

A Wetland for Every Occasion

*a strategy for watershed
improvement*

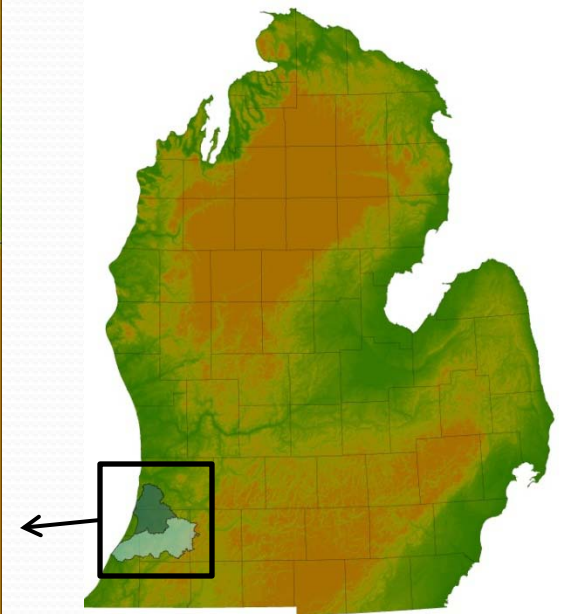
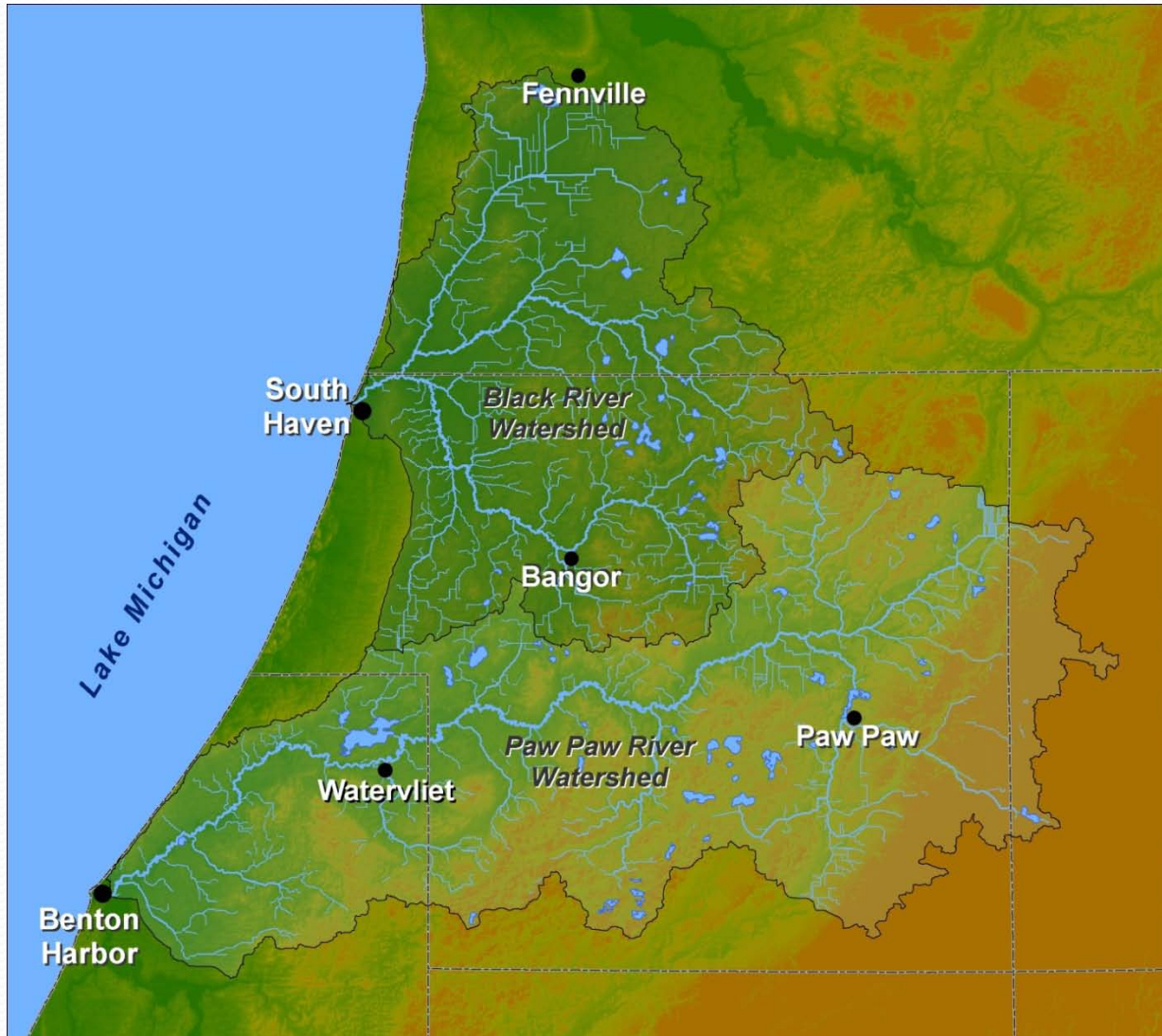


Matt Meersman

Watershed Coordinator

Van Buren Conservation District

Paw Paw and Black River Watersheds

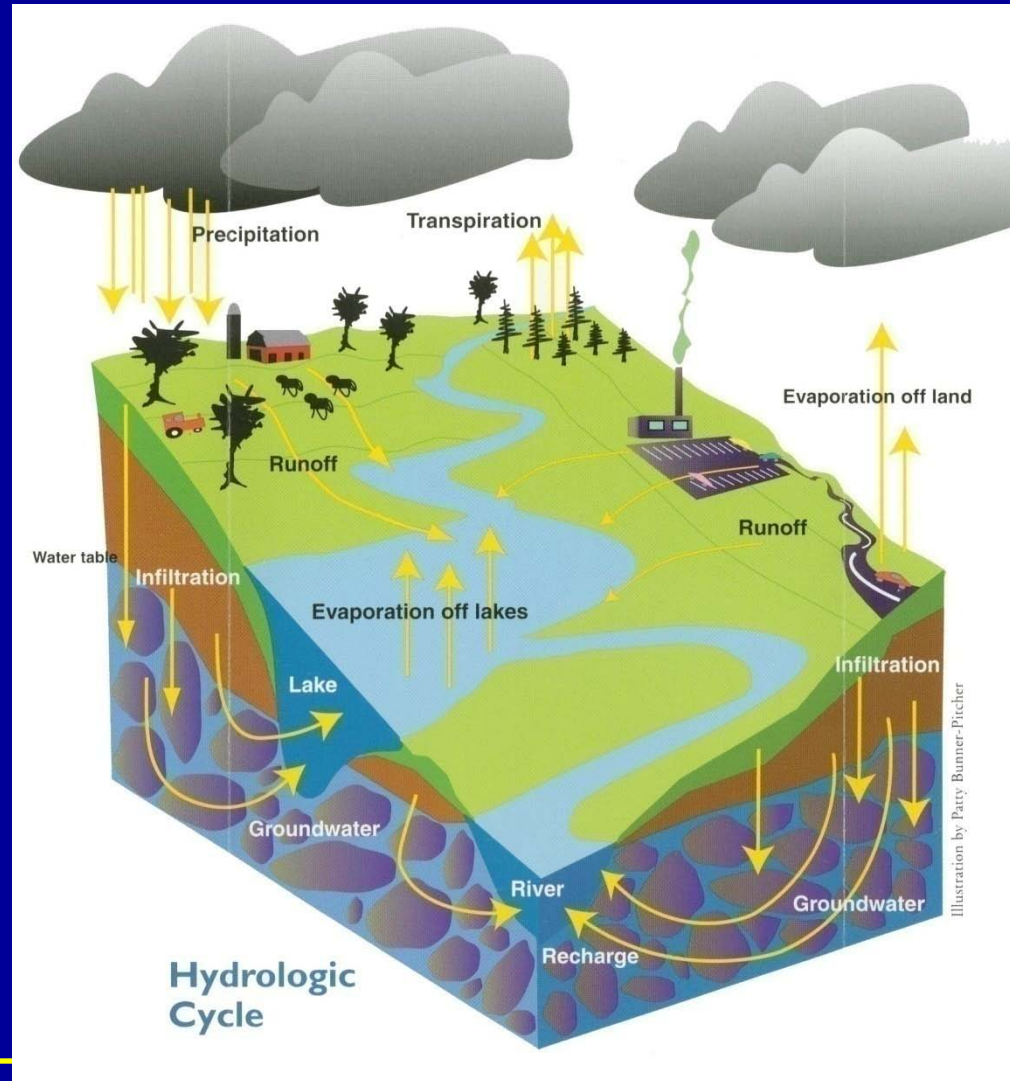


Watersheds and Pollution

☞ **Point Source** –
industrial or wastewater
treatment plant discharge)

☞ **Polluted Runoff**

**Over 60% of water
pollution comes from
polluted runoff!**



#1 Sediment

#2 Nutrients

Pollutants and Sources

Major Pollutants:

Sediment

Nutrients

Pathogens

Pesticides/Toxins

Flow???

Major Sources:

- Agricultural Runoff
- Urban/Residential Runoff
- Streambank Erosion



Watershed Management Plans

Black River Watershed Management Plan

MDEQ Tracking Code 2002-0067
April 2005
Updated December 2006



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Paw Paw River Watershed Management Plan

"A Guide for the Protection and Improvement of
Water Quality"



August 2008

- Characterize watersheds
- Present strategies for implementation
- Provide access to funding

Why are we excited about wetlands?



Wetland Loss

 Existing Wetlands

 Lost Wetlands

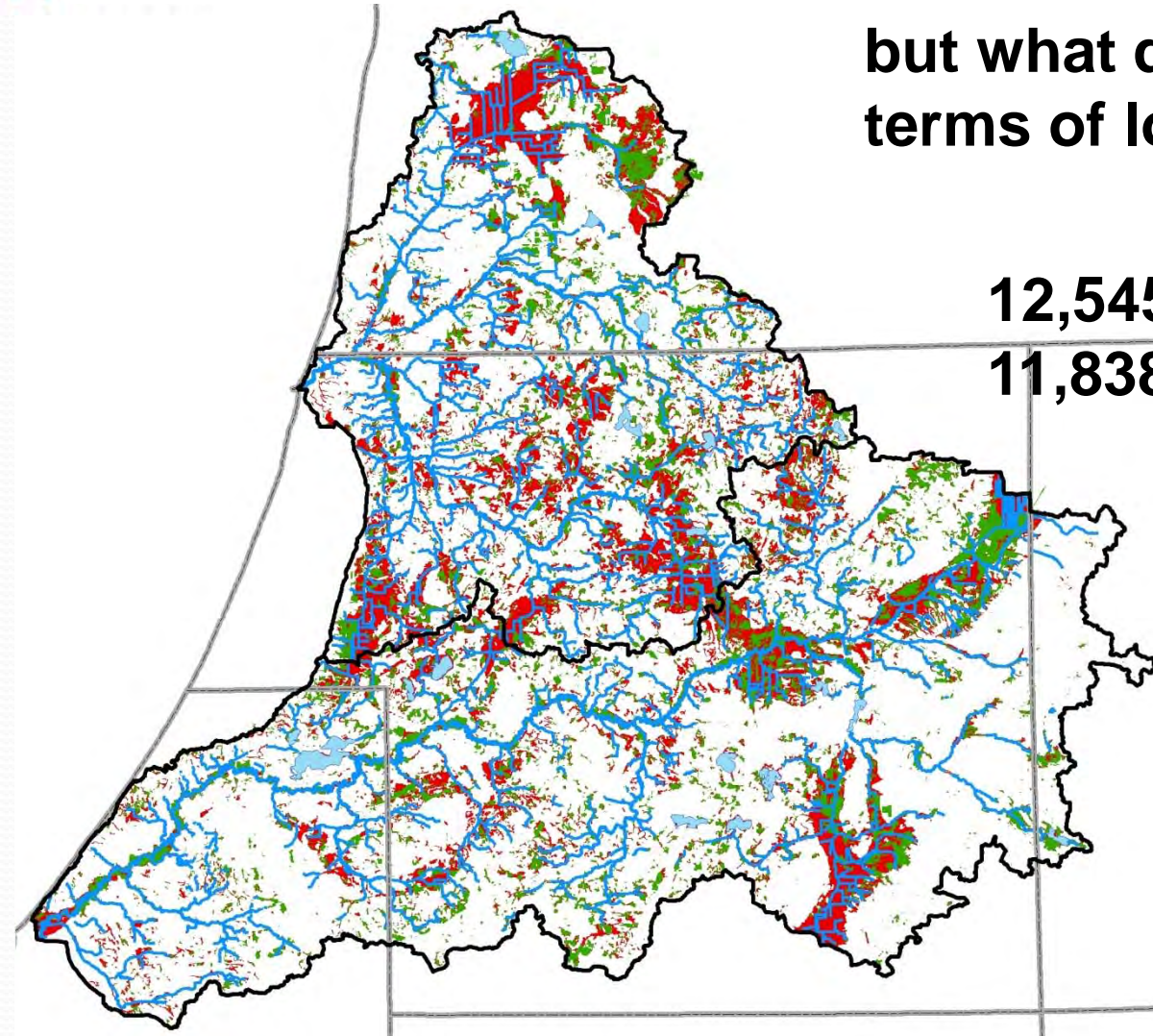
**47% Loss of Wetland Acres,
but what does that mean in
terms of lost functions?**

12,545 Restoration Sites!

11,838 Protection Sites!

Need to Be Strategic

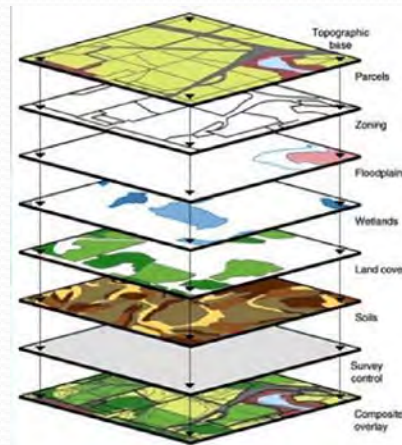
- Limited Resources
- Appeal to Different Interests



VBCD Wetland Project

A 3 Step Strategy for Watershed Improvement:

- Assess wetland functions
- Prioritize potential sites
- Use results to direct implementation efforts



47% Acreage Lost in the Paw Paw & Black



56% Flood Storage Capacity Lost

Christiana Creek Subwatershed (0405000114)		
Rank	Potential Landowner	Wetland Acres
1	NELSON FAMILY TRUST	232
2	COUNTY OF CASS, MI	193
3	WESTPHAL, CHARLES R	219
4	LARF LLC	141
5	STATE OF MICHIGAN DNR	148
6	WARREN, DWAIN K & CYNTHIA J	80
7	MC KENZIE, DARLENE J TRUST	132
8	BRANCALEON, TEENA	75
9	SPARKS CEDARLEE FARM	81
10	PAPANDREA, STEPHEN	65

GEOGRAPHY:	Paw Paw & Black River Watersheds Combined	Paw Paw River Watershed	Black River Watershed
TOTAL ACRES:	418,491	285,799	183,419
EXISTING WETLAND ACRES:	65,799	37,391	28,169
HISTORIC WETLAND ACRES:	123,721	64,792	58,929
WETLAND LOSS:	47%	42%	52%
	<i><u>Predicted Change in Functional Capacity *</u></i>		
FUNCTION:			
<i><u>Water Quality Combined</u></i>	-49%	-45%	-53%
Floodwater Storage	-56%	-52%	-61%
Streamflow Maintenance	-48%	-38%	-58%
Nutrient Transformation	-44%	-44%	-45%
Sediment Retention	-49%	-53%	-43%
Shoreline Stabilization	-47%	-40%	-54%
<i><u>Habitat Combined</u></i>	-52%	-50%	-54%
Fish	-61%	-51%	-72%
Waterfowl	0%	-17%	41%
Shorebird	-43%	-44%	-41%
Forest Bird	-49%	-45%	-54%
Amphibian	-71%	-72%	-69%

Wetland Protection/Restoration Assistance & Incentives

- USDA Farm Bill Programs -
Wetland Reserve Program



- USFWS-Partners for Fish
and Wildlife Program



- Conservation Easements

- Planning and Zoning



St. Joseph Harbor



Year	General Condition	Total Soil Erosion in SJRW (m ³ /year)	Total Sediment at Harbor Mouth (m ³ /year)
1830	Pre-Development	55,000	21,000
1978	Agriculture	650,000-902,000	52,000 - 60,000
1992	Agriculture & Urbanization	676,000	44,000 (25% from Paw Paw River Watershed)



Where is Sediment Coming From?

Sediment in the Harbor



Agricultural Lands



Urbanization

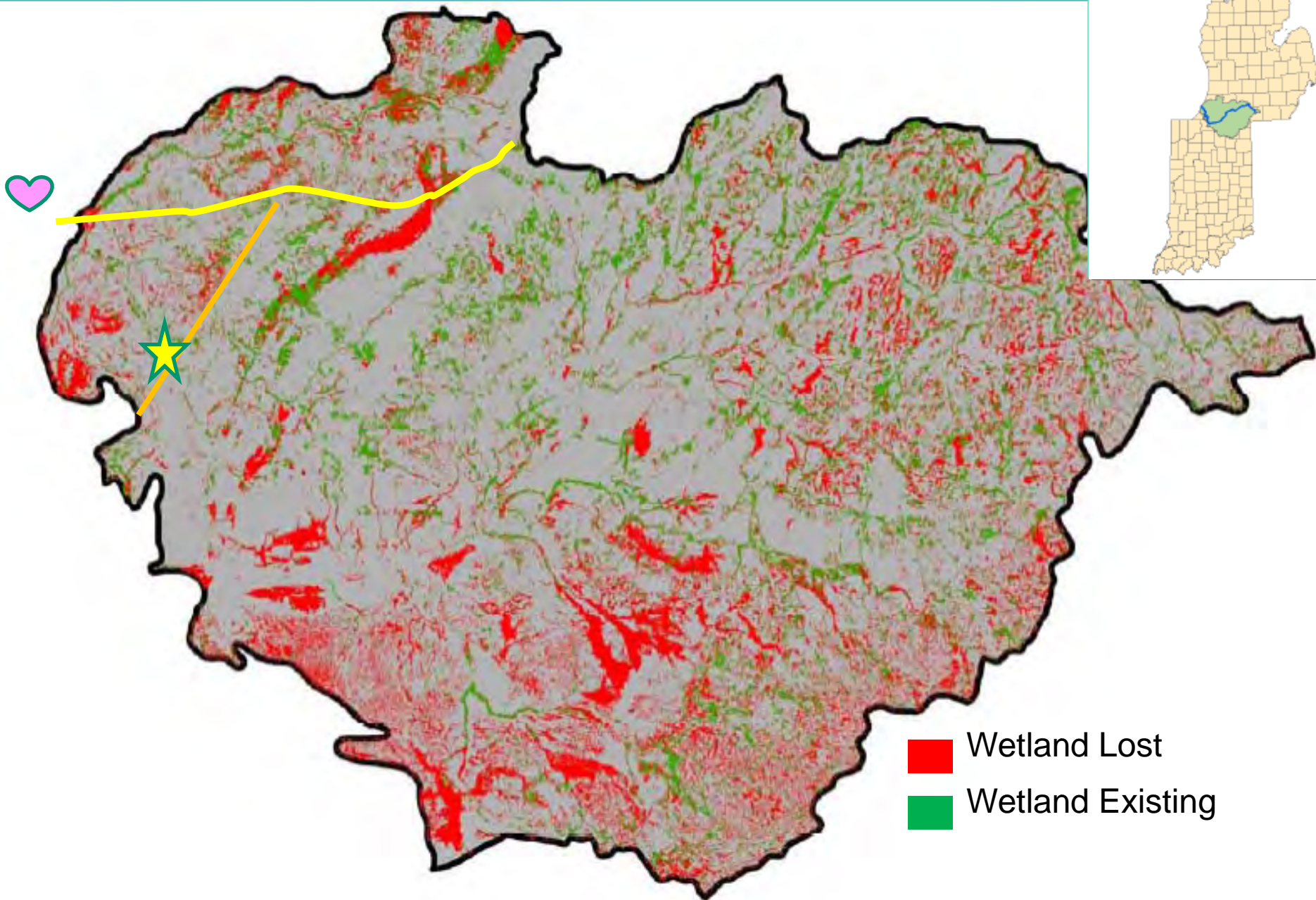


Road/Stream Crossings



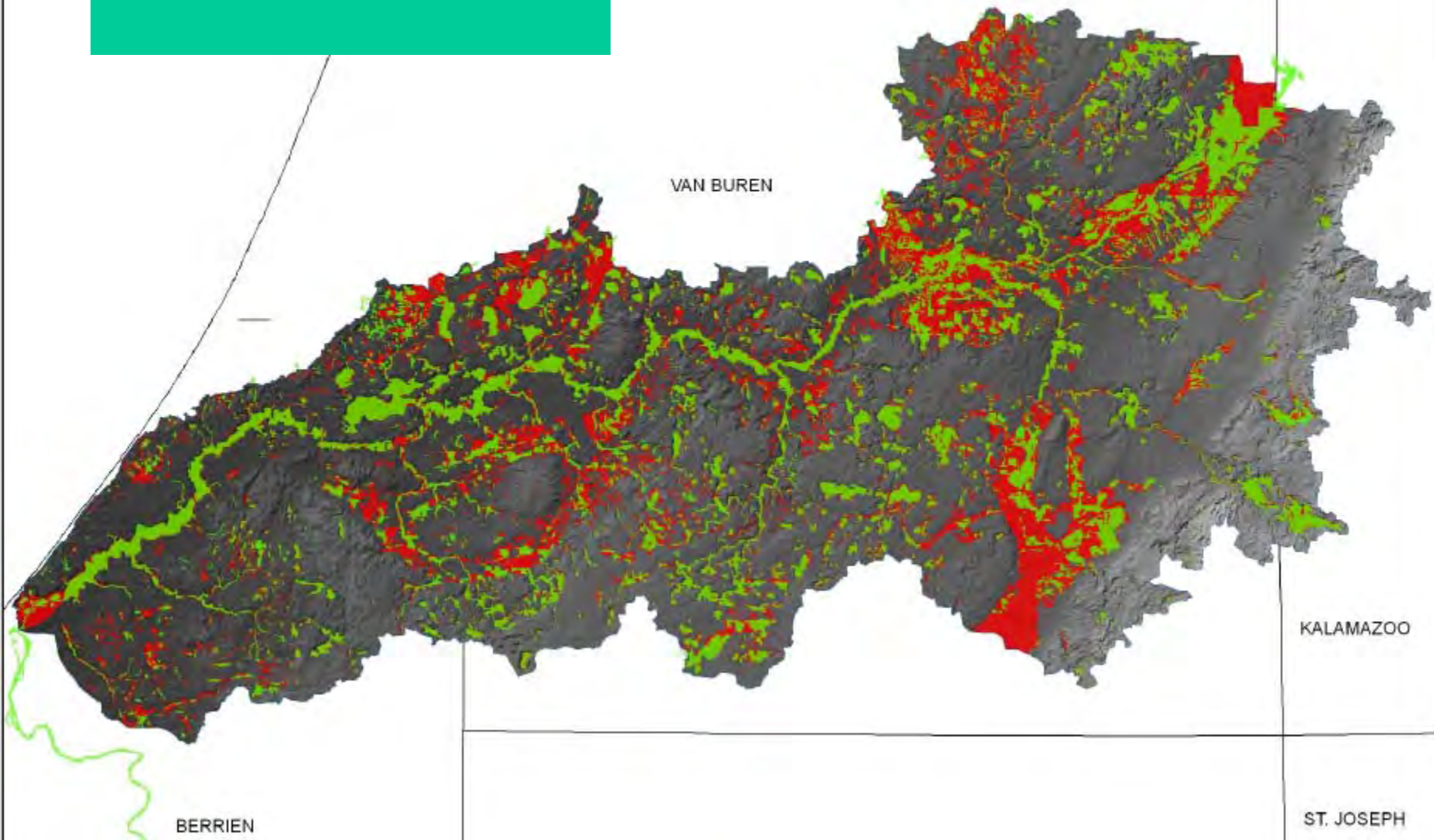
Lost Wetlands

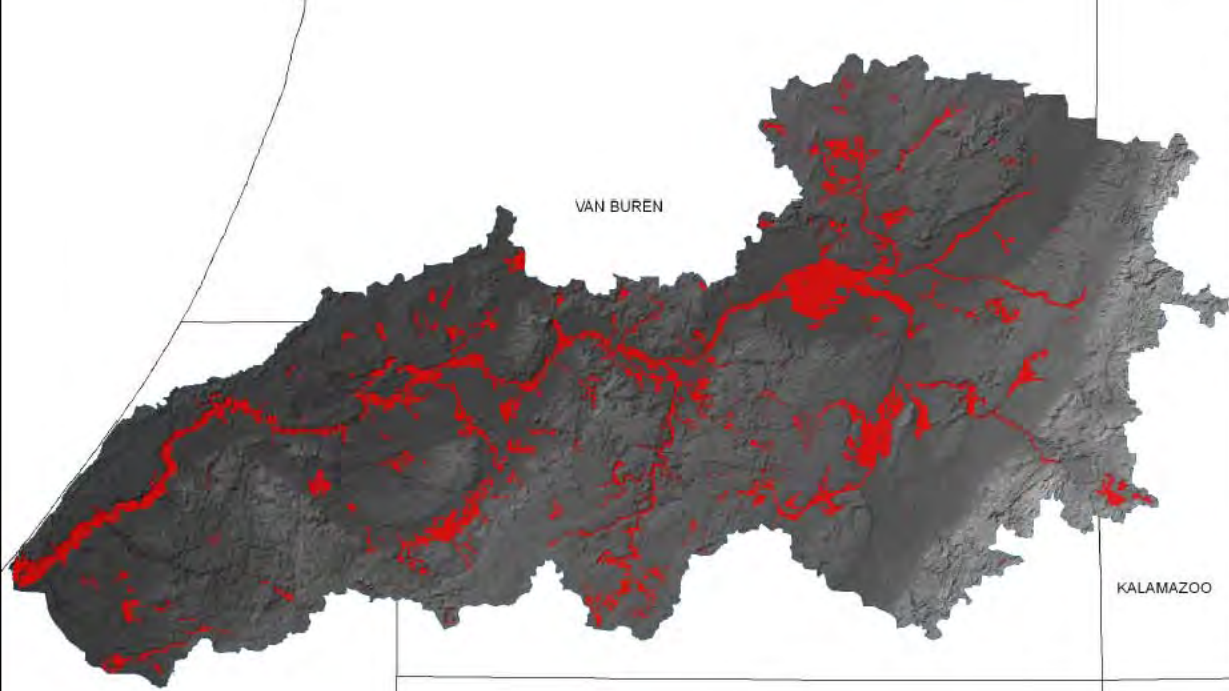
Wetland Loss in the SJRW



-  Wetland Lost
-  Wetland Existing

42% loss of wetland acres





SEDIMENT AND
OTHER PARTICULATE
RETENTION:
PRESETTLEMENT

4 Miles

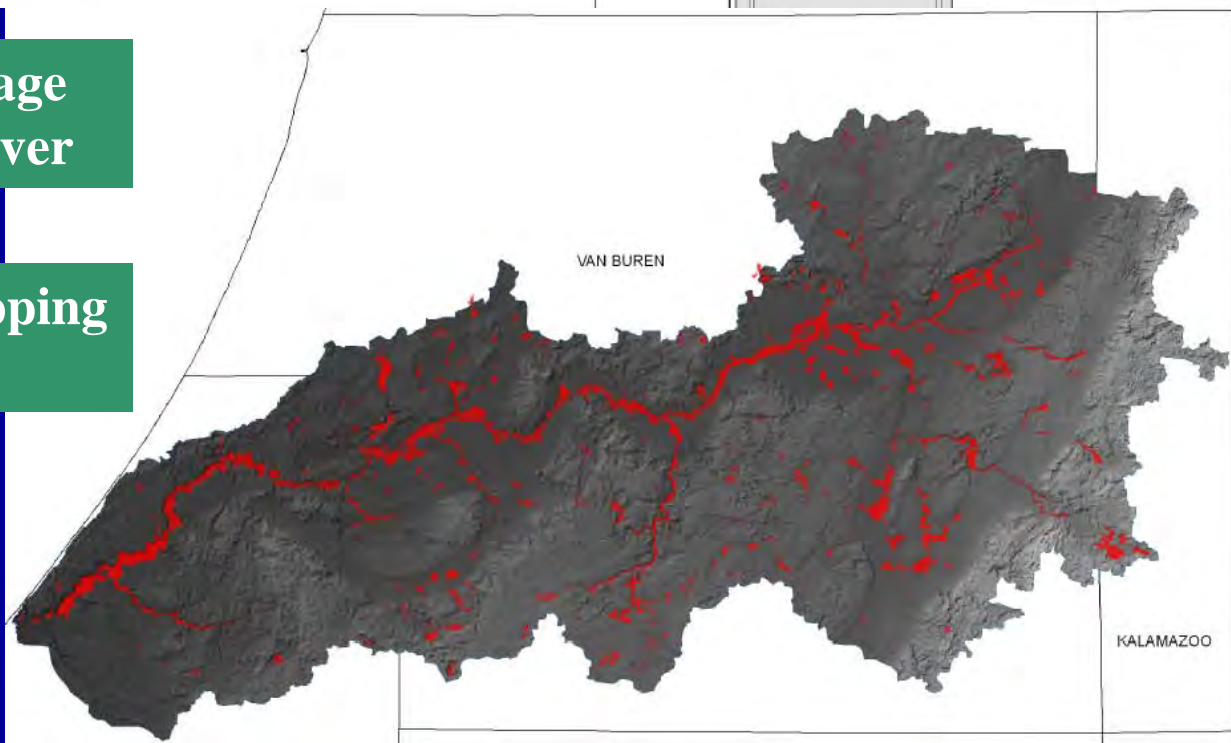
Legend
Presettlement LLWW-NWI
 -all other values-
SOPR

**Not all
wetlands are
created equal**

**42% Wetland Acreage
Lost in Paw Paw River**



**53% Sediment Trapping
Capacity Lost**



PAW PAW RIVER
WATERSHED

WETLANDS
WITH HIGH
SIGNIFICANCE
FOR
SEDIMENT AND
OTHER PARTICULATE
RETENTION:
1998

4 Miles

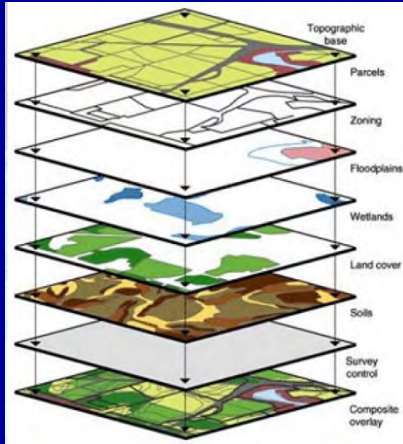
Legend
1998 LLWW-NWI
 -all other values-
SOPR



We need WETLANDS, but which ones???

Targeting Restoration/Protection

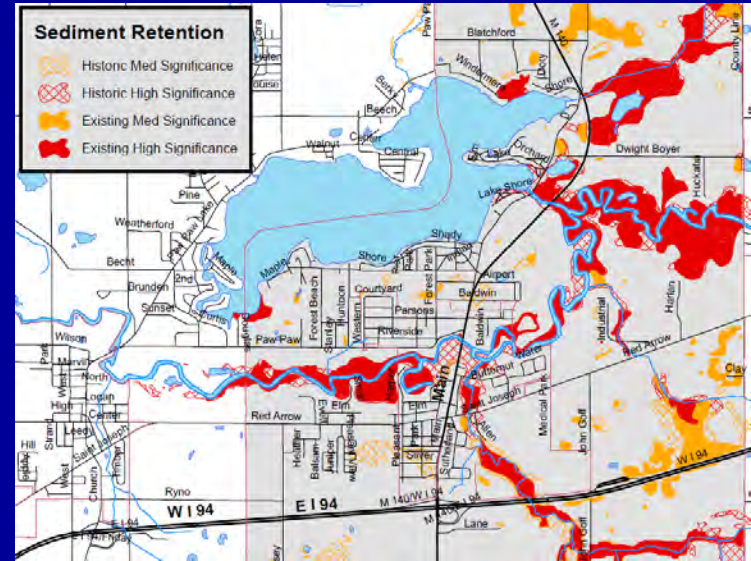
Prioritize Landowners & Municipalities



42% Acreage Lost in
Paw Paw River



53% Sediment Trapping
Capacity Lost



High Remaining Sediment Retention Capacity

Rank	Municipality Name	Wetland Acres	% Wetlands Loss
1	Almena Township	5400.3	32.7%
2	Waverly Township	4190.6	47.8%
3	Hartford Township	3566.1	44.2%
4	Lawrence Township	2885.6	36.1%
5	Paw Paw Township	3263.0	49.7%
6	Benton Township	1614.4	42.6%
7	Antwerp Township	1904.3	24.6%
8	Hamilton Township	1889.9	6.3%
9	Watervliet Township	1423.9	31.5%
10	Keeler Township	1548.8	33.3%
11	Bainbridge Township	1237.4	27.5%
12	Hagar Township	1000.0	28.1%
13	Coloma Township	941.2	28.2%
14	Bangor Township	1104.3	60.5%
15	Bloomington Township	816.6	65.7%
16	Decatur Township	866.2	78.0%

"Top 25" Existing Wetland Owners

	Landowner Name	Wetland Acres	Sediment Retention Functional Units
1	STATE OF MICHIGAN	2,543	1,973
2	BUSY BEE FARMS	252	226
3	HAMLIN HAROLD & MARTHA	140	194
4	HAWKSHEAD COUNTRY CLUB LLC	97	188
5	CONSUMERS ENERGY COMPANY	200	166
6	OAK HAVEN	116	137
7	MICHIGAN NATURE ASSOCIATION	75	133
8	GHIDOTTI BERT	189	129
9	SISCO VICTORIA	60	116
10	BUCK'S & BEARD'S LLC	111	112
11	BAKER KENNETH F	54	109
12	CITY OF BANGOR	82	109
13	THOMAS DAVID L & MELISSA	99	102
14	HEATON ROGER P	59	100
15	WALGREN LAWRENCE C JR	48	95

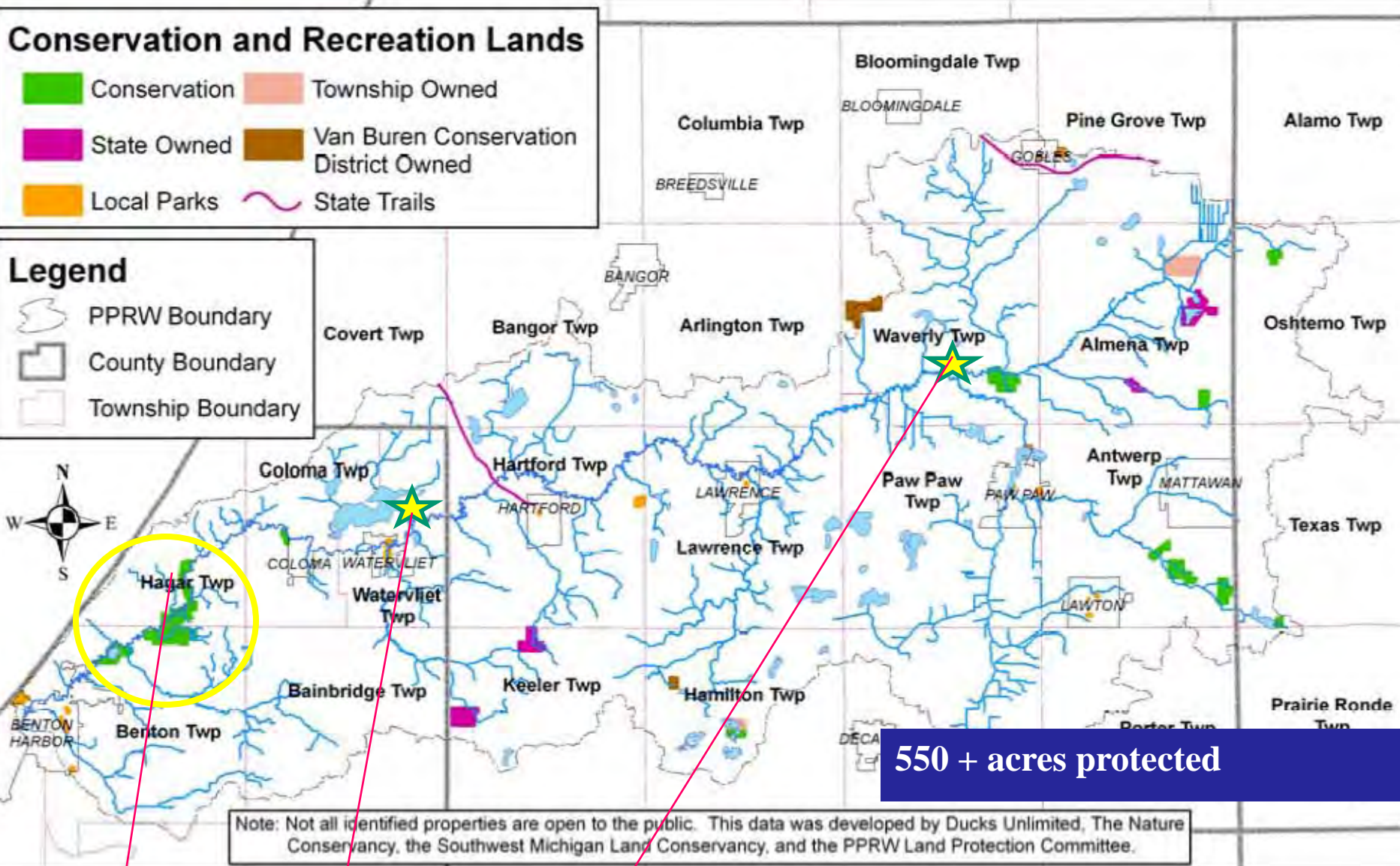
Protection - Preventing Sediment

Conservation and Recreation Lands

- Conservation
- State Owned
- Local Parks
- Township Owned
- Van Buren Conservation District Owned
- State Trails

Legend

- PPRW Boundary
- County Boundary
- Township Boundary



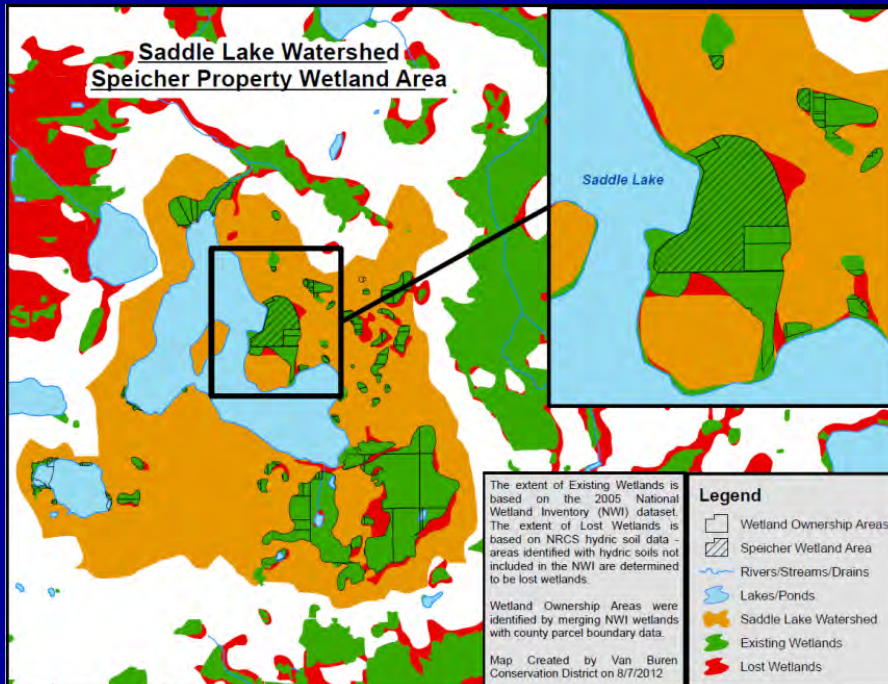
550 + acres protected

Note: Not all identified properties are open to the public. This data was developed by Ducks Unlimited, The Nature Conservancy, the Southwest Michigan Land Conservancy, and the PPRW Land Protection Committee.

Sarett #2 #32 #3 out of 6,811!!!

Other Implementation Examples

- Paw Paw and Saddle Lake Associations
- Planning/Zoning – Alma, Waverly
- Municipal Projects – Village of Paw Paw
- Landowner Reports



Wetland Functional Report

Eureka! Property - Paw Paw River Watershed

WETLAND AREA FUNCTIONAL SIGNIFICANCE		
EXISTING WETLAND ACRES:	236	
	<i>Significance*</i>	<i>Rank**</i>
FUNCTION:		
<i>Water Quality Combined</i>	1.73	4***
Floodwater Storage	1.98	3
Streamflow Maintenance	0.97	10
Nutrient Transformation	1.82	4
Sediment Retention	1.94	3
Shoreline Stabilization	1.92	3
<i>Habitat Combined</i>	1.47	3****
Fish	1.93	4
Waterfowl	0.59	13
Shorebird	0.98	4
Forest Bird	1.9	2
Amphibian	1.94	4

* Functional Significance is rated on a scale of 0 to 2, with 1 being "Moderately Significant" and 2 being "Highly Significant".

** Ranking is based on Functional Units, which are calculated by multiplying the size of the Wetland Area by the Functional Significance. **Ranking is relative to 6,757 other wetland areas in the Paw Paw River Watershed.**

***Behind Pokagon Band of Potawatomi Indians, Alma, Twp. and Sarett Nature Center


****Behind Alma, Twp. and the Pokagon Band of Potawatomi Indians

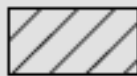
Municipalities – Planning

Planning for Wetlands

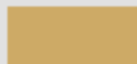
Keeping Opportunities for
Protection and Restoration

Legend


 Existing Wetlands

 Lost Wetlands

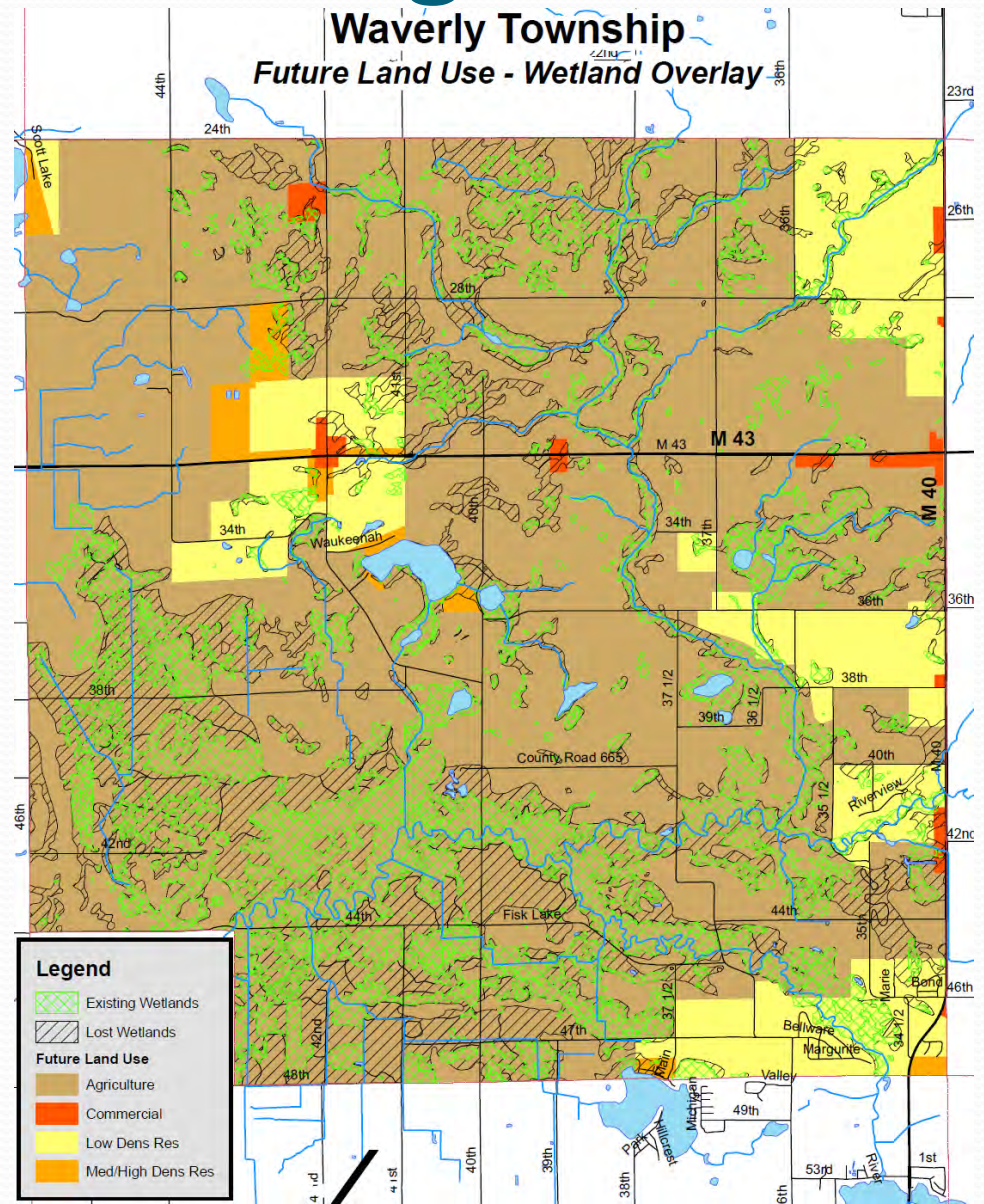
Future Land Use

 Agriculture

 Commercial

 Low Dens Res

 Med/High Dens Res



Project Accomplishments



Protection

- **PPRW** - Eureka, Red Tail, Lawrence Properties
– 560 acres of wetland
- **BRW** – Garvey, Celery Pond, Jephtha Properties
– 85 acres of wetland



Project Accomplishments



Restoration

- 9 acre restoration at Sora Meadows
- 61 acres of restoration on two WRP projects
- Techniques of wetland restoration workshop



Restoration Site Planning at Sora Meadows



Techniques of Wetland Restoration Workshop



Next Steps

- Provide information to landowners and organizations/agencies
- Workshop for Landowners – January 31

TRC Mission Statement:

The Two Rivers Coalition, Inc. is a citizen based group working to protect the health of the Black River and Paw Paw River Watersheds through conservation, education, and advocacy.

Thank you

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