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 -

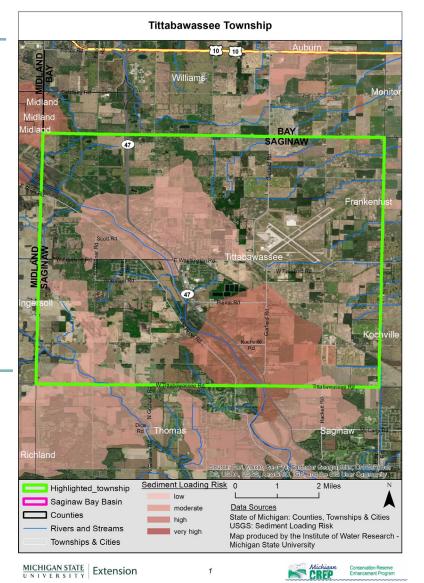
The maps are based upon data from the United States Geological Survey's (USGS) SPAtially Referenced Regression On Watershed attributes (SPARROW) model*. The model uses observations, land use characteristics, and statistical relationships, among other variables, to estimate pollutant loads to streams 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



<u>jæmsu.edu</u>

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



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Austin Township E Atwater Rd Bingham **Paris** Sheridan SANILA 19 Minden Greenleaf 81 Evergreen Wheatland Argyle Source: Est, Maxar, Geollye, Eathistar Geolgraphies, GN ES/Airbus DS, USDA, USGS, AeroGRID, 16N, and the GIS User Community Sediment Loading Risk 0 2 Miles Austin 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



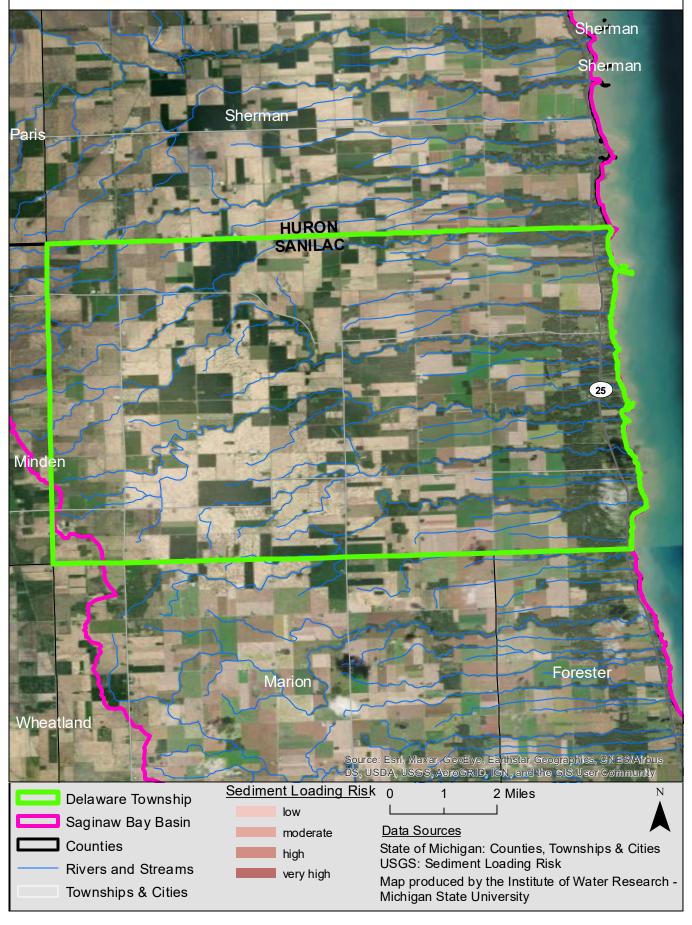
Bridgehampton Township Marion Deckerville Rd Wheatland Forester Rd Grove Rd Custe Sanilac (46) Washington Washington Rd Watertown Source: Esrl, Maxar, Geoegye, Earthstar Geographics, CNES/Airbus DS, USDA, USOS, AeroGRID, IGN, and the GIS User Community Bridgehampton Township Sediment Loading Risk 0 2 Miles 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



Custer Township Marion Wheatland Argyle Forester Rd Moore Bridgeh<mark>a</mark>mpton Sandusky 46 Watertown Washington Elmer Source: Esri, Maxar, Geoseye, Sarthstar Geographies, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Custer 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



Delaware Township



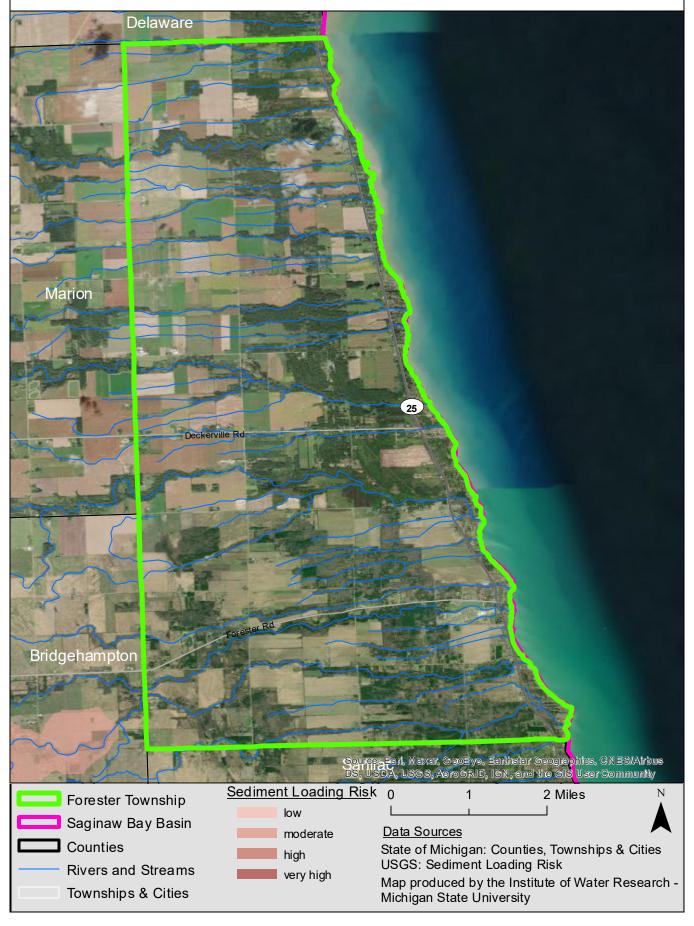
Elmer Township Custer Moore Lamotte 46 ∕Va<mark>t</mark>ertown W Frenchline Rd W Marlette Marlette Elk Flynn Source: Esrl, Maxar, Geoleye, Earthstar Geographies, GN ES/Airbus DS, USDA, USGS, AeroGRIC, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Elmer Township low Saginaw Bay Basin **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

Evergreen Township Austin Greenleaf 81 Elkland Argyle Rd Argyle 53 eckerville Rd E Deckerville Ro Novesta amotte Kingston Source: Esrl, Maxar, Geosye, Barthstar Geographies, GN 53/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles **Evergreen 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



Flynn Township W Frenchline Rd Elmer Marlette V Marlette Rd Speake Burnside Maple Valley Brown City Source: Esrl, Maxar, GeoEye, Earthstar Geographics, GN ES/Alrous DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Maple Valley Sediment Loading Risk 0 2 Miles Flynn 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

Forester Township







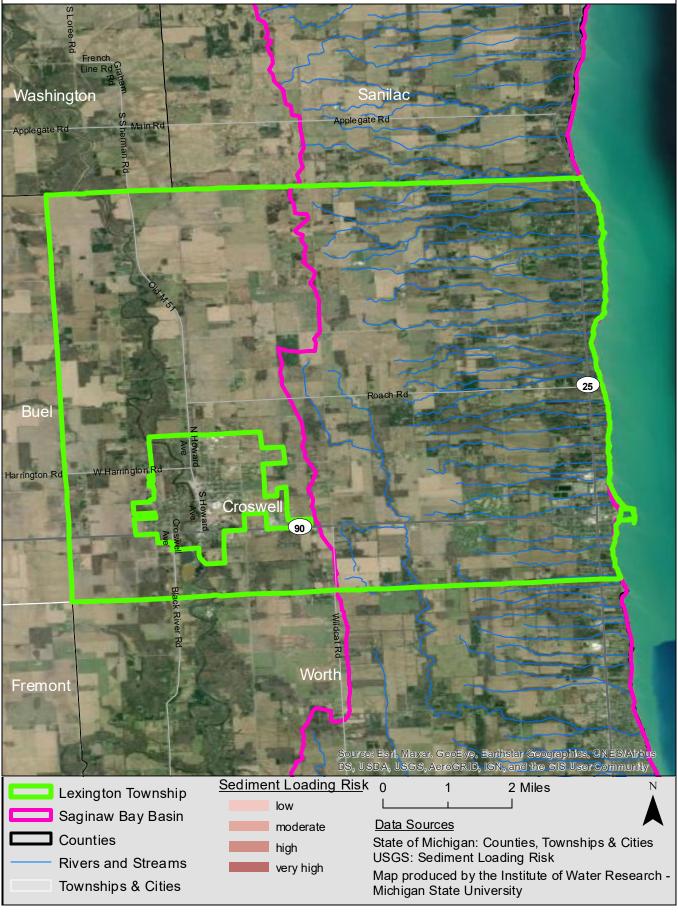
Greenleaf Township Bingham Sheridan Grant HURON SANILAC Austin City Forestville Rd 53 Elkland rgyle vergreen Novesta Argyle Rd urse: Esrl, Maxar, GeoEye, Earthstar Geographtes, GNES/Atrous , USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Greenleaf Township low Saginaw 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



Lamotte Township Evergreen Deckerville Rd Novesta Kingston Moore Washington St 53 46 Marlette Elmer Koylton Source: Esrl, Maxer, GeoEye, Earthstar Geographics, GN 53/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Lamotte Township low Saginaw Bay Basin **Data Sources** moderate State of Michigan: Counties, Townships & Cities Counties high USGS: Sediment Loading Risk Rivers and Streams very high Map produced by the Institute of Water Research -Townships & Cities Michigan State University

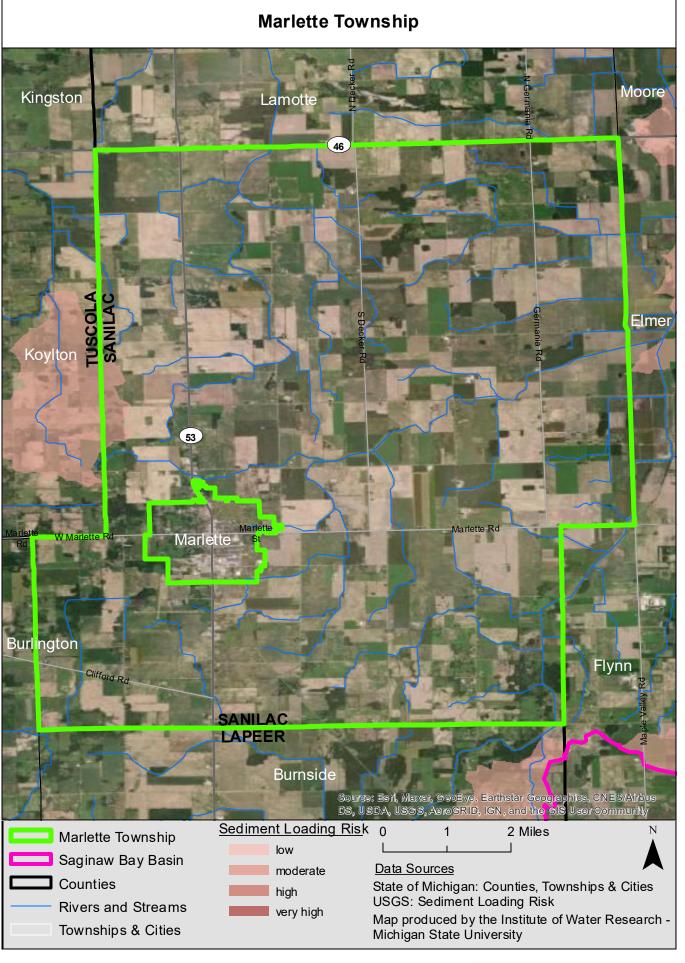


Lexington Township



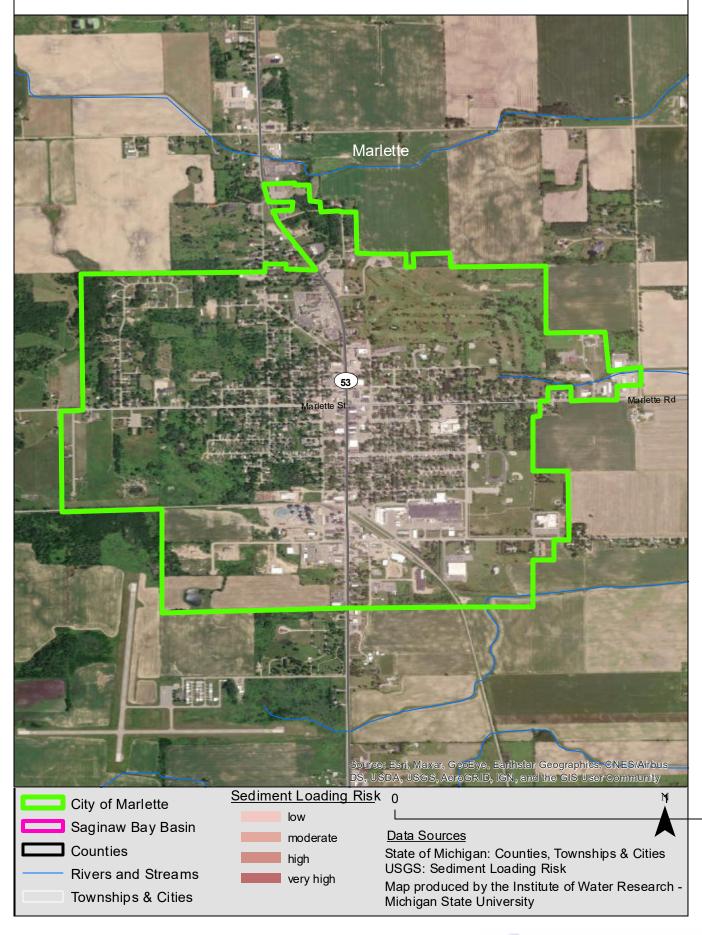
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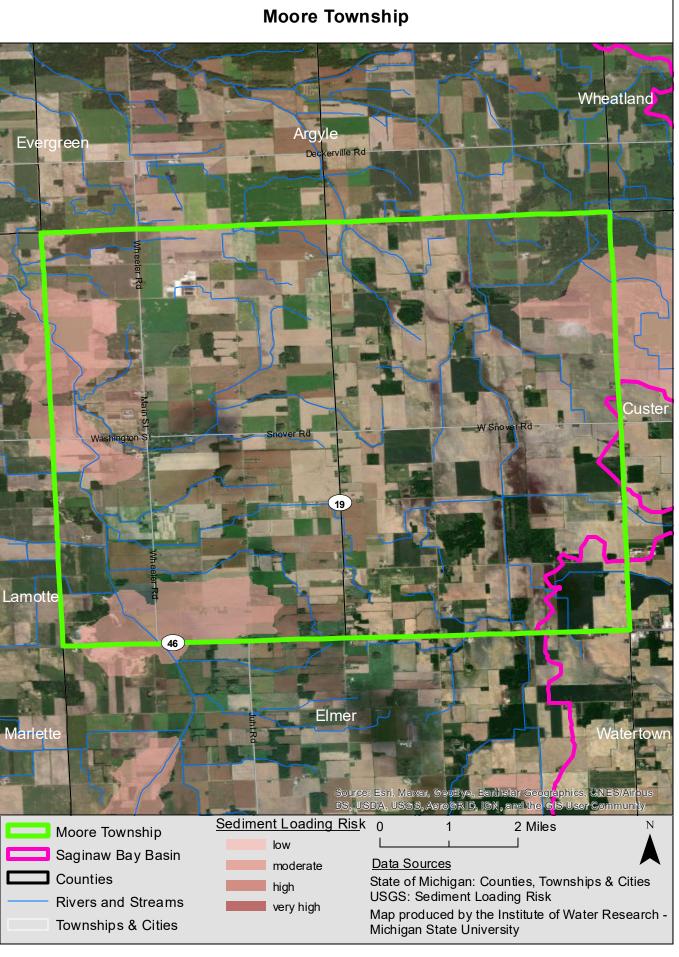
City of Marlette



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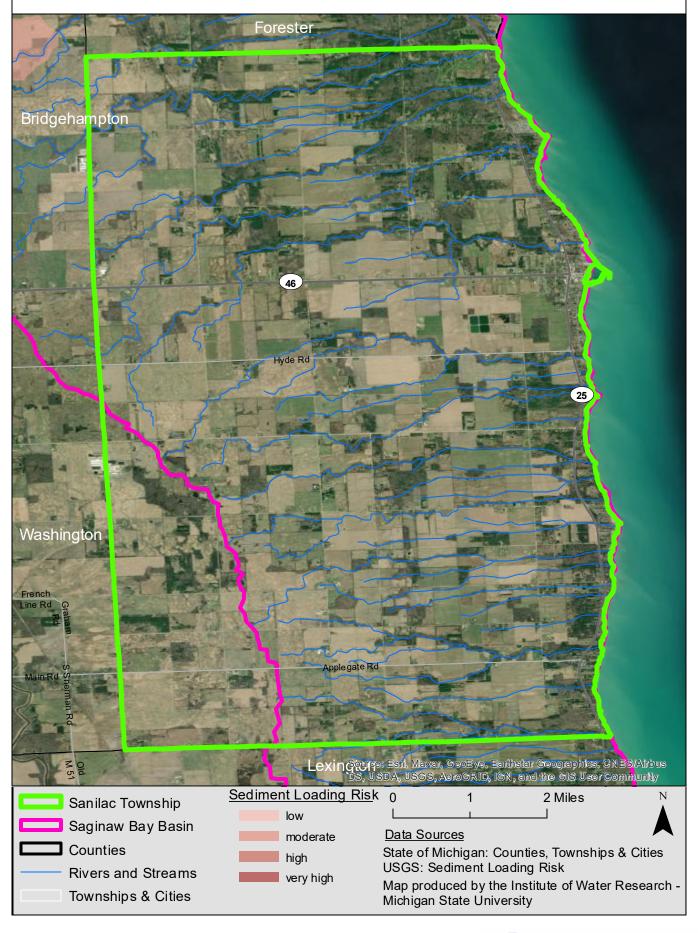
Minden Township Sherman Paris Bingham SANILAC EBay City Forestville Rd Forestville Rd Delaware Austin Marion Wheatland Argyle Source: Esrl, Maxar, Geoleye, Earthstar Geolgraphies, GN ES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Minden Township low 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







Sanilac Township





Washington Township Bridgehampton Cust 46 Sanilac Washington Rd rench Line Rd Watertown Lexington Source: Esri, Maxar, GeoEye, Earthstar Geographies, GNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Stilson Rd Sediment Loading Risk 0 2 Miles Washington 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



Wheatland Township Delaware Minden Austin Marion Argyle Bridgehampton Custer Moore Forester Rd Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Wheatland 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



Worth Township

