

Wetlands

Doing the Dirty Work!

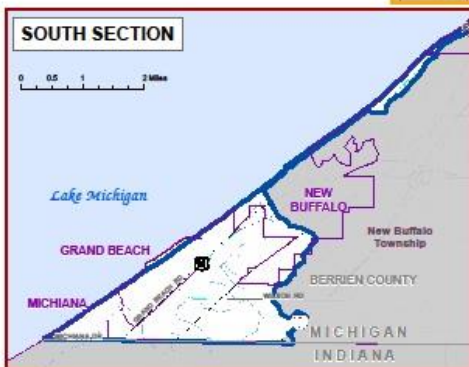
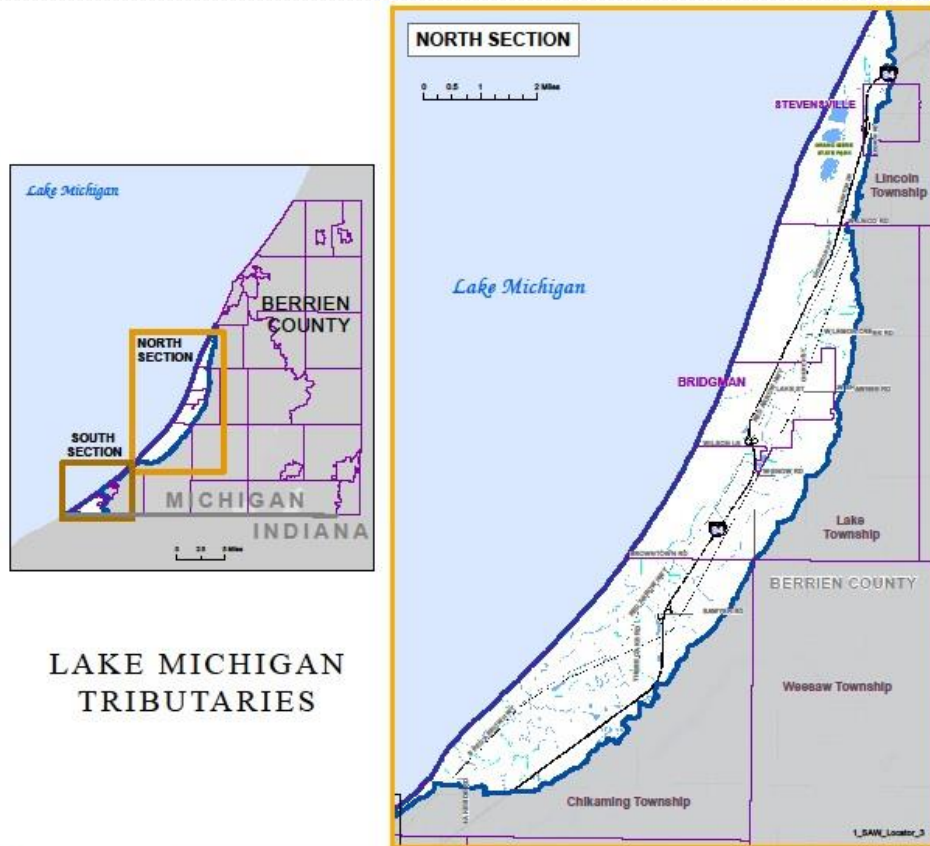


Marcy Hamilton

Senior Planner

Southwest Michigan Planning Commission

Lake Michigan Tributary Project



SWMPC

**The Conservation Fund
Berrien County Health Dept
Chikaming Open Lands
Great Lakes Scientific**



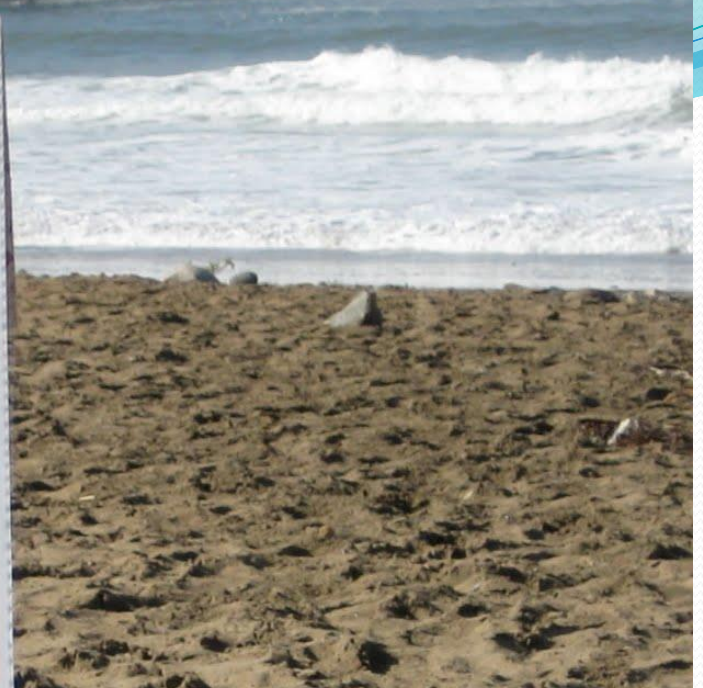
THE POKAGON FUND

Who Cares About Clean Water?





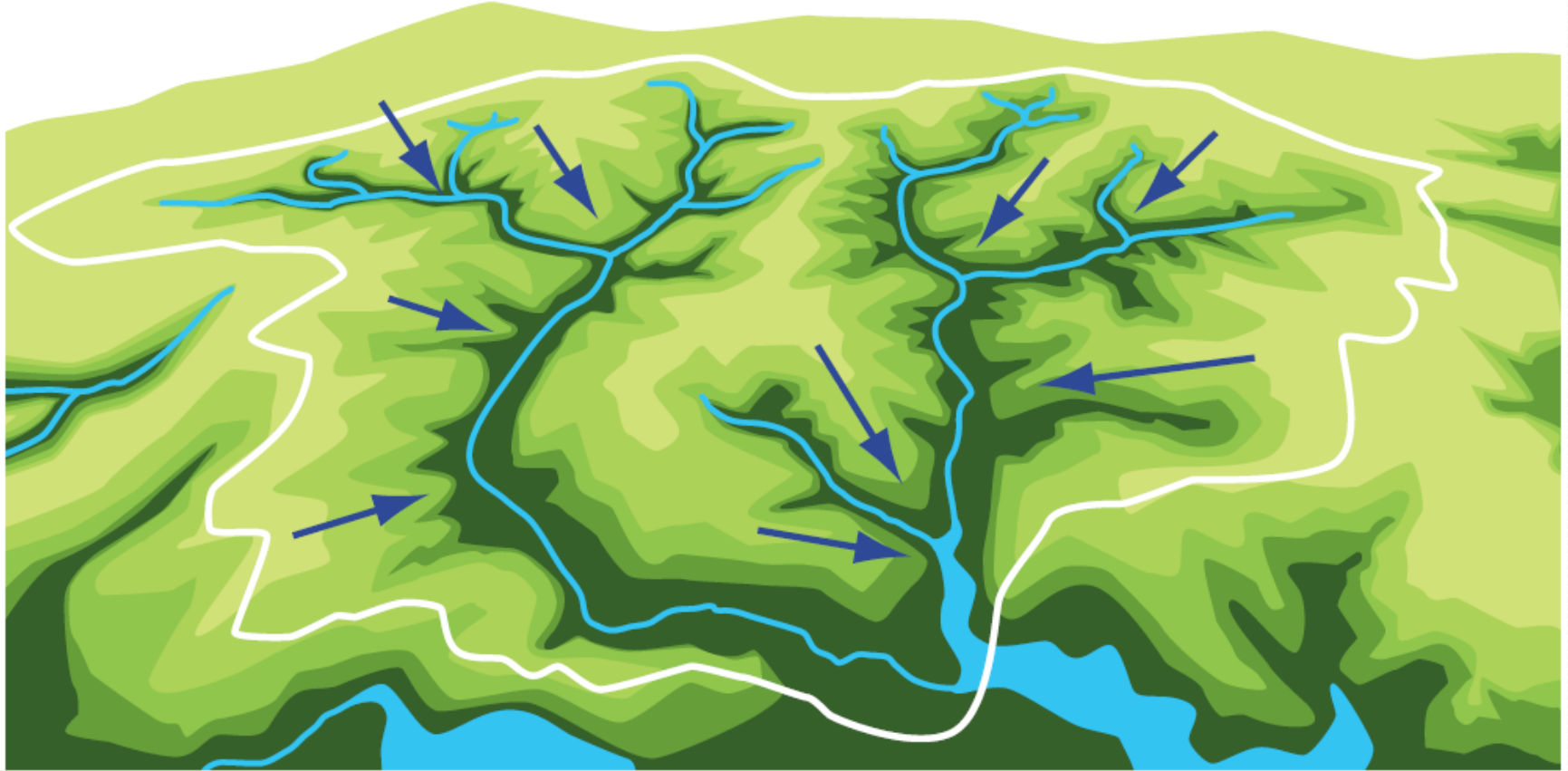






What is a “watershed”?

- All of the land that drains to a body of water



WATERSHEDS in SOUTHWEST MICHIGAN



Watersheds

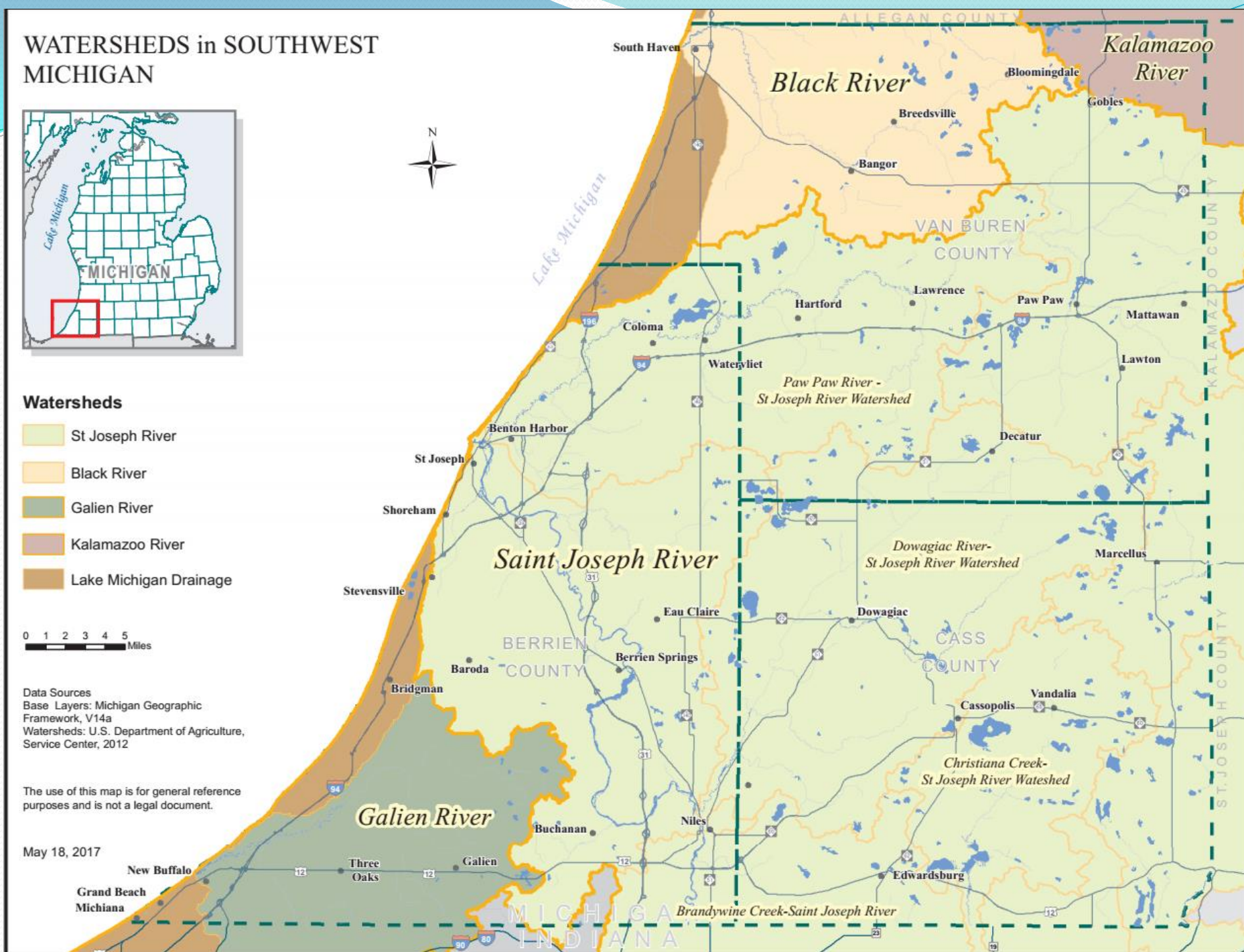
- St Joseph River
- Black River
- Galien River
- Kalamazoo River
- Lake Michigan Drainage

0 1 2 3 4 5
Miles

Data Sources
Base Layers: Michigan Geographic Framework, V14a
Watersheds: U.S. Department of Agriculture, Service Center, 2012

The use of this map is for general reference purposes and is not a legal document.

May 18, 2017



Lake Michigan Tributaries

NORTH SECTION



Subwatersheds

- Birchwood Creek
- Chikaming Creek
- Deer Creek
- John Markley Drain
- Lakeside Creek
- Painterville Drain
- Swift Creek
- Valley Drain
- Weko Beach

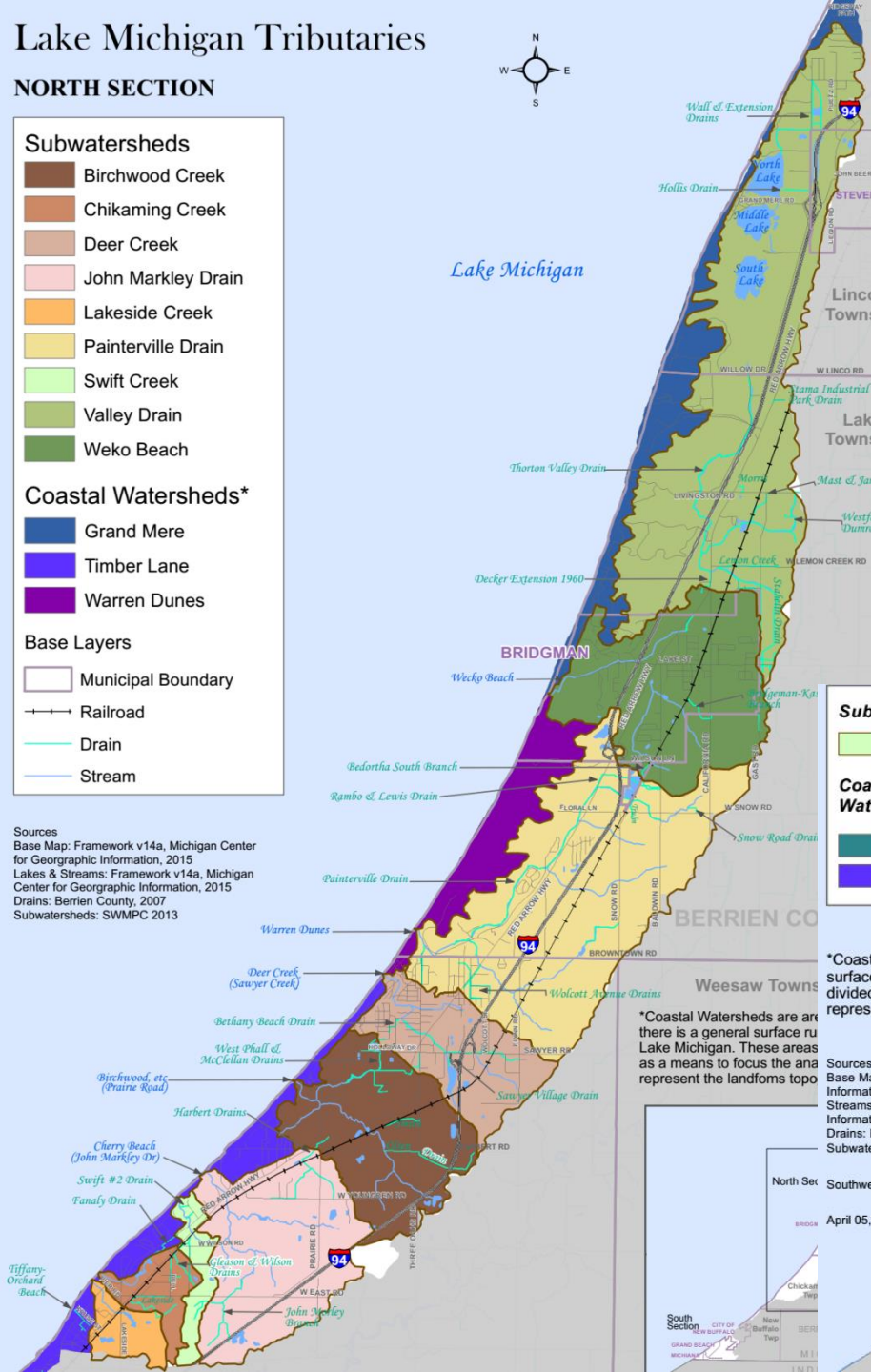
Coastal Watersheds*

- Grand Mere
- Timber Lane
- Warren Dunes

Base Layers

- Municipal Boundary
- Railroad
- Drain
- Stream

Sources
Base Map: Framework v14a, Michigan Center for Geographic Information, 2015
Lakes & Streams: Framework v14a, Michigan Center for Geographic Information, 2015
Drains: Berrien County, 2007
Subwatersheds: SWMPC 2013



Subwatersheds

- New Buffalo Drain

Coastal Watersheds*

- Southern
- Timber Lane

Base Layer

- Municipal Boundaries
- Railroad
- Stream
- Drain

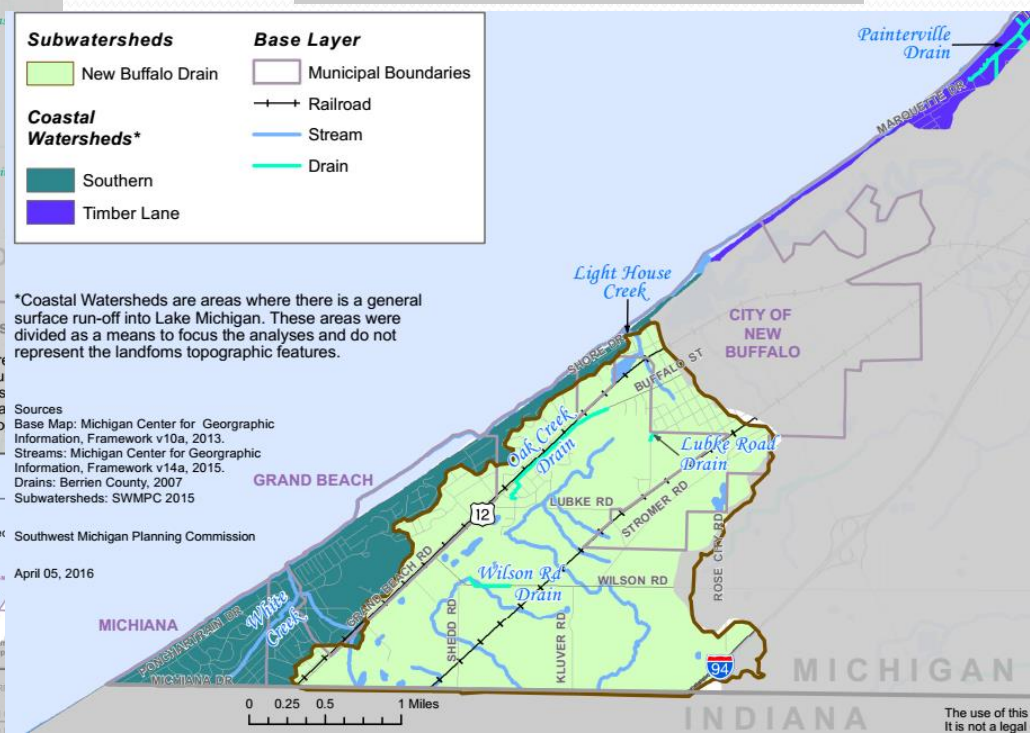
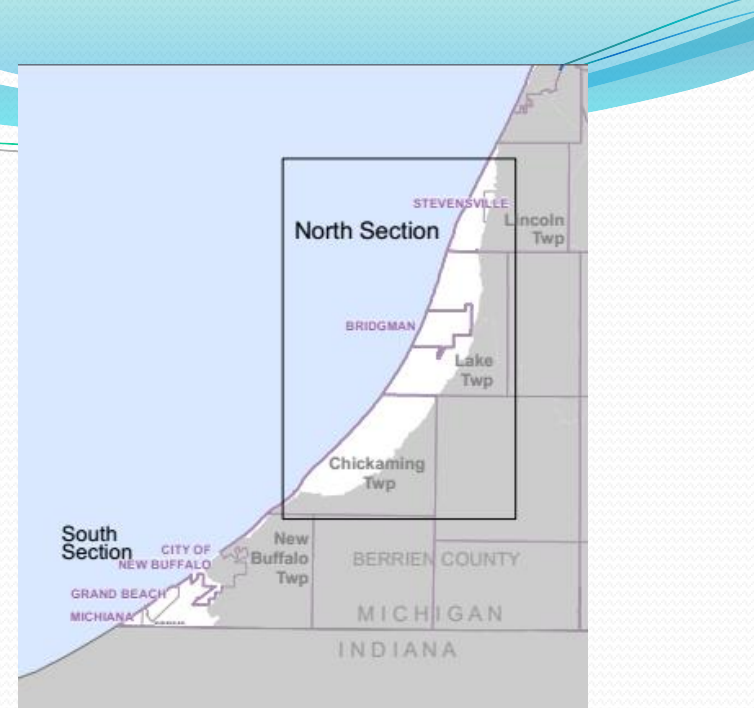
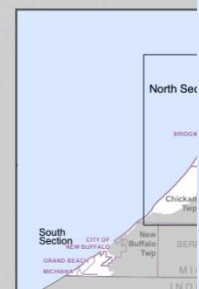
*Coastal Watersheds are areas where there is a general surface run-off into Lake Michigan. These areas were divided as a means to focus the analyses and do not represent the landforms topographic features.

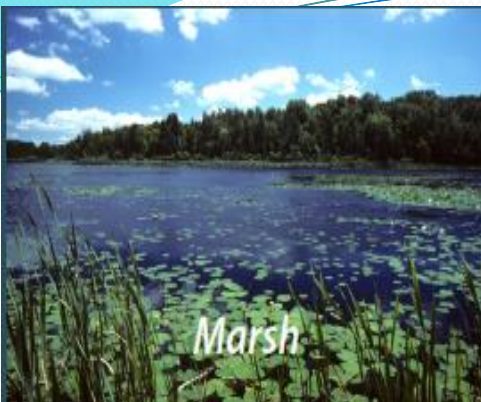
Sources
Base Map: Michigan Center for Geographic Information, Framework v10a, 2013.
Streams: Michigan Center for Geographic Information, Framework v14a, 2015.
Drains: Berrien County, 2007
Subwatersheds: SWMPC 2015

Southwest Michigan Planning Commission

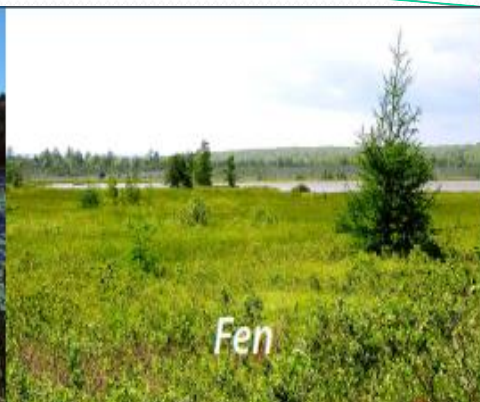
April 05, 2016

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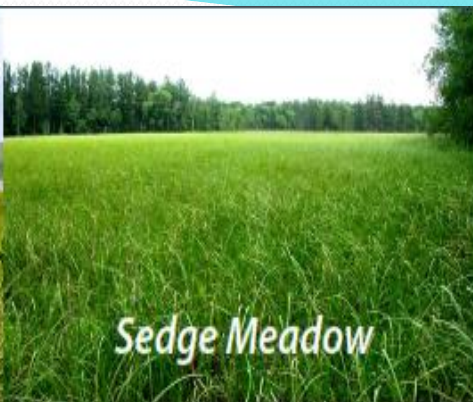




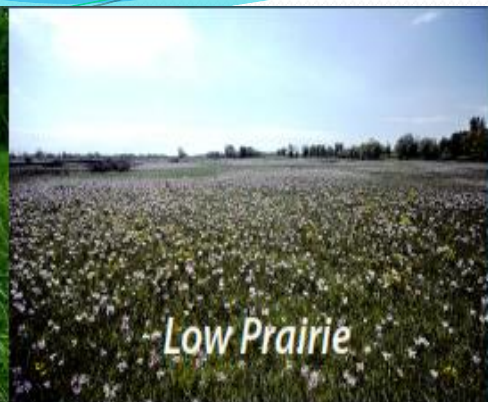
Marsh



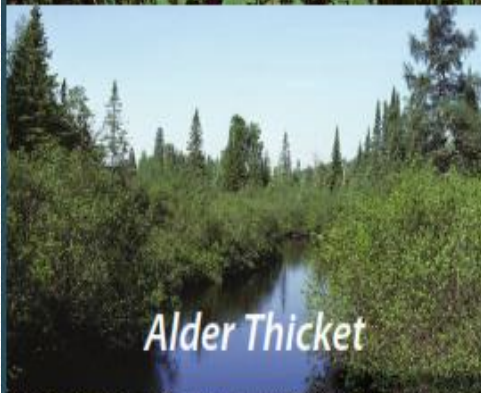
Fen



Sedge Meadow



Low Prairie



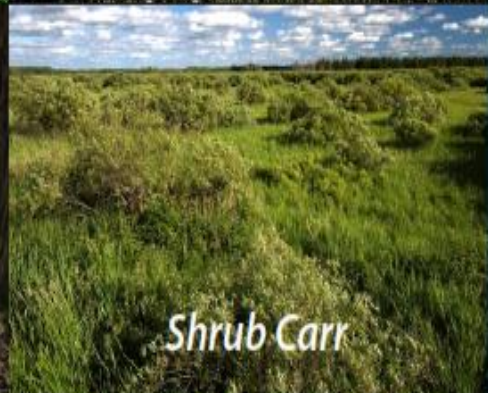
Alder Thicket



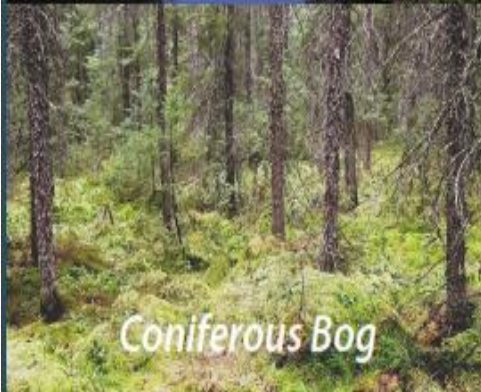
Open Bog



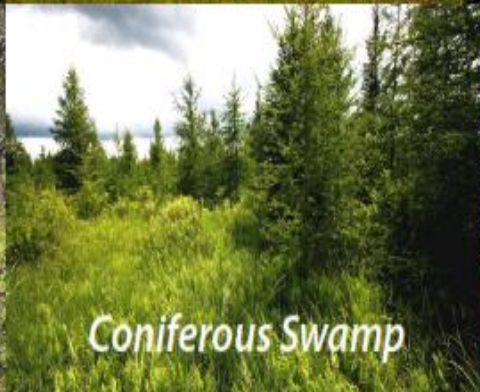
Ephemeral Pond



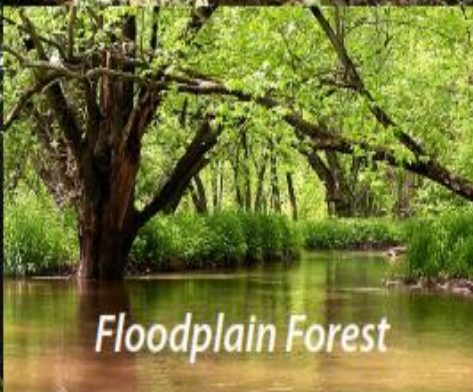
Shrub Carr



Coniferous Bog



Coniferous Swamp



Floodplain Forest



Lowland Hardwood Swamp

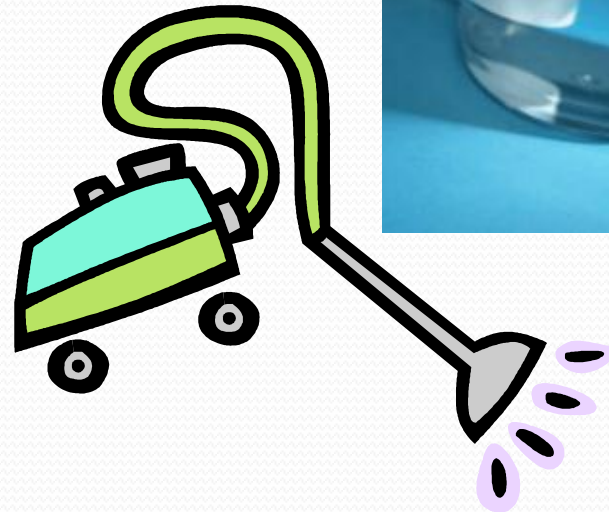
Legal Definition...



Why are we excited about wetlands?



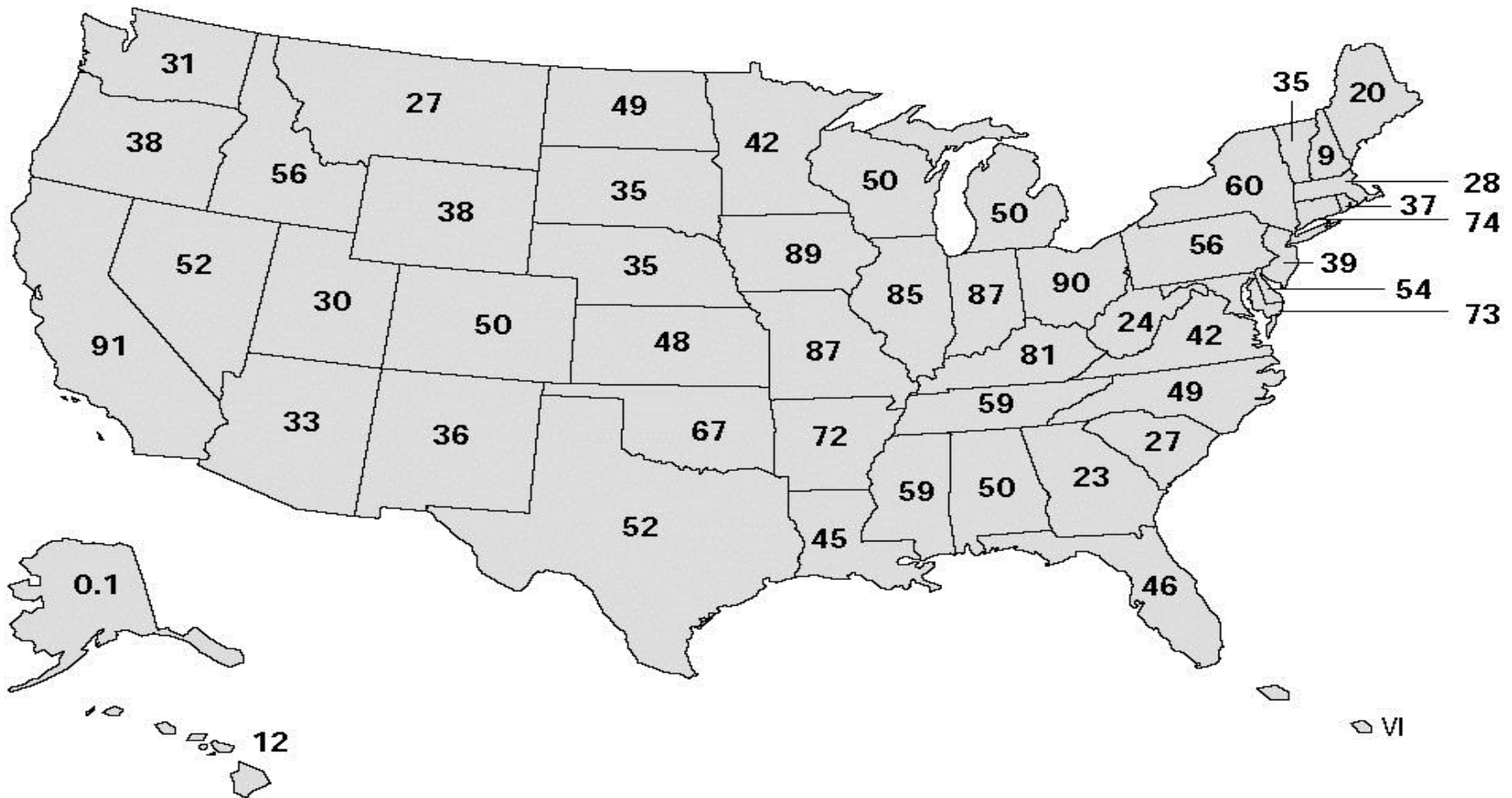
We know they're important for wildlife, but...



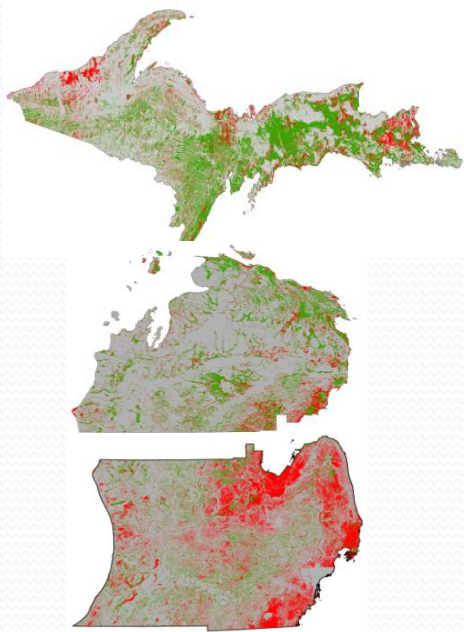


We've *Lost* A LOT!

Percentage of Wetland Acreage Lost,
1780s-1980s



We've Lost A lot in MI!



Upper Peninsula

17% loss (638,000 acres)

Northern Lower

20% loss (387,000 acres)

Southern Lower

66% loss (3,320,000 acres)

Great Lakes Coastal

71% loss

Lake Michigan Tributaries

NORTH SECTION


WETLANDS

 Existing Wetlands


 Lost Wetlands

highlights areas that are likely to have conditions suitable for wetland restoration efforts.

Base Layers

 Municipal Boundary

 Railroad

 Stream

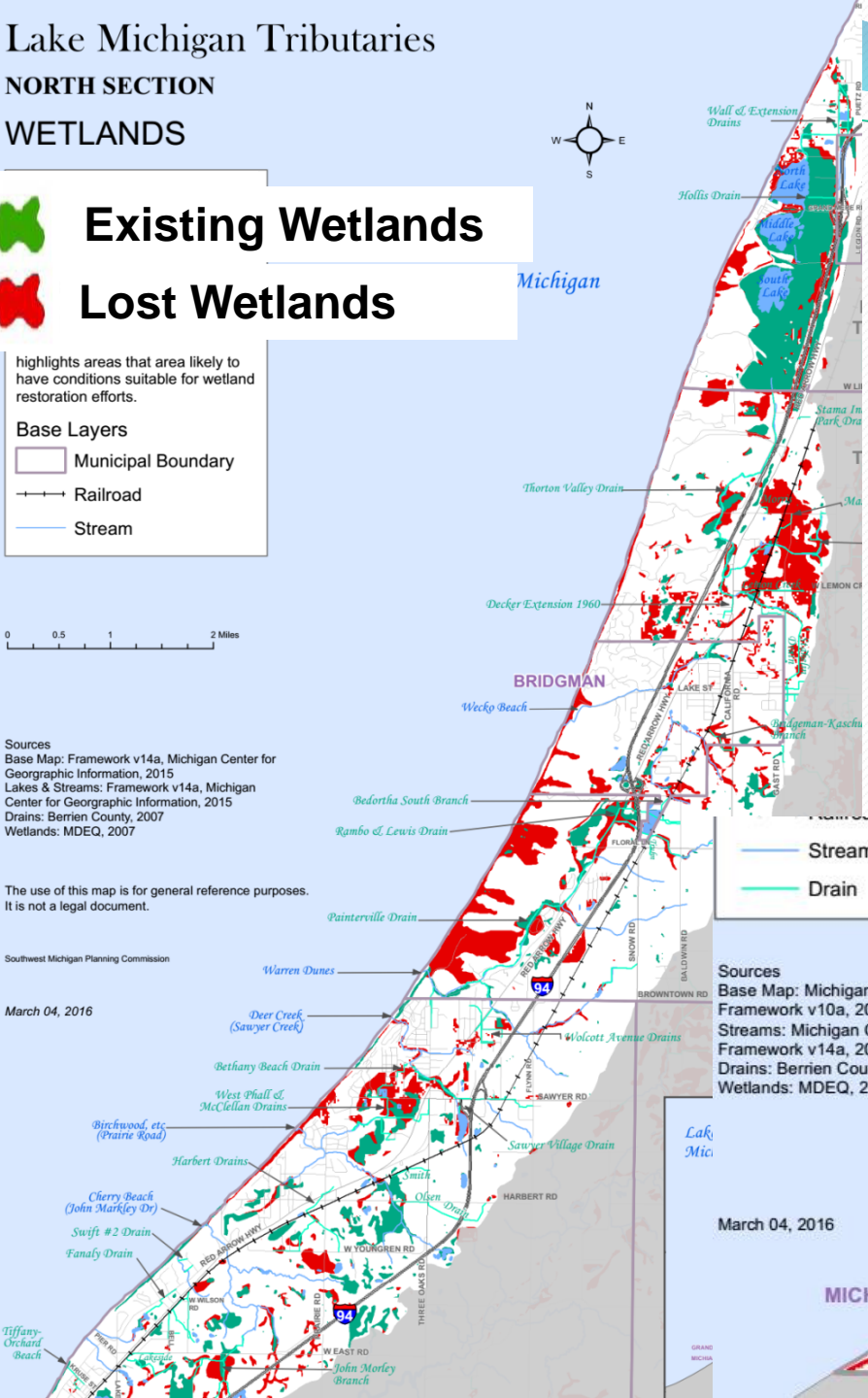


Sources
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Lakes & Streams: Framework v14a, Michigan Center for Geographic Information, 2015
Drains: Berrien County, 2007
Wetlands: MDEQ, 2007

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March 04, 2016



How Much Lost?

Lost – 2,064 acres (46%)

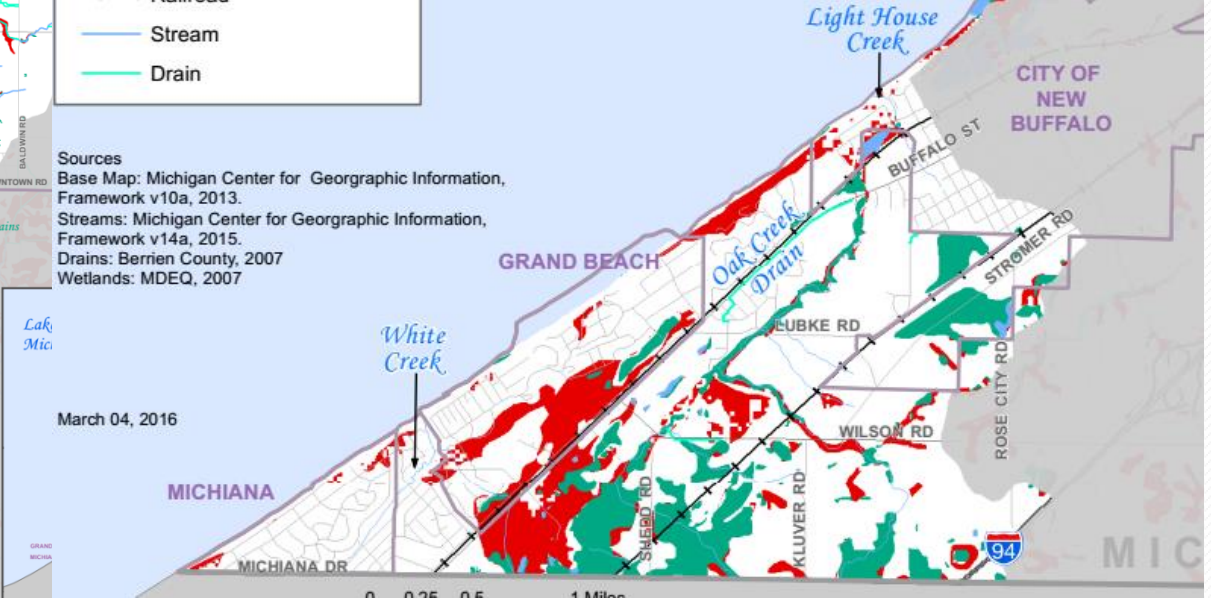
Remaining – 2,412 acres (54%)

 Stream

 Drain

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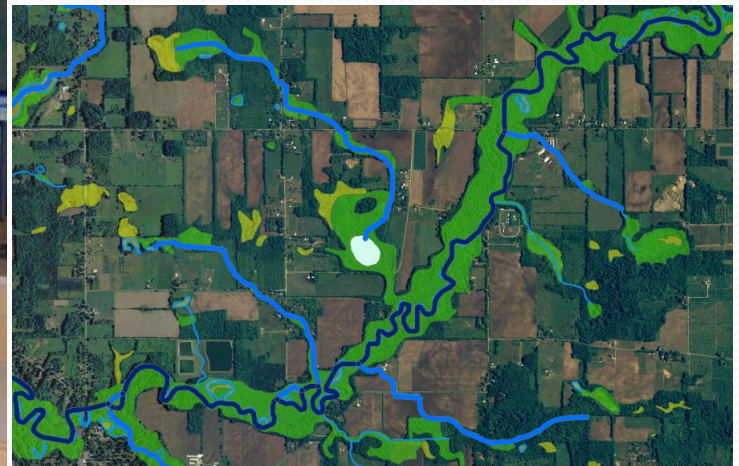
March 04, 2016





Wetland Functions Evaluated

- **Flood water storage** – Reduce Flooding
- **Streamflow maintenance** – Stable Flows
- **Nutrient transformation** – Less Aquatic Vegetation
- **Sediment retention** – Cleaner Water
- **Shoreline stabilization** – Less Erosion
- **Groundwater recharge** – Drinking Water
- **Ecoli reduction** – Cleaner Water
- **Fish and Wildlife Habitat** – Fishing, Hunting



Understand Acreage vs. Function Loss

Area	Acres Lost	Floodwater Storage Loss	Sediment Retention Loss	Fish Habitat Loss	Overall Water Quality Loss	Overall Habitat Loss
Deer Creek	80%	84%	85%	90%	84%	86%
Berrien County	53%	58%	52%	64%	50%	54%
Weko Beach	80%	92%	11%	89%	77%	85%

•**Water Quality**- Floodwater Storage, Sediment Retention, Nutrient Transformation, Shoreline Stabilization, Streamflow Maintenance, Carbon Sequestration, and E coli Retention

Wildlife Habitat- Fish, Waterfowl, Interior Forest Bird, Shorebird, and Amphibian Habitat.

Lake Michigan Tributaries

NORTH SECTION

WETLANDS FUNCTION*

SEDIMENT RETENTION & NUTRIENT TRANSFORMATION*

Existing Wetlands

- High Significance
- Medium Significance

Lost Wetlands

- High Significance
- Medium Significance

*Wetland Functional Assessment rates wetlands according to its ability to perform specific ecological functions. Shown on this map are wetlands that function at higher levels to retain sediment from entering waterways and transform nutrients.
(All other wetlands not shown in the Wetland Functional Assessment)

Existing Wetland shown in the Wetland Functional Assessment

Base Layers

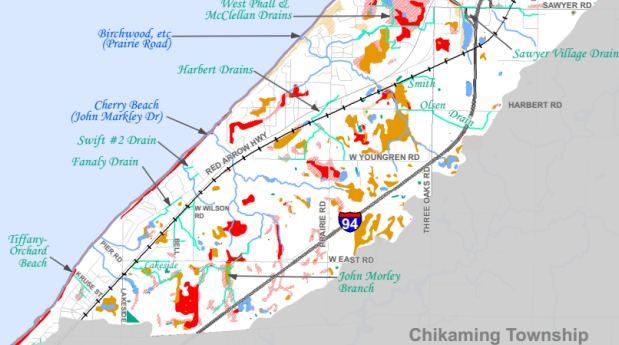
- Municipal Boundary
- Stream
- Railroad
- Drain

0 0.5 1 2 Miles

Sources
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Drains: Berrien County, 2007
Wetlands: MDEQ, 2016

Southwest Michigan Planning Commission

March 05, 2016



Sediment Retention & Nutrient Transformation

ing waterways and transform nutrients.

Existing Wetland (All other wetlands not shown in the Wetland Functional Assessment)

Base Layers

- Municipal Boundaries
- Stream
- Railroad
- Drain



Lake Michigan Tributaries

NORTH SECTION

WETLANDS FUNCTION*

Flood Water Retention

Existing Wetlands

- High Significance
- Medium Significance

Lost Wetlands

- High Significance
- Medium Significance

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Existing Wetland (All other wetlands not shown in the Wetland Functional Assessment)

Base Layers

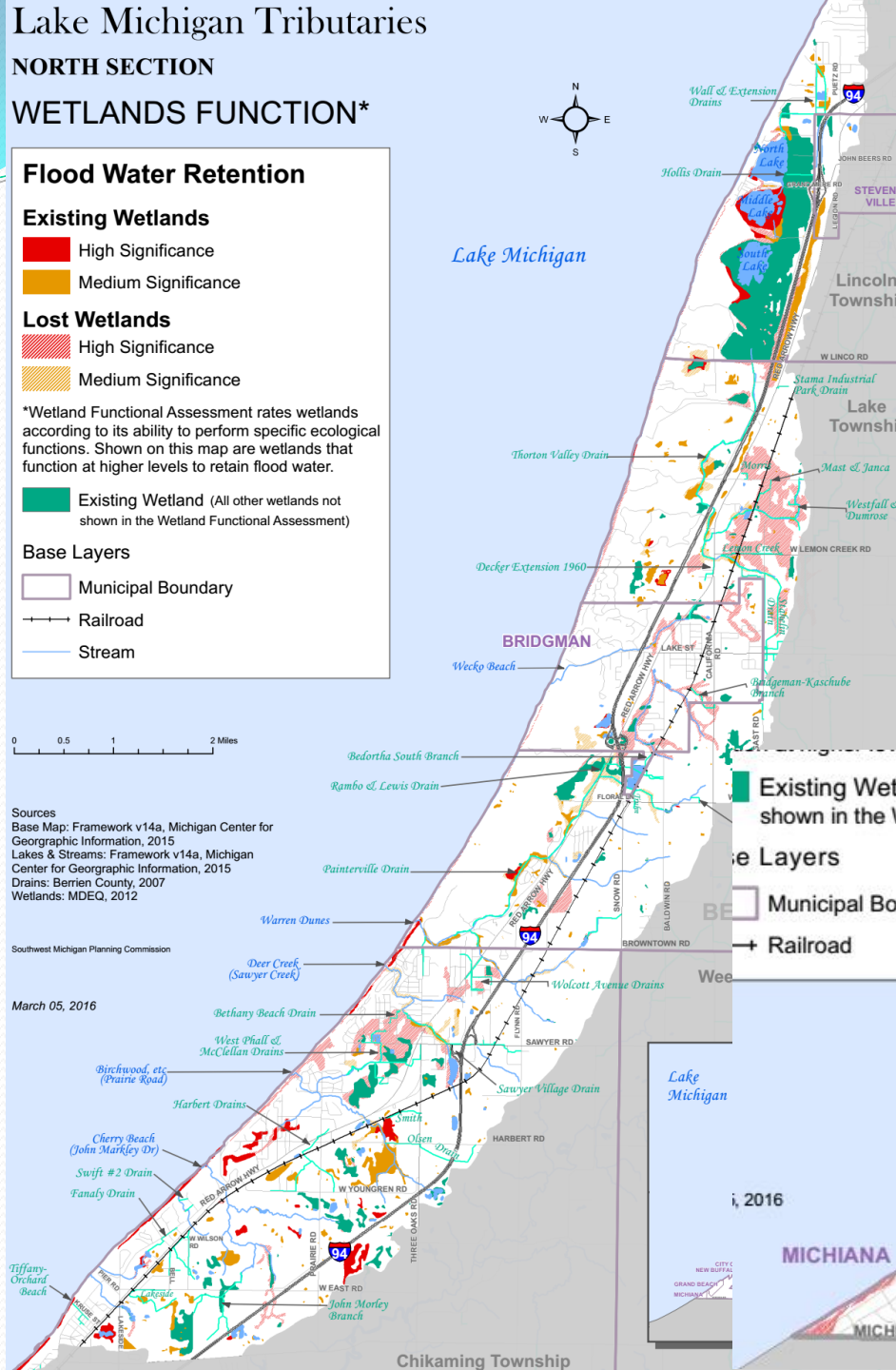
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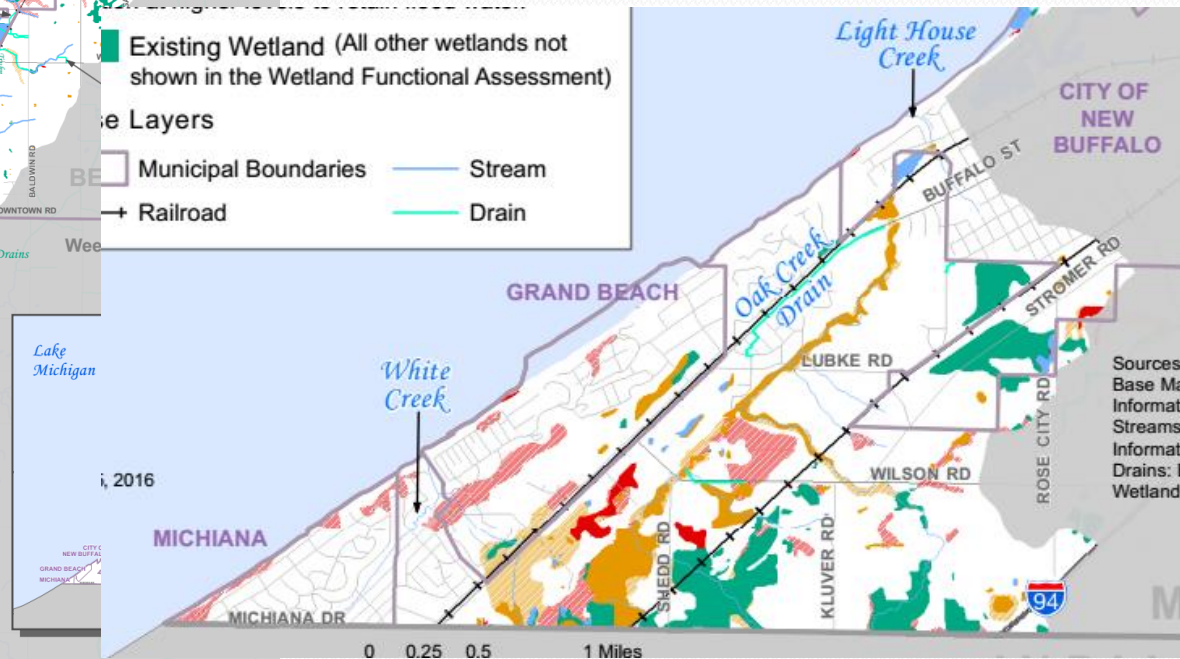
Flood Water Retention

Existing Wetland (All other wetlands not shown in the Wetland Functional Assessment)

Base Layers

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- Railroad
- Stream
- Drain

March 05, 2016



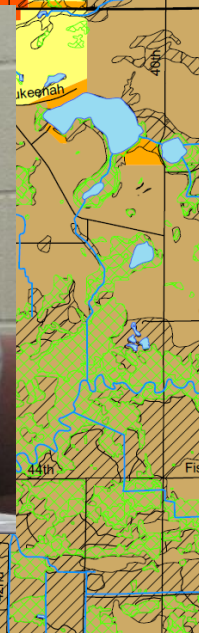
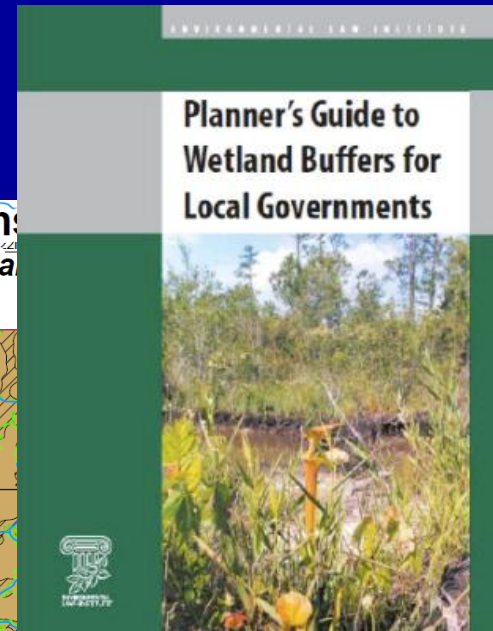
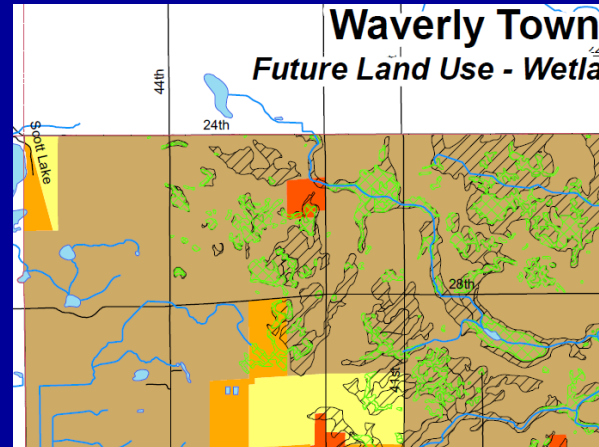
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A photograph of a wetland forest. The scene is filled with numerous tall, slender, bare trees, likely deciduous, standing in shallow water. The water is dark and reflects the trees and the overcast sky. The ground is muddy and covered with fallen branches and debris. The overall atmosphere is somber and quiet, typical of a wetland in late autumn or winter.

We NEED wetlands
We have more information
What to do?

Municipalities – Planning

Planning for Wetlands Keeping Opportunities for Protection and Restoration

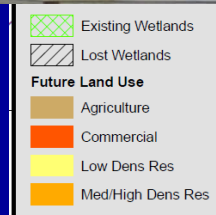


Legend

- Existing Wetlands
- Lost Wetlands

Future Land Use

- Agriculture
- Commercial
- Low Dens Res
- Med/High Dens Res



Private Landowners

- To determine if your property could qualify for various cost-share programs
- Direct your specific management needs
- Understand conservation value/estate planning

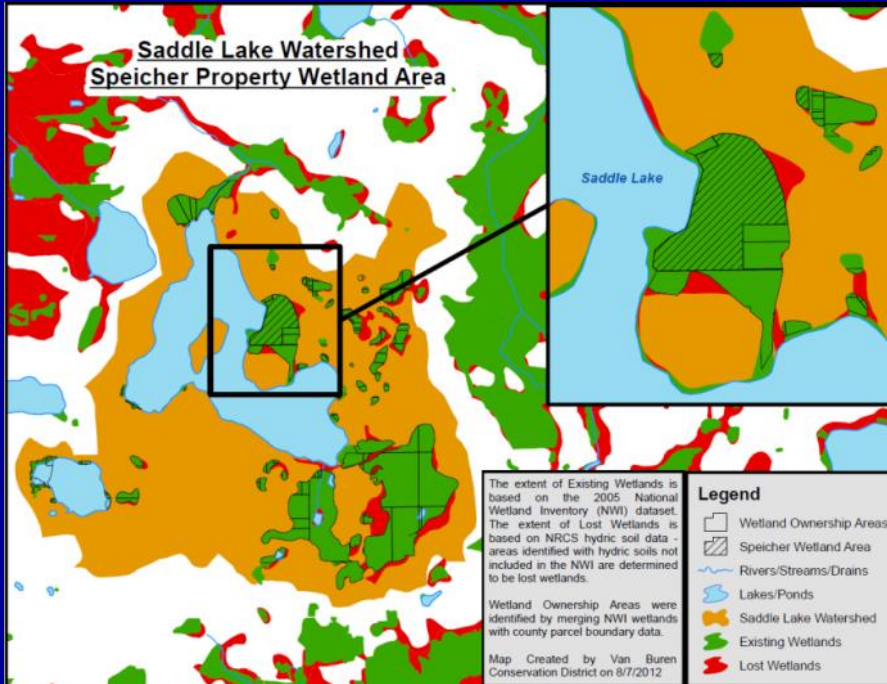


Landowners - Wetland Protection/Restoration Assistance & Incentives

- USDA Farm Bill Programs
-Wetland Reserve Program
- USFWS - Partners for Fish and Wildlife Program
- Conservation Easements



Landowner Reports



Want to know how good
YOUR wetlands are for a
particular function???

Wetland Functional Report

Eureka! Property - Paw Paw River Watershed

WETLAND AREA FUNCTIONAL SIGNIFICANCE		
EXISTING WETLAND ACRES:	236	
	<i>Significance*</i>	<i>Rank**</i>
FUNCTION:		
<u>Water Quality Combined</u>	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
<u>Habitat Combined</u>	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, Almena Twp. and Sarett Nature Center

****Behind Almena Twp. and the Pokagon Band of Potawatomi Indians

Wetlands & Water Quality

Decide, Act, Invest!



Drinking water



Swimming



Canoeing



Playing in the water



Canoeing

www.swmpc.org/water.asp

www.fotsjr.org/wetlandpartnership

keep it **BLUE**



Acknowledgements

Wetland Enhancement Methodology

- Chad Fizzell, Michigan Dept. of Environmental Quality
fizzellc@michigan.gov or 517-335-6928
- Jeremy Jones, Michigan Dept. of Environmental Quality
JONESJ28@michigan.gov or 517-241-3218

