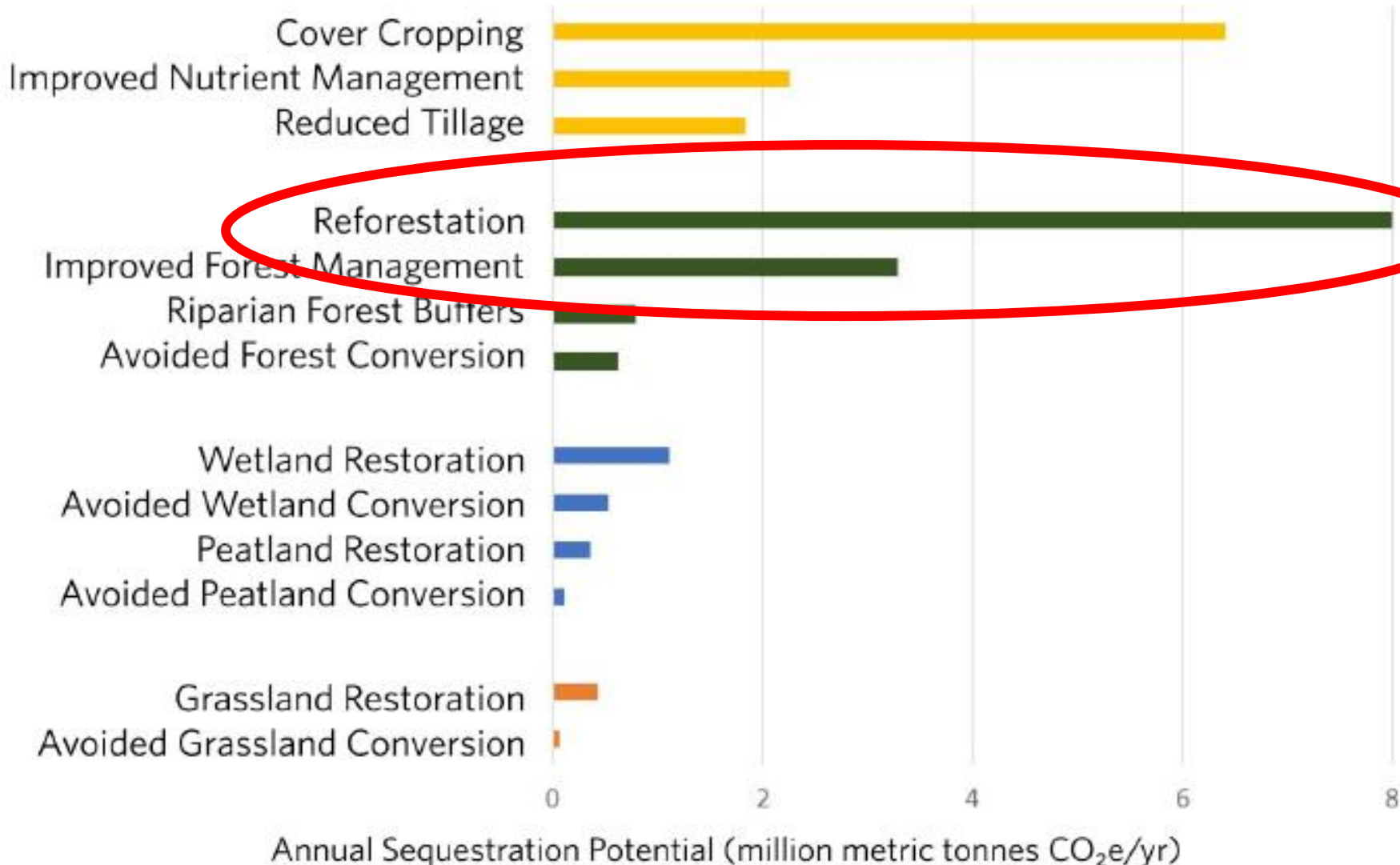


"Dramatically increasing our influence and impact on keeping forests as forests – requires new approaches for new realities."

Landscape Stewardship Initiative
USDA Forest Service

*Minnesota's goal to reforest 1 M acres.
Protect water – sequester carbon*

Why Reforestation? – Carbon + Water Quality



Reforestation is a key carbon implementation strategy!

Where did we lose forestland cover in Minnesota?

Who works directly with private landowners?

Reforestation for Carbon: Do the Math!

Reforestation of 1 million acres is a BIG job!

Minnesota total area	54 M acres
Presettlement forest cover	32 M acres
Current forestland cover	<u>17 M acres</u>
Forestland cover loss	15 M acres
Amount lost on private lands (est)	14.5 M acres
<u>Proposed Reforestation</u>	
• Current rate – 6,000 acres/year	166 years
• 1 M acres at 50,000 acres/year	20 years



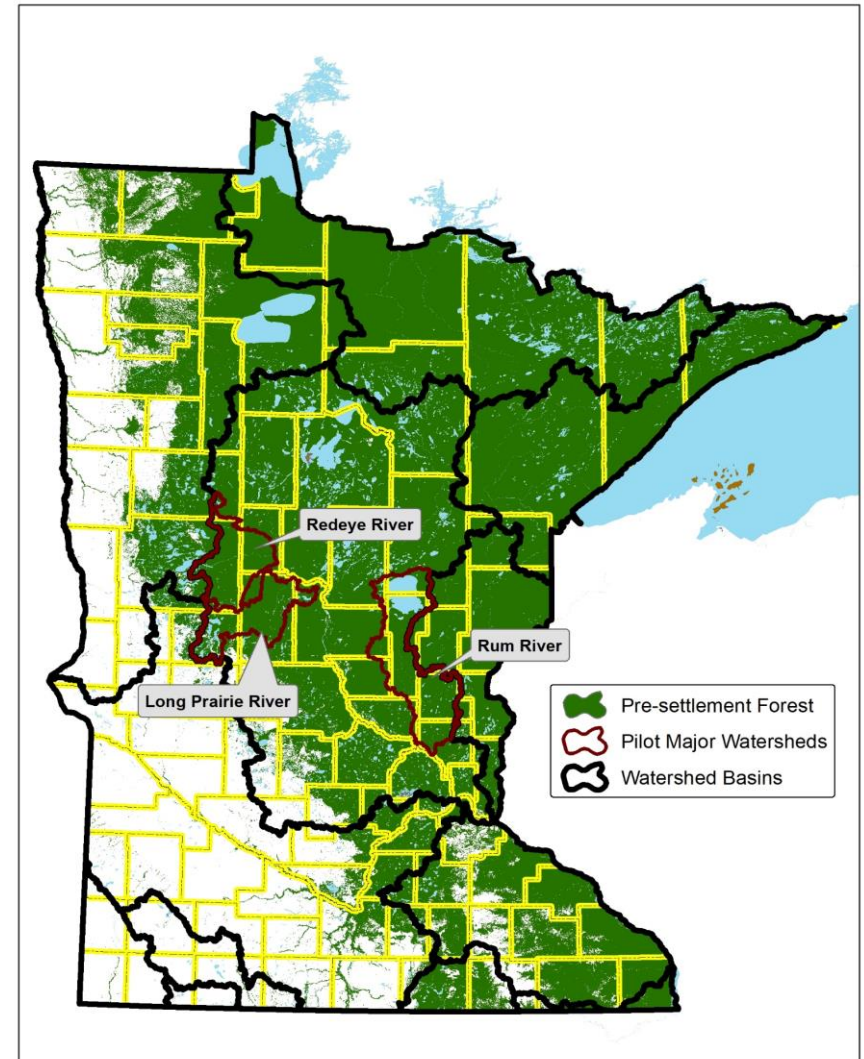
We need an “All Hands on Deck” strategy!

LCCMR – 3 Pilot Watersheds

The three pilot watersheds in the Upper Mississippi Basin all have:

- Lost significant amounts of forestland cover and forest habitat,
- Have greater amounts of marginal, less productive croplands, often with sandier soils
- Tributary to the Twin Cities drinking water supply.

- Rum River watershed – Aitkin, Crow Wing, Mille Lacs, Morrison, Benton, Kanabec, Sherburne, Anoka SWCDs and Mille Lacs Band.
- Long Prairie watershed – Douglas, East Otter Tail, Todd, Morrison SWCDs.
- Redeye River watershed – East Otter Tail, Wadena, Todd, Becker SWCDs.



LCCMR Pilot Project Outcomes

Project Approach

- Partnership development – DNR Forestry + BWSR + SWCDs + Mille Lacs Band + Consulting Foresters.
- Increase the collaborative capacity and equipment of 14 SWCDs and the Mille Lacs Band to assist landowners in tree planting.
- Provide technical assistance to 600 landowners over the 3-year timeframe.

Outcomes:

- 300 forest stewardship plans, 390 practice plans, and 780 tree planting verification checks.
- 1,390 acres of conservation easements.
- 27,000 acres of land enrolled in SFIA Program.
- 15 tree planters, site prep equipment purchased.
- 1,875,000 seedlings planted.
- 3,125 acres of open lands reforested.
- 7,437 metric tons of carbon sequestered per year over a 20-year timeframe.

53 North Central Lakes Tax Base **\$5.1 Billion**

Forest Industry
Jobs



Forestry Habitat
Game/Non-Game



Fish Habitat



Lake Tourism
Economy



Minneapolis/ St.
Paul
Drinking Water



Tax Base
Protection



What can you do?

"Players"	Political	Administrative	Financial	Technical
SWCDs				
County P & Z				
Cities				
Townships				
Lake Association				
Landowners				
Private Businesses				
State Agencies				
Tribal Govts				
Federal Agencies				

Issue: _____

Roles: "X" = Lead Role "S" = Supporting Role

Q/A – Discussion



Landscape Stewardship Works!



Primary components of Private Forestry Management on a landscape level