

CLIMATE CHANGE ADAPTATION: BEST MANAGEMENT PRACTICES FOR COASTAL WETLANDS

Michigan Wetland
Association
Conference 2017



Jennifer Buchanan
Watershed Projects Director



Financial assistance for this project was provided, in part, by the Michigan Coastal Zone Management Program, Office of the Great Lakes, Department of Environmental Quality, under the National Coastal Zone Management Program, through a grant from the National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

Nonprofit formed in 1979

Over 2,200 members

We are dedicated to protecting our lakes, streams, wetlands, and groundwater through respected advocacy, innovative education, technically sound water quality monitoring, thorough research, and restoration actions.

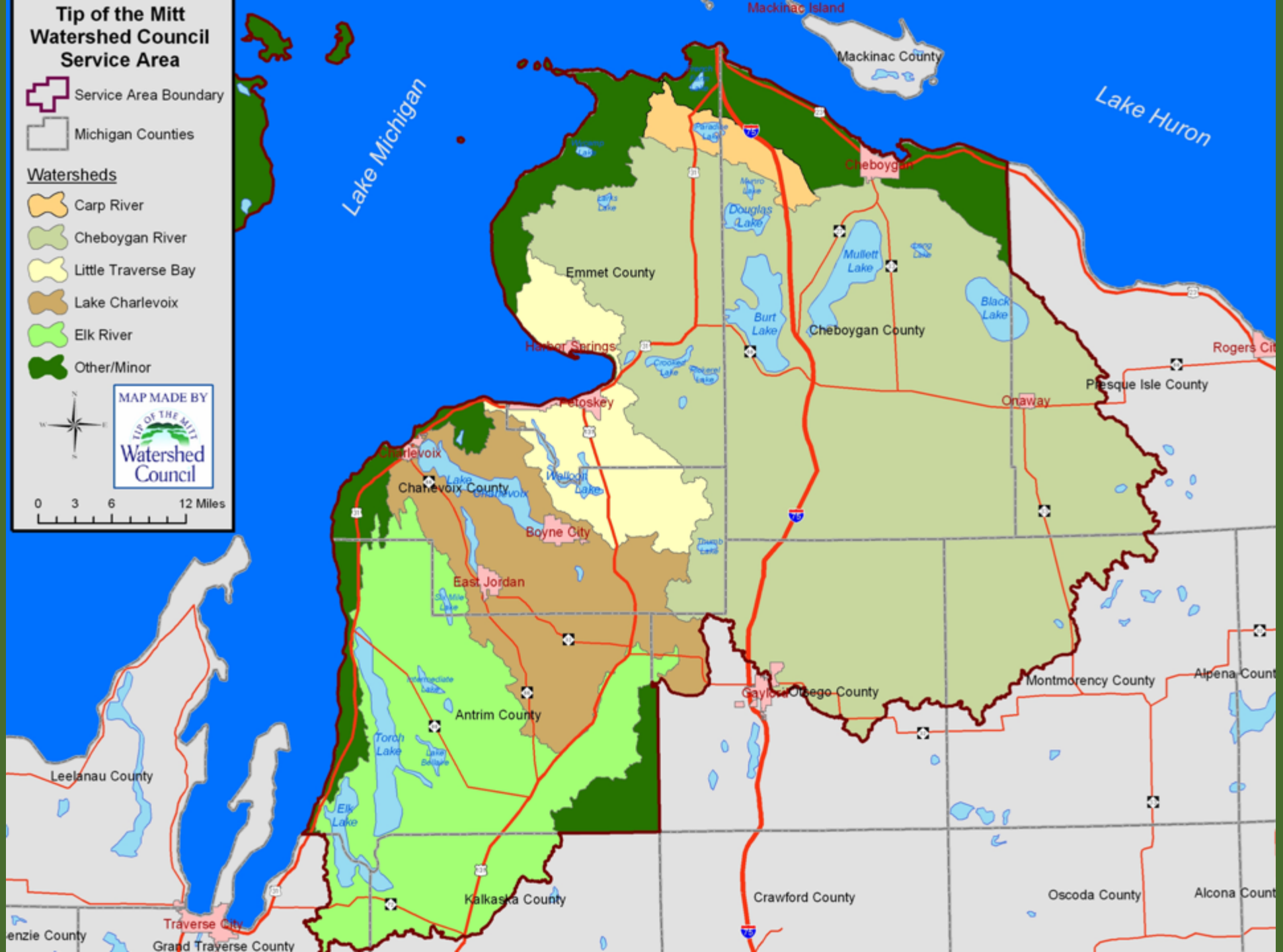


Tip of the Mitt Watershed Council Service Area

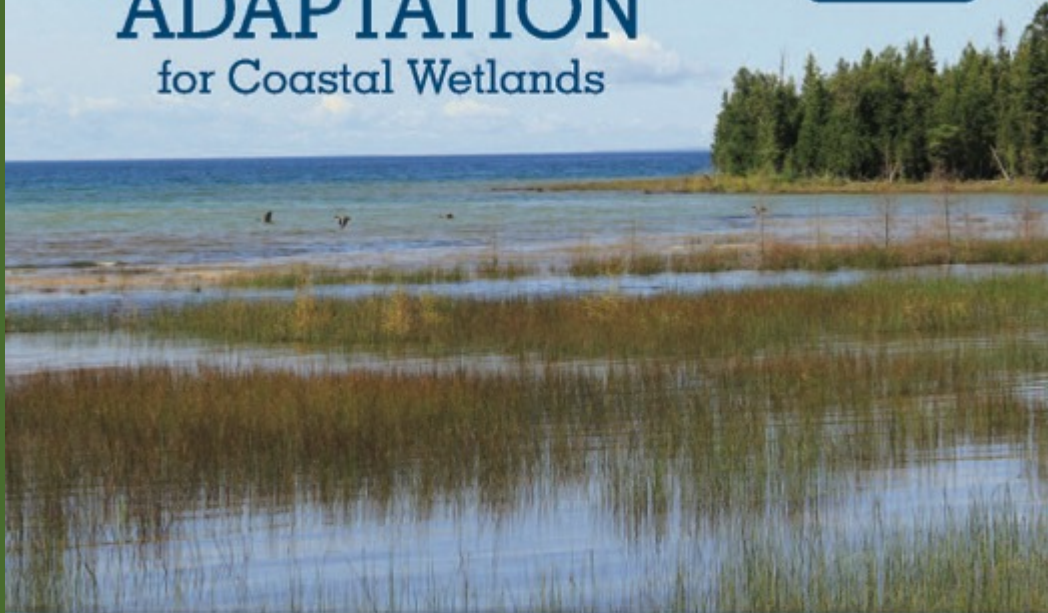
-  Service Area Boundary
-  Michigan Counties

Watersheds

-  Carp River
-  Cheboygan River
-  Little Traverse Bay
-  Lake Charlevoix
-  Elk River
-  Other/Minor



Climate Change ADAPTATION for Coastal Wetlands



A Toolkit of Best Management Practices for Coastal Wetlands in Michigan



Produced by Tip of the Mitt Watershed Council

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- 3 Major Components of Toolkit
 - Publication
 - Webinar
 - Educational Curriculum



Goal:

Make Michigan's wetlands more resilient to impacts from climate change

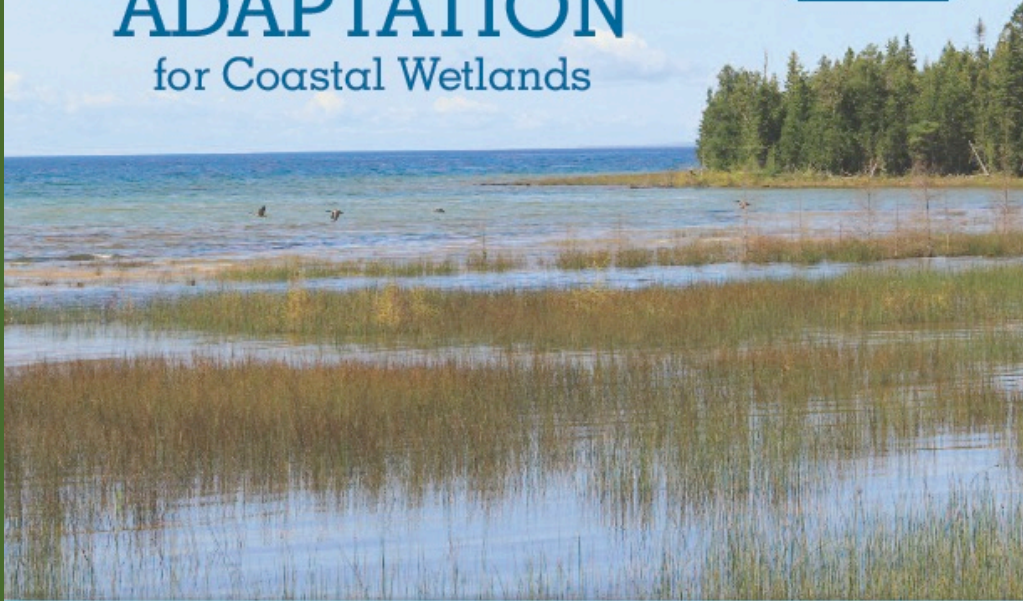
Why?

In order to ensure Michigan's wetlands and waters can continue to provide recreational, commercial and ecological benefits and services, actions need to be taken to prepare for climate impacts.

What is Climate Change Adaptation?

- Actions to better manage impacts arising from changes in the climate are known as climate change adaptations.
- Adaptations seek to lower the risks posed by the consequences of climatic changes.
- They can be technologies, procedures, practices, and behaviors taken in anticipation of impacts or in response to impacts.
- Individuals, communities, organizations, and institutions have opportunities now to protect their most important assets from the impacts of climate change.

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Climate Change Adaptation Tools

- Preservation and Protection
- Stormwater Management and Green Infrastructure
- Wetland Management, Creation and Restoration



Preservation and Protection

- Wetland and Floodplain Ordinances
- Conservation Easements
- Setbacks
- Site Plan Review
- Conservation Design



Lizzadro Lakeshore Preserve



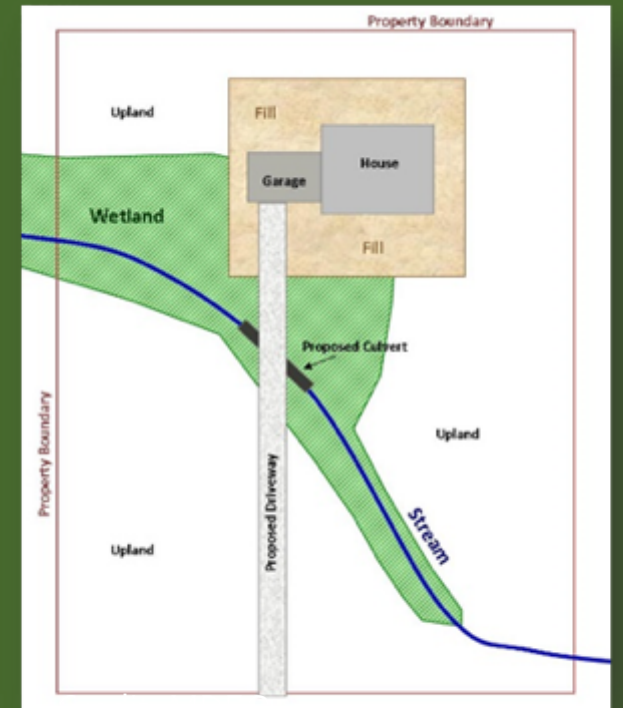
Traditional Development

Grid layout with little regard for natural and special features.



Cluster Development (AKA Open Space Development or Conservation Design)

Trees, wetlands, scenic views, and natural features are retained. All homes have lake views. Single-loaded roads provide more privacy and better views. Trails make a pedestrian and recreation-friendly development.



Credit: MDEC

Stormwater Management and Green Infrastructure

Rain Gardens



Rain Barrels



Examples of Porous Pavements



Permeable Pavers

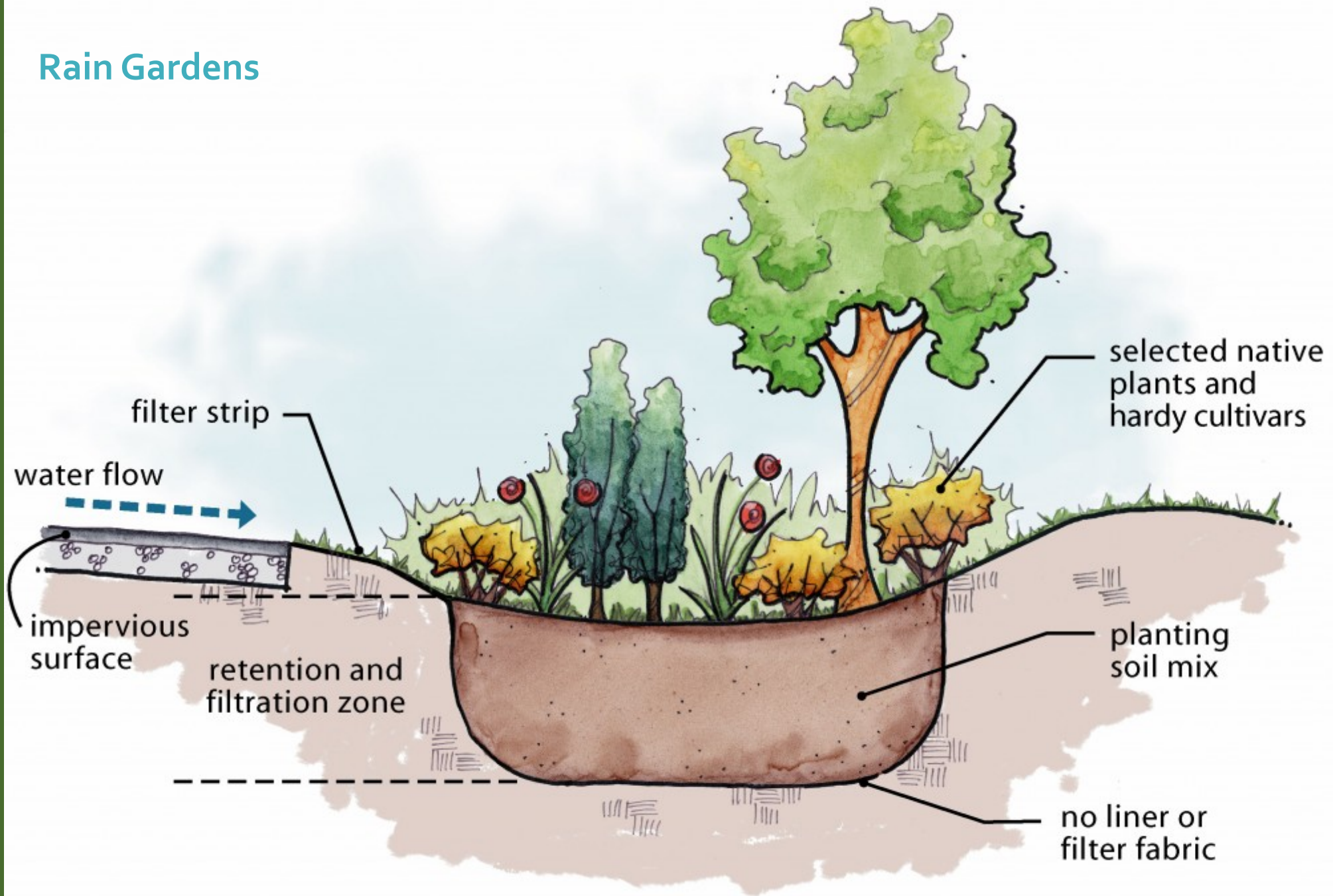


Permeable Concrete

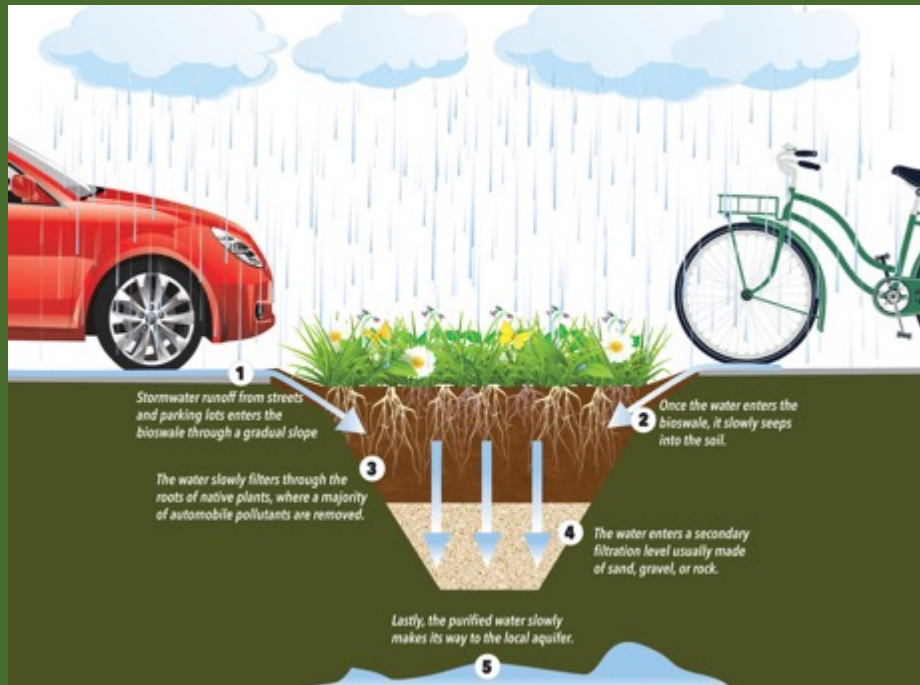


Grass Pavers

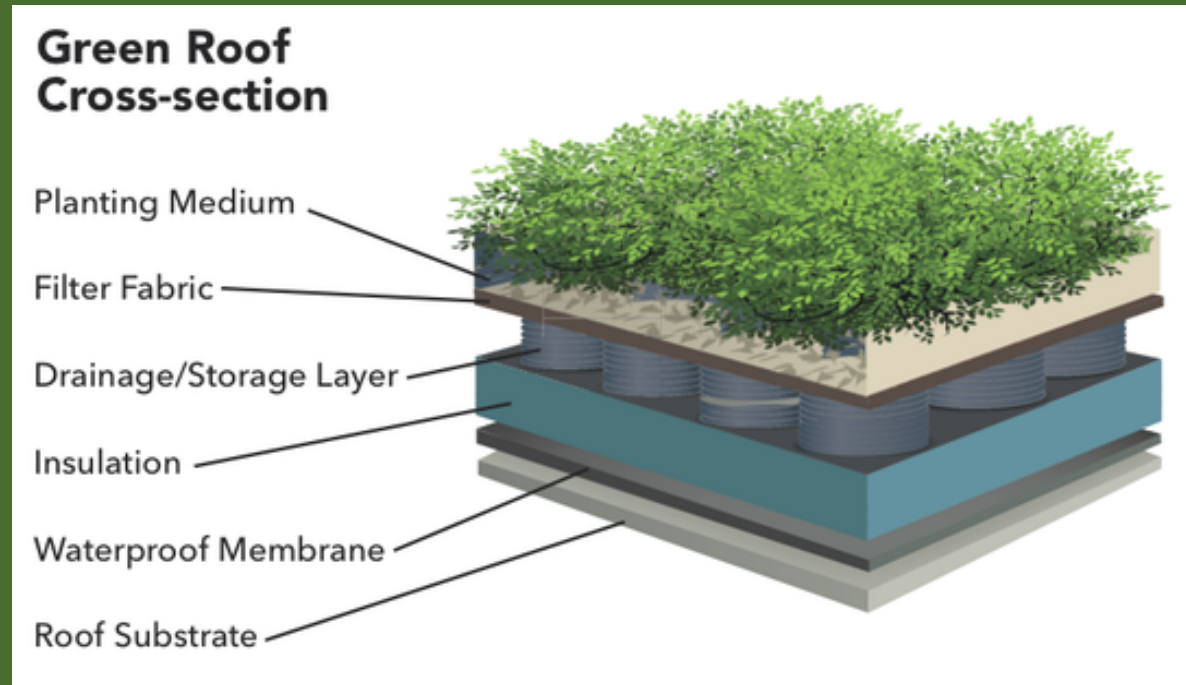
Rain Gardens



Stormwater Management and Green Infrastructure



Bioswales

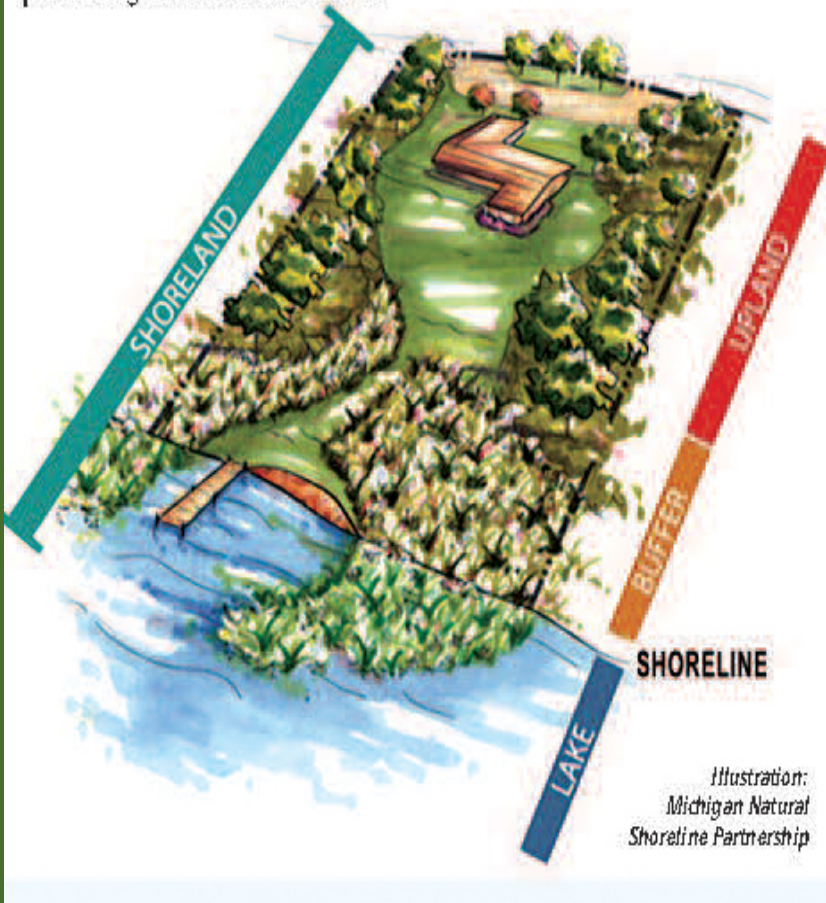


Green Roofs

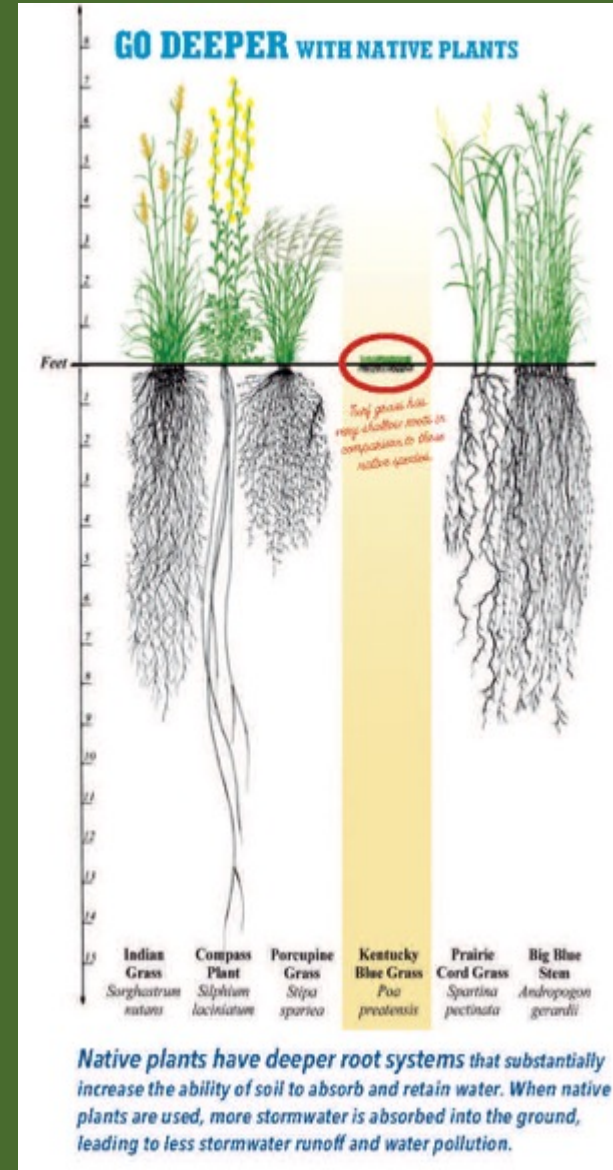
Stormwater Management and Green Infrastructure

Shoreland Properties

Each section of your shoreland property serves a function in protecting our water resources.

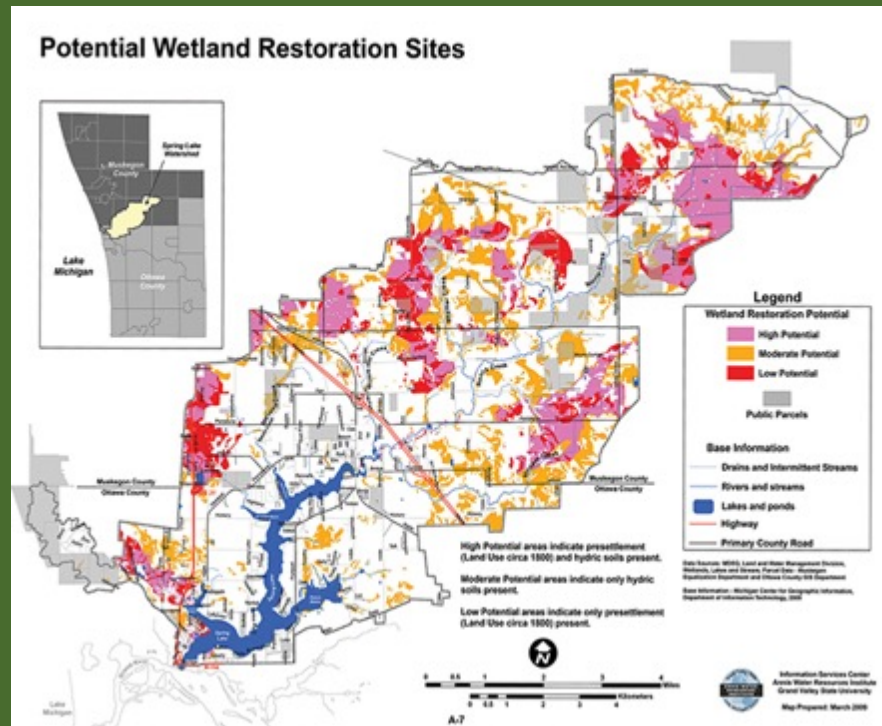


- Greenbelts/Riparian Buffers
- Natural Shorelines
- Native Landscaping



Wetland Management, Creation and Restoration

- Invasive Species Management
- Restoration
- Landscape Level Assessments
- Stormwater Wetlands



Stormwater Wetland



Great Lakes Wetlands



Climate Change ADAPTATION Lessons



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The statements, findings, conclusions, and recommendations are those of the authors and do not necessarily reflect the views of the Department of Environmental Quality and the National Oceanic and Atmospheric Administration

Great Lakes Wetlands – Climate Change Adaptation Lessons

A mini-unit to help middle school students understand how climate change affects coastal wetlands in the Great Lakes region.

The five lessons included in this unit are meant as an introduction to further research and education about how climate change impacts wetlands in Michigan, including Great Lakes coastal wetlands.

Purpose:

Each lesson offers simple instruction, a variety of resources, and focus questions to ensure that teachers can offer students both breadth and depth of content.

Lesson 1: Wetlands in the Great Lakes Region: What are wetlands and how are freshwater coastal wetlands unique?

Lesson 2: Climate Change in the Great Lakes: How does climate change affect the Great Lakes region?

Lesson 3: Coastal Wetland Scenarios: How does climate change affect Great Lakes coastal wetlands?

Lesson 4: Best Management Practices (BMPs): What can humans do to help coastal wetlands “adapt” to changes?

Lesson 5: Taking Action: What stewardship practices help protect and restore coastal wetlands?

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CLIMATE CHANGE ADAPTATION:
BEST MANAGEMENT PRACTICES
FOR COASTAL WETLANDS


Hosted by
TIP OF THE MICHIGAN
Watershed
Council

Guest Speakers include:




Dr. Donald G. Uzarski Richard Rood Ralph Reznick, P.E. Anne Garwood


Climate Change
ADAPTATION
for Coastal Wetlands



A Toolkit of Best Management Practices for Coastal Wetlands in Michigan



Produced by Tip of the Michigan Watershed Council



Download a copy today at:
www.watershedcouncil.org

For hard copies, contact the Watershed Council office at
231-347-1181.

Thank You

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