CREP Prioritization: Mapping Sediment Loading Risk in the Saginaw Bay Basin

Background

Michigan State University Extension (MSUE) is collaborating with the State of Michigan and local stakeholders to re-establish the Conservation Reserve Enhancement Program (CREP) in Michigan. To aid in prioritizing lands eligible for CREP enrollment, the Institute of Water Research (IWR) at MSU developed township-scale maps of sediment loading risk for the Saginaw Bay basin. This book organizes those maps at the township scale.

Data -

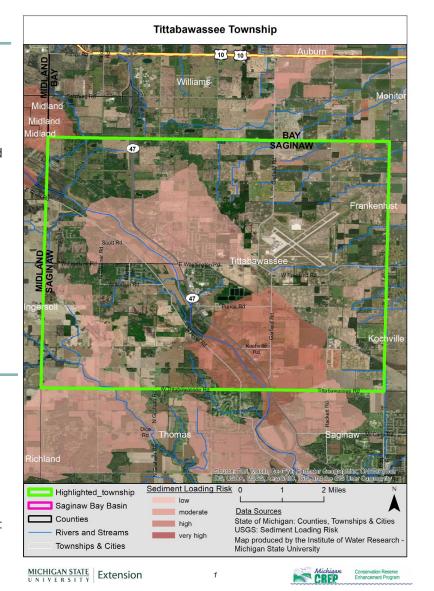
The maps are based upon data from the United States Geological Survey's (USGS) SPAtially Referenced Regression On Watershed attributes (SPARROW) model*. The model uses observations, land use characteristics, and statistical relationships, among other variables, to estimate pollutant loads to streams and rivers. The data in this map book represents incremental sediment load contribution for each small catchment in the basin (see image at right), i.e. the amount of sediment load that originated in a particular area (not the total, accumulated amount moving through the stream in that area).

Contacts -

Please direct questions about MSUE's project to: **Sarah Fronczak**Environmental Management Educator
Michigan State University Extension
froncza3@msu.edu

Please use the URL below to learn more about the SPARROW model, and direct questions about the maps to: **Glenn O'Neil**

Environmental Scientist
Institute of Water Research - Michigan State University
oneilg@msu.edu

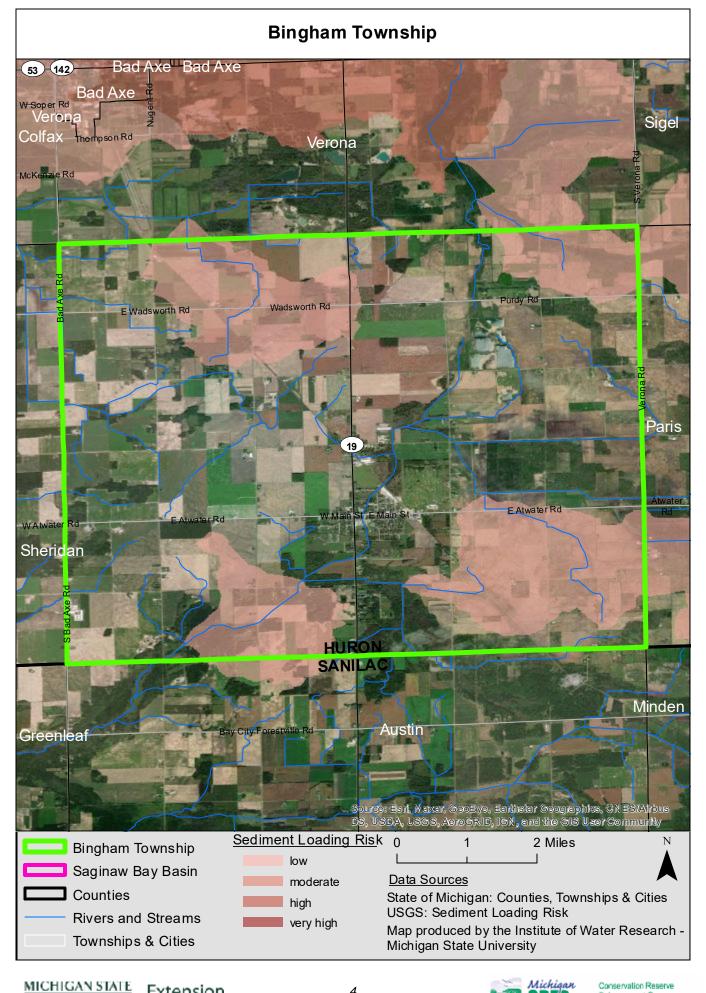


* https://www.sciencebase.gov/catalog/item/5cbf5150e4b09b8c0b700df3



Table of Contents

City of Bad Axe 53 Verona Colfax Colfax 142 W Soper Rd Verona Thompson Rd McKenzie Rd Source: Esrl, Maxer, Geozye, Zarthstar Geographics, GN 53/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 City of Bad Axe low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University



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Bloomfield Township Goré Huron Dwight Rubicon Verona Sigel Sand Beach Source: Es.1, N.axar, Geoeye, Earlister Geographics, CN ES/Airbus DS, USDA, USGS, Aero GRIC, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles **Bloomfield Township** low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities

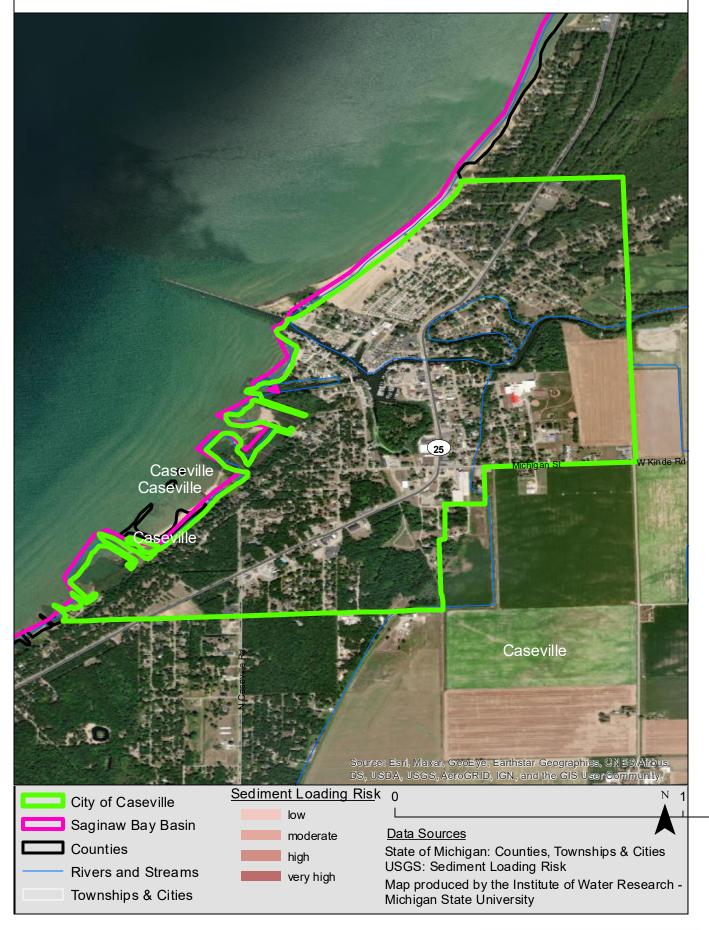


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Brookfield Township Winsor Olive 應 airhaven Sebewaing Rd Main St Sebewaing Rd St ts Grant Sebewaing HURON TUSCOLA Elkland E Bay City Forestville Rd Bay City Forestville Rd Elmwood Source: Earl, Maxar, GeoEye, Earlistar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community 2 Miles Columbia Sediment Loading Risk 0 Brookfield Township low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University



City of Caseville





Caseville Township







Chandler Township Oak Beach Ro Hume Lake Case<mark>v</mark>ille Filion Rd McKin<mark>l</mark>ey Colfax gource: Esri, Maxar, Geoeye, Earthstar Geographiss, GN ES/Alrbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Chandler Township low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University

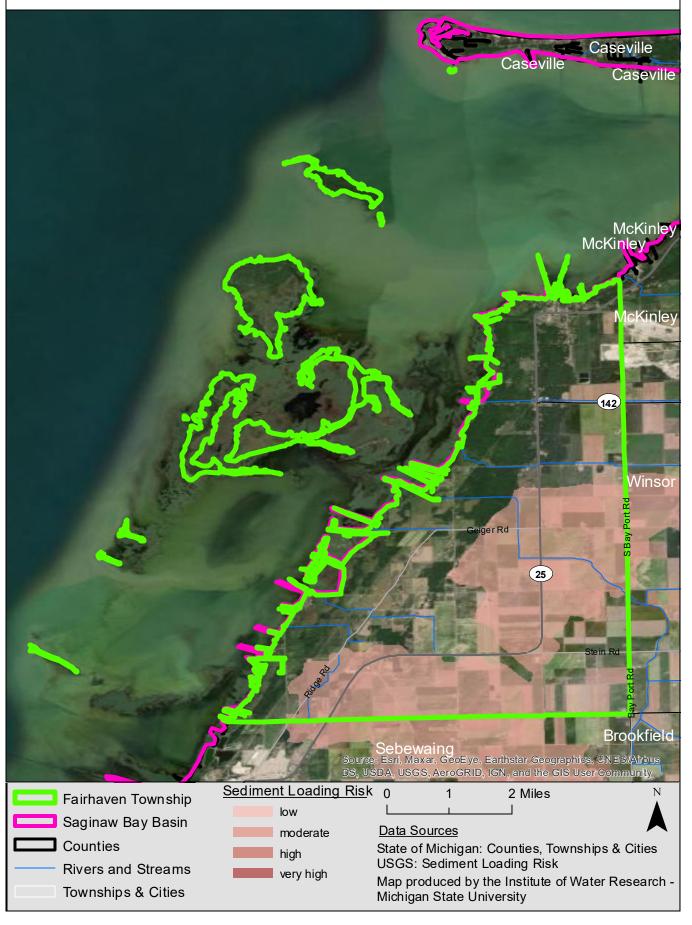


Colfax Township Lincolr Meade Chandler **(53**) Verona Learman Bad Axe Oliver W Soper Rd 53 AcKenzie Rd Verona W Wadsworth Rd Sheridan Grant Bingham Source: Esrl, Maxar, GeoEye, Earthstar Geographies, GNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Colfax Township low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University



Dwight Township Pointe Aux Port Austin Port Austin Pointe Aux Barques Barques Port Austin ustin E Spring S Port Austin Huron lume 53 Beach Rd Crockard W Kinde Rd Lincoln Meade Bloomfield Source: Est, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles **Dwight Township** low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University

Fairhaven Township



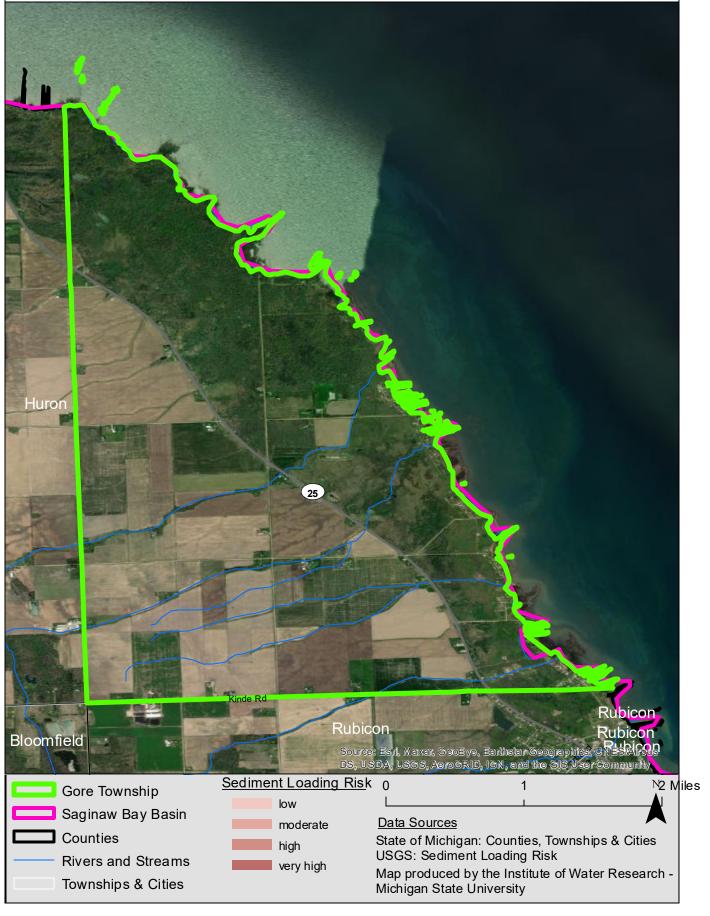
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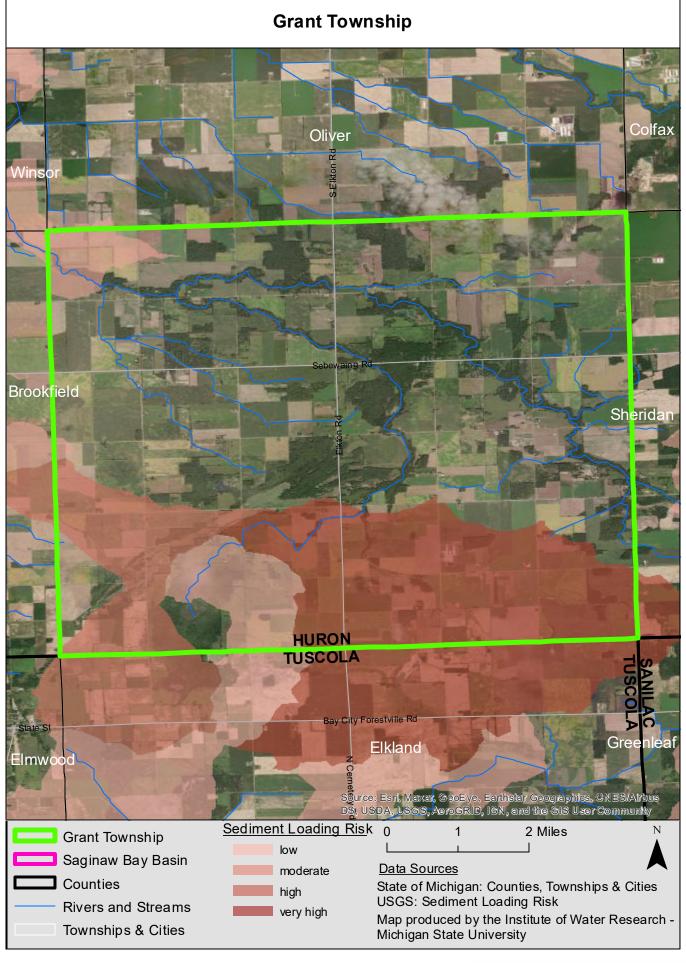
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12

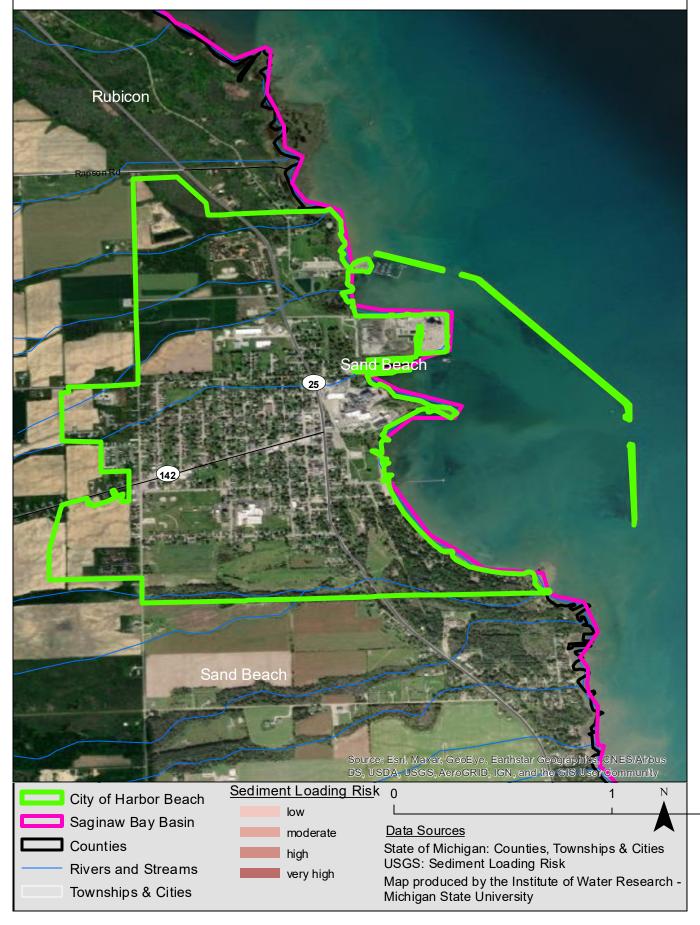
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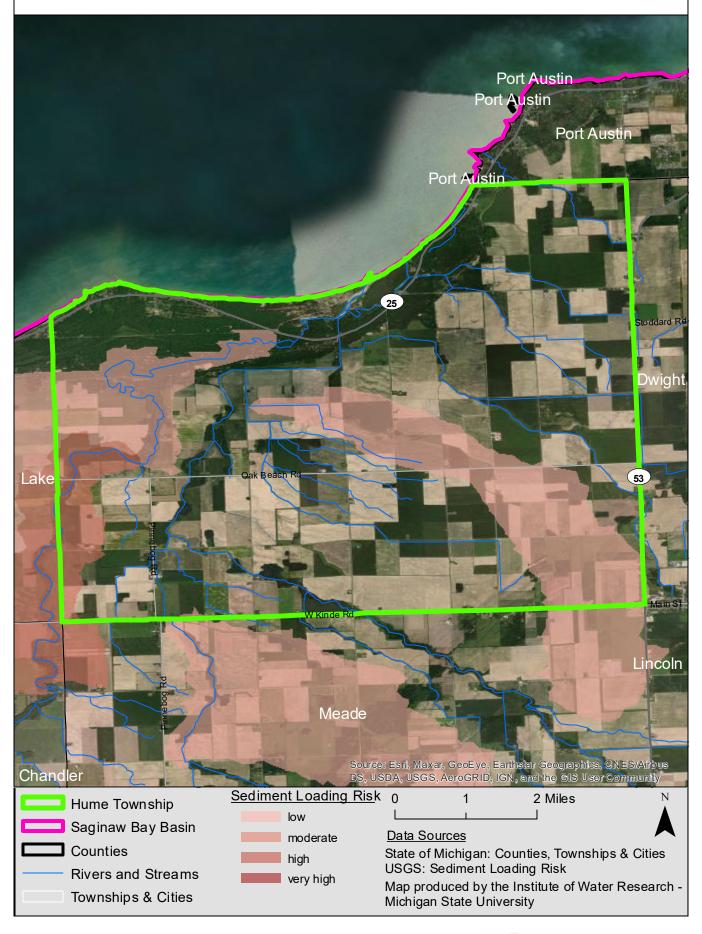


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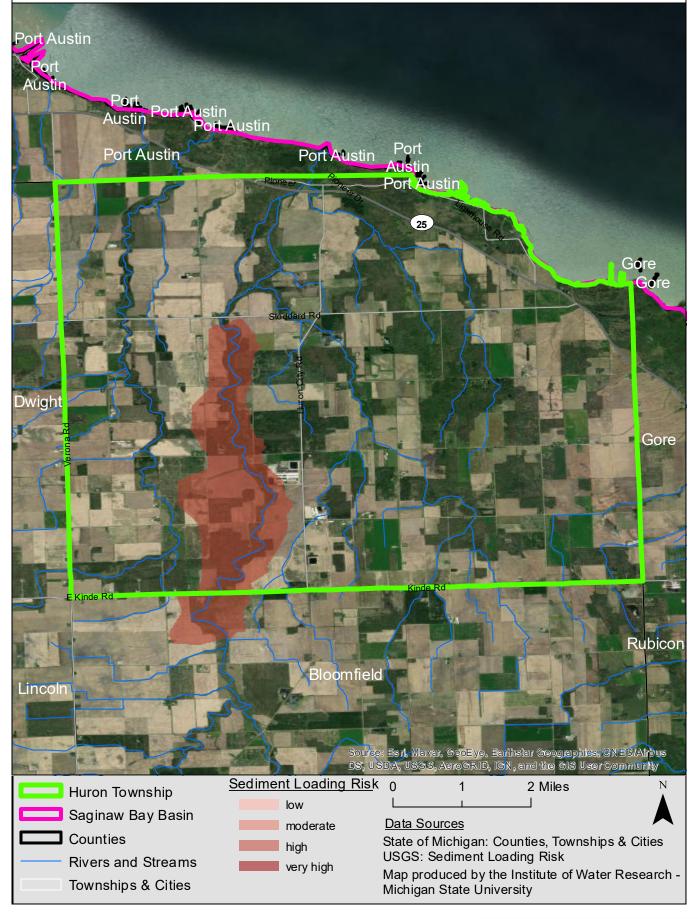




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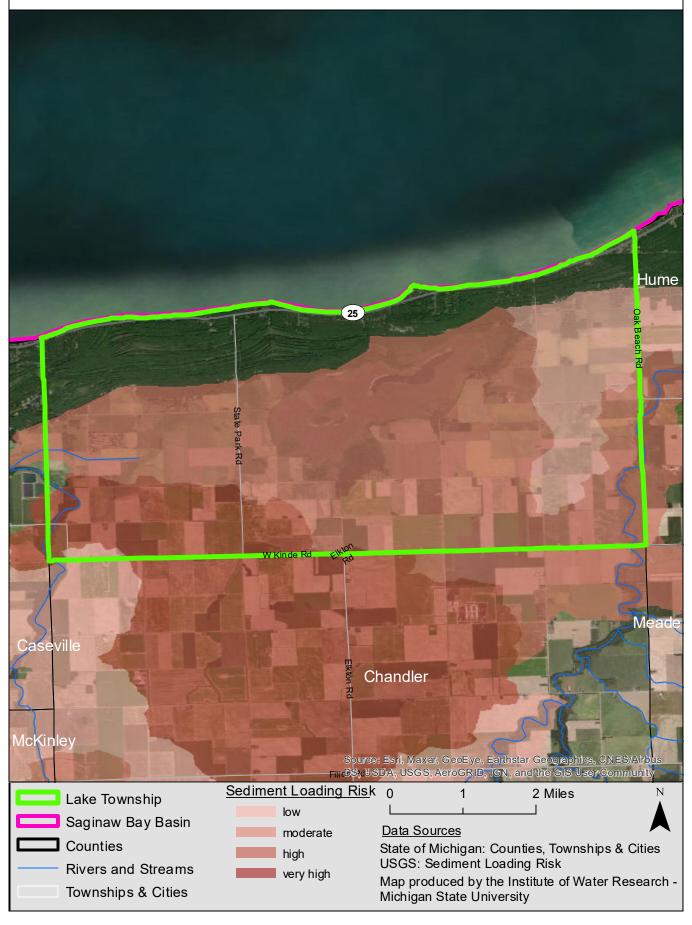


Huron Township





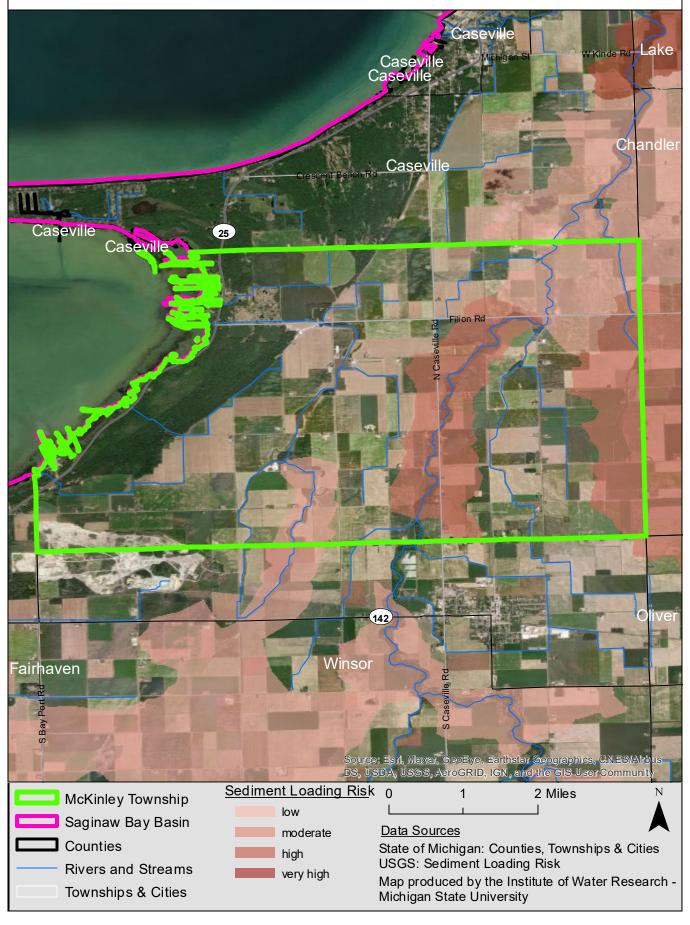
Lake Township



Lincoln Township Beach F Dwight Hume W Kinde Rd Bloomfield 53 Meade Verona Sigel Colfax Learman Rd 142)-Source: Esti, Maxar, GeoEye, Earlinstar Geographies, GN 53/Airbus DSÇUSDA, USGS, AeroGRID, IGN, and the GIS User Community Colfax Sediment Loading Risk 0 2 Miles Lincoln Township low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University



McKinley Township



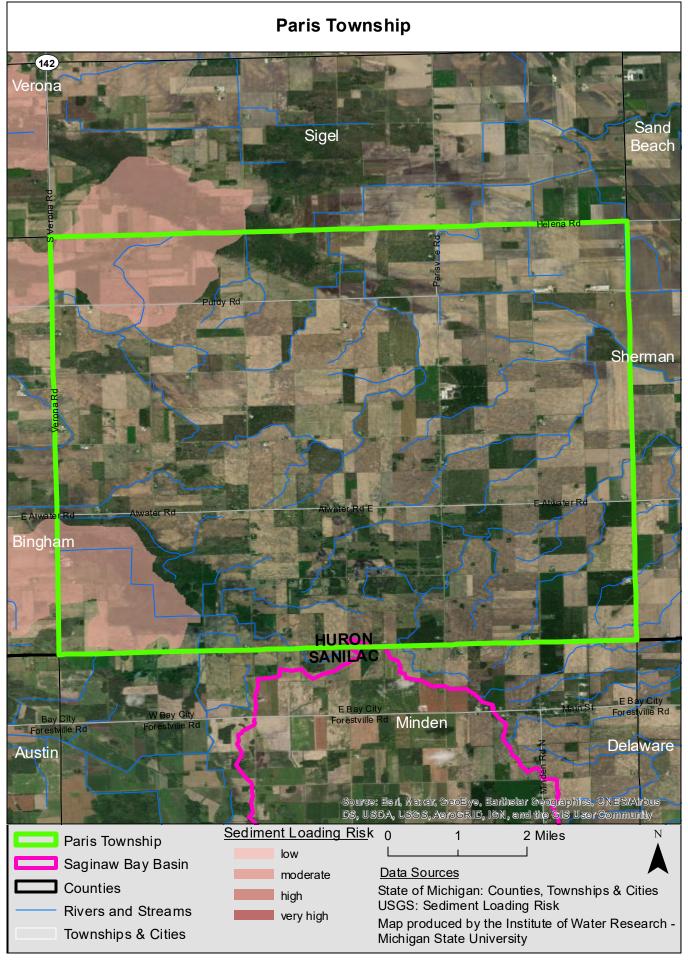


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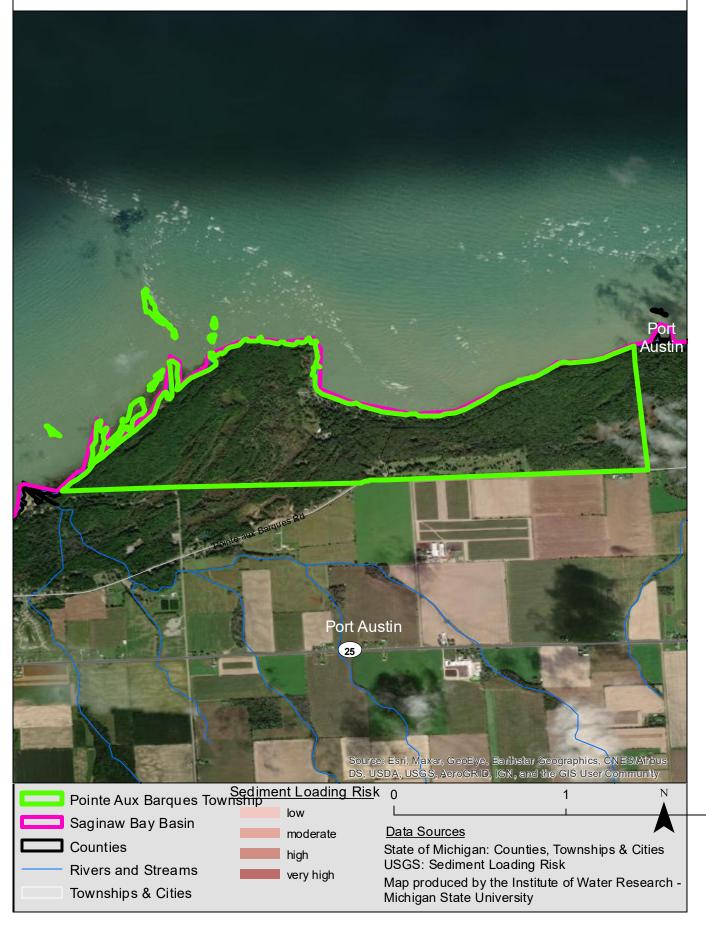


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Pointe Aux Barques Township



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Port Austin Township

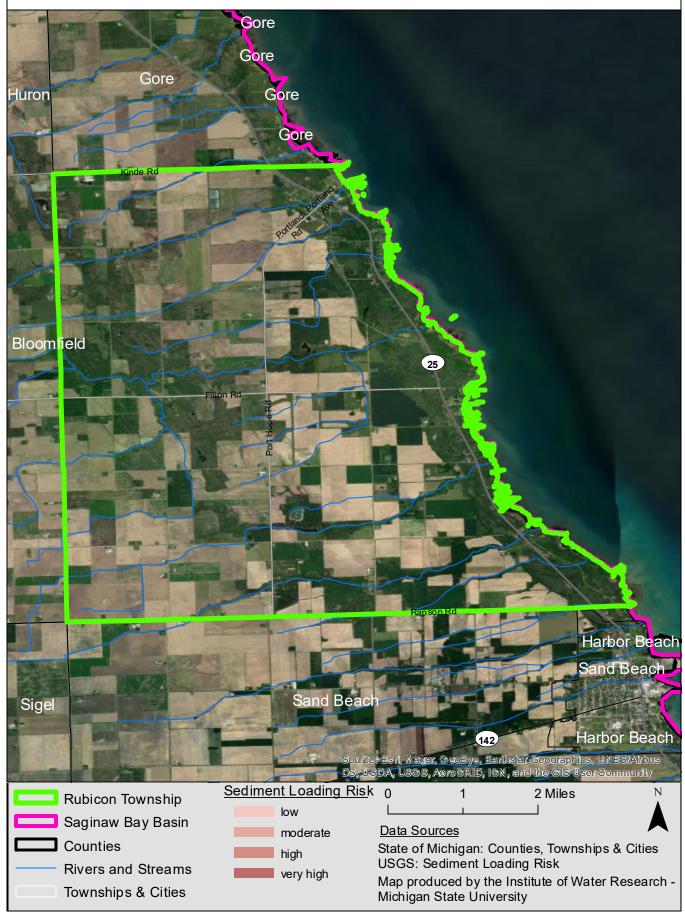




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Rubicon Township



Sand Beach Township Rubicon Rubicon Rubicon Bloomfield Rubicon Rubicon Harbor Beach Harbor Beach Beach Harbor Beach 142 25 Sigel Sherma **Paris** Sherman Sherman Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Sand Beach Township low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University



Sebewaing Township Fairhaven Fairhaven Winsor ⁻airhaven Fairhaven Brookfield HURON TUSCOLA E Bay City W Bay City 25 Forestville Rd Columbia Elmwood 138 Source: Esri, Maxar, GeoEye, Earthstar Geographiss, GN ES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Sebewaing Township low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University

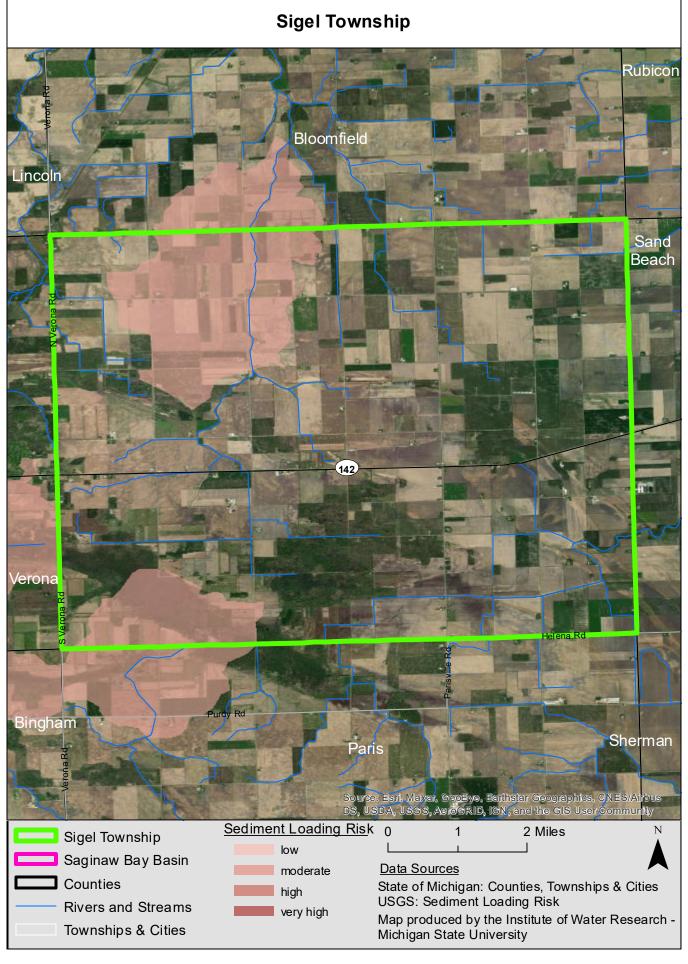


Sheridan Township Bad Axe W Soper Rd Verona Thompson Colfax Oliver McKenzie Rd Verona W Wadsworth Rd 53 Grant Bingham HURON SANILAC Austin Bay City Forestville Rd Greenleaf Elkland Source: Esrl, Maxar, Geoeye, Earlinstar Geographics, CN ES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Sheridan Township low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University



Sherman Township Sand Beach Sand Sigel Beach 25 **Paris** HURON SANILAC Delaware Minden Source: Esrl, Maxar, GeoEye, Earthstar Geographtes, GN ES/Airbus ES, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Sherman Township low Saginaw Bay Basin **Data Sources** moderate Counties State of Michigan: Counties, Townships & Cities high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University







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