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 -

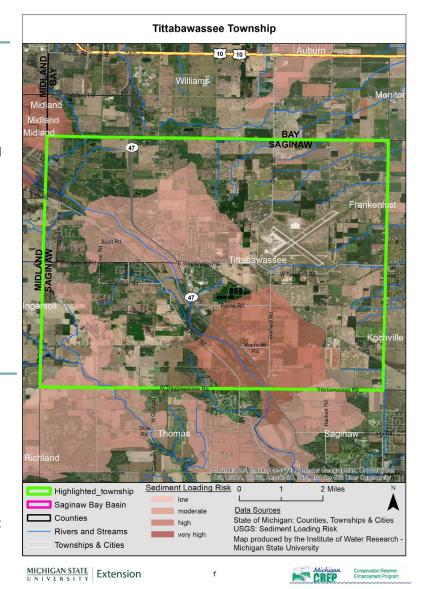
The maps are based upon data from the United States Geological Survey's (USGS) SPAtially Referenced Regression On Watershed attributes (SPARROW) model*. The model uses observations, land use characteristics, and statistical relationships, among other variables, to estimate pollutant loads to streams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

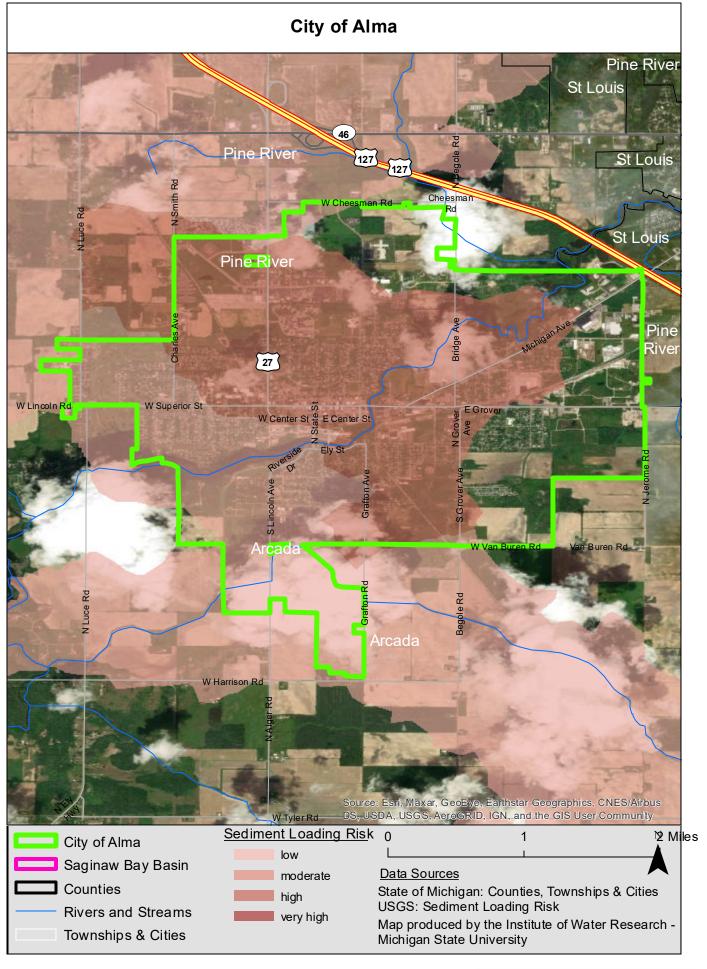


* https://www.sciencebase.gov/catalog/item/5cbf5150e4b09b8c0b700df3



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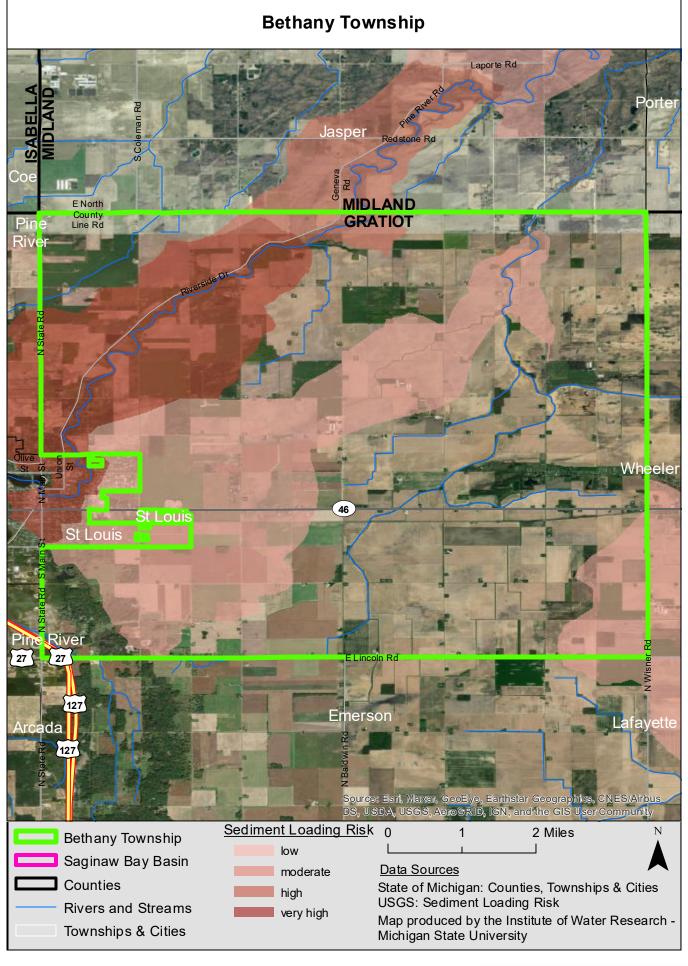
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Arcada Township St Louis Pine River W Cheesman Pine River Seville 127 St Louis Pine River Alma Pine River V Lincoln Rd W Superior St 27 W Van le Rd **E**merson Sumner lthaca New Newar Haven North Star Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Arcada 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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Hamilton Township Lakefield Lafayette Emerson N Wisner Rd North Marion Washington Chapin Elba Source: Esri, Maxar, G<mark>eoEye, Earthstar Geographics, CNES/</mark>Air DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community (57) Sediment Loading Risk 0 2 Miles Hamilton Township low Saginaw Bay Basin moderate **Data Sources** 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 Ithaca Arcada Emerson North Star EWashington Rd 127 127 North St Newark Source: Esri, Maxar, GeoEye, Earthstar Geographics, GN ES/Air bus DS, USDA, USGS, AeroGR D, IGN, and the GIS User Community W Buchanan Rd Sediment Loading Risk 0 № Miles City of Ithaca low Saginaw Bay Basin moderate **Data Sources** 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



Lafayette Township Jonesfield Wheeler Bethany ELincoln Rd Lak<mark>e</mark>field **Eme**rson North Star Hamilton Marion Source: Esri, Maxar, Geoeye, Earlistar Geographics, GN 53/Airbus DS, USCA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Lafayette 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



New Haven Township Sumner Saint Charles Rd Crystal W Buchanan Rd Bloomer Fulton Carson City Bloomer Source: Esri, Maxar, GeoEye, Earthstar Geographics, CN ES/Atrous DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Carson City Sediment Loading Risk 0 2 Miles New Haven 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



Newark Township 127 Em<mark>er</mark>son 127 Arcada Vorth Star Washington North Shade Fulton Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Newark 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



North Star Township 27 Arca Emerson Charles Rd Lafayette Ithaca 27 E Washington Rd Ithaca Hamilton 127 127 E Buchanan Rd W Grant Ro Washington Fulton 590 urse: 5s.nl, Marxar, Geoseye, Santhstar Geosgraphics, CN 53/Airbu DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles North Star 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



Pine River Township Lincoln E North County Line Rd GRATIOT Bethany Rd 127 127 46 St Louis Seville W Cheesman Bethany Alma E Center St N Lincoln Rd W Superior St 27 Ave Emersor Sumner Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Pine River 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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City of St Louis Pine River Bethany Pine River Pine River Bethany 46 Pine River Bethany Bethany 127 Pine Rive Alma 27 **Emerson** Arcada Geoeye, Edithstor Geographics, GN ES/Airbus Aerogric, IGN , and the GIS User Community Sediment Loading Risk 0 № Miles City of St Louis 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

Sumner Township Seville Pine Richland River W Lincoln Rd Harrison Rd Harrison Rd W Harrison Rd Arcada Ferris Saint Charles Rd Crystal New Haven Source: Esri, Maxar, GeoEye, Earlinstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Sumner 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



Wheeler Township Mt Haley Porter Redstone Rd W Redstone Rd Redstone Rd S 11 MIDLAND **GRATIOT** Jones field 46 Beth<mark>a</mark>ny E Lincoln Rd _afayette Emerson Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sediment Loading Risk 0 2 Miles Wheeler 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

