

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:

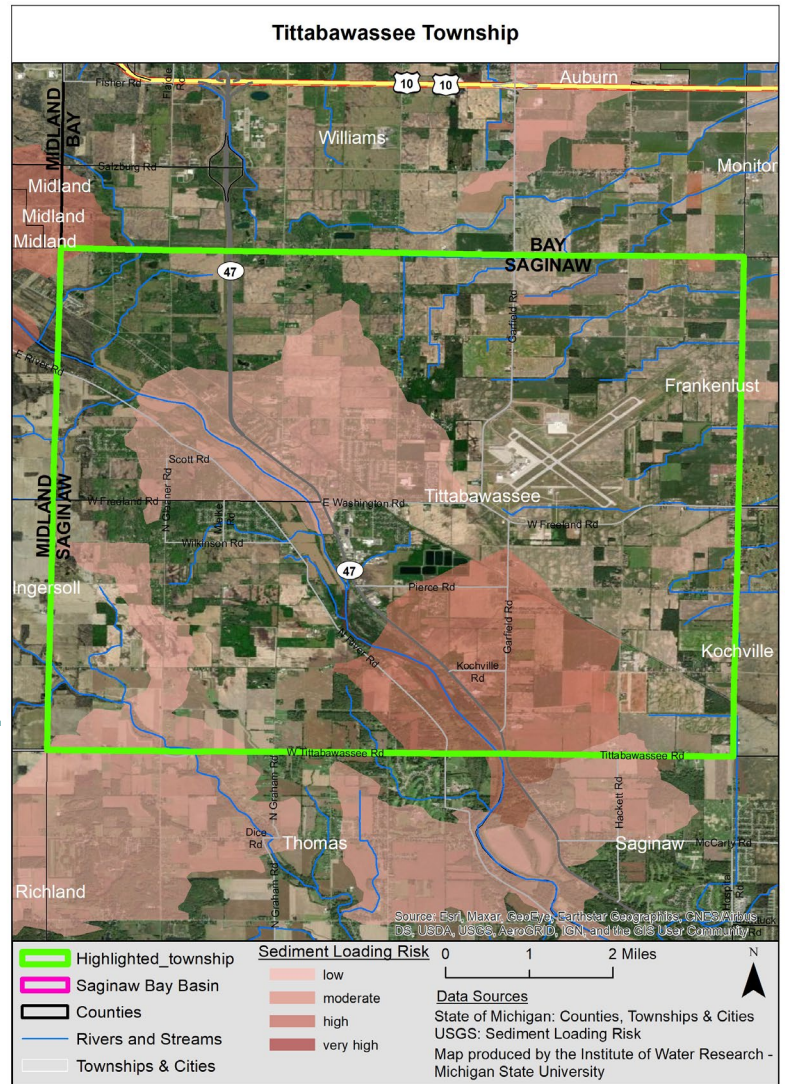
Sarah Fronczak

Environmental Management Educator
Michigan State University Extension
froncz3@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

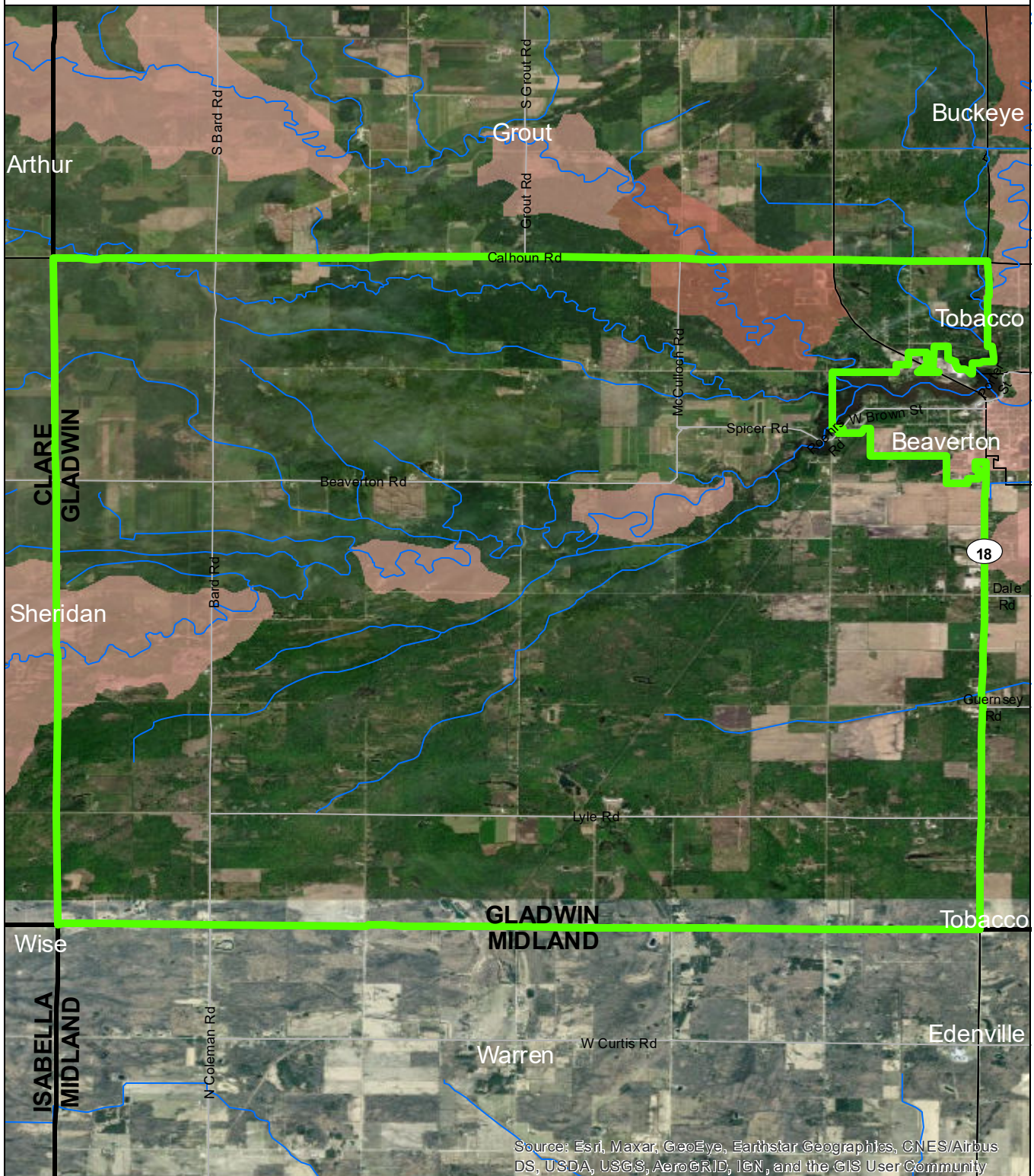


* <https://www.sciencebase.gov/catalog/item/5cbf5150e4b09b8c0b700df3>



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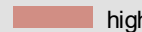
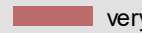
Beaverton Township

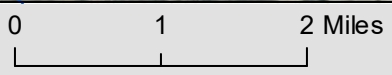


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

-  Beaverton Township
-  Saginaw Bay Basin
-  Counties
-  Rivers and Streams
-  Townships & Cities

Sediment Loading Risk

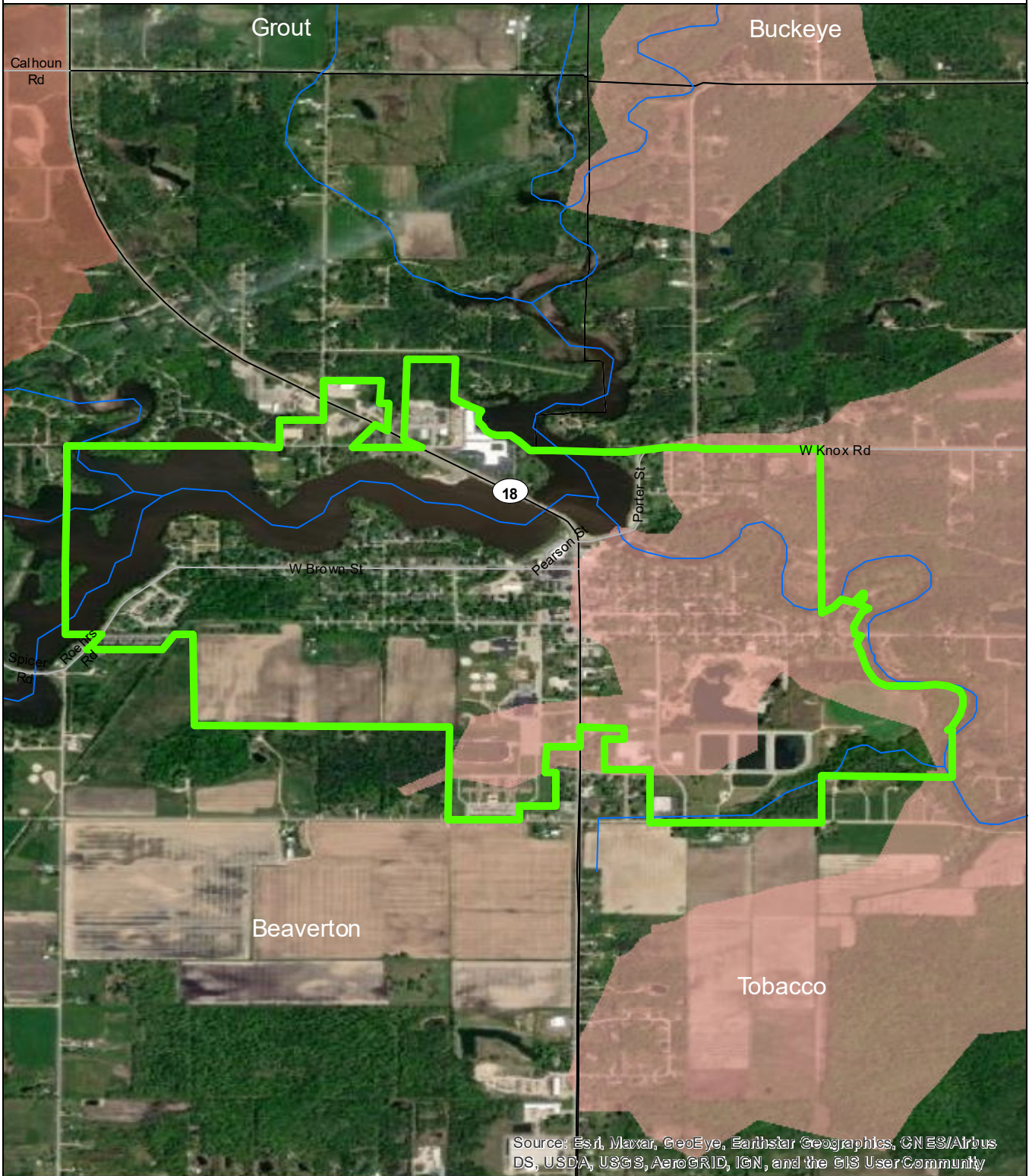
-  low
-  moderate
-  high
-  very high



Data Sources

State of Michigan: Counties, Townships & Cities
 USGS: Sediment Loading Risk
 Map produced by the Institute of Water Research - Michigan State University

City of Beaverton



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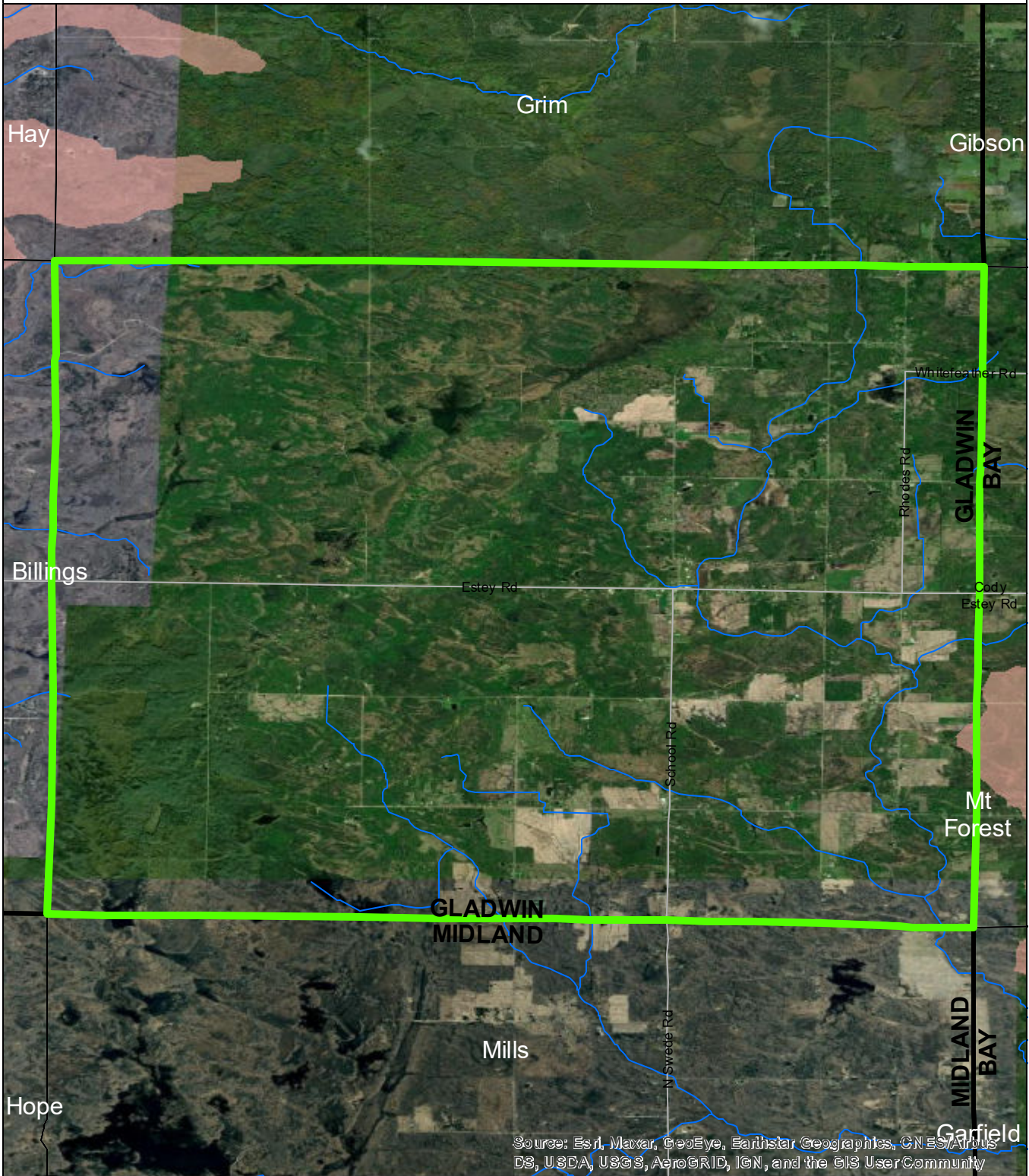
- Sediment Loading Risk**
- low
 - moderate
 - high
 - very high

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Bentley Township

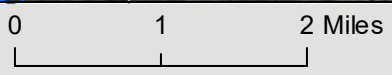


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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Sediment Loading Risk

- low
- moderate
- high
- very high

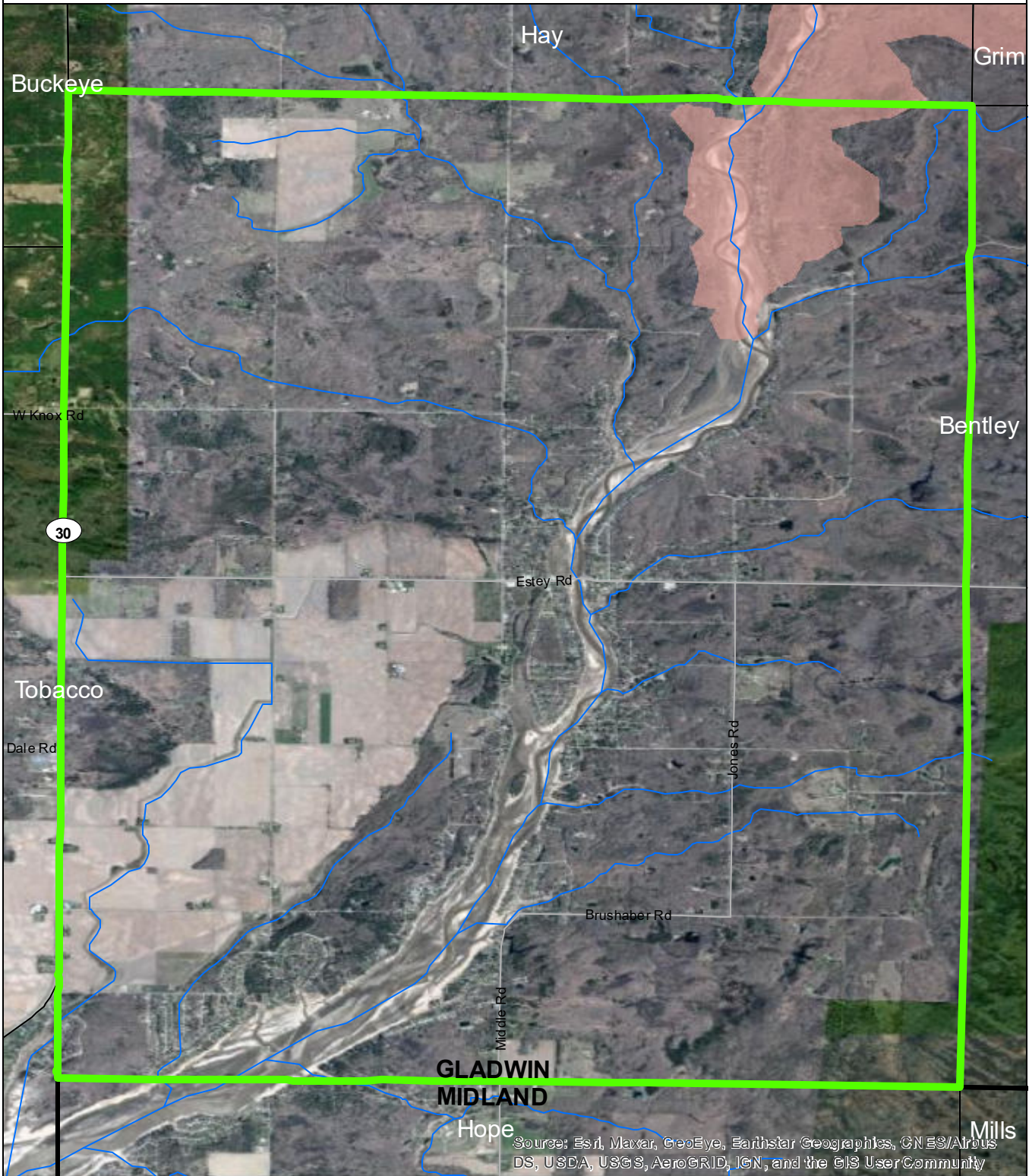


Data Sources






State of Michigan: Counties, Townships & Cities
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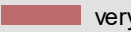


Billings Township



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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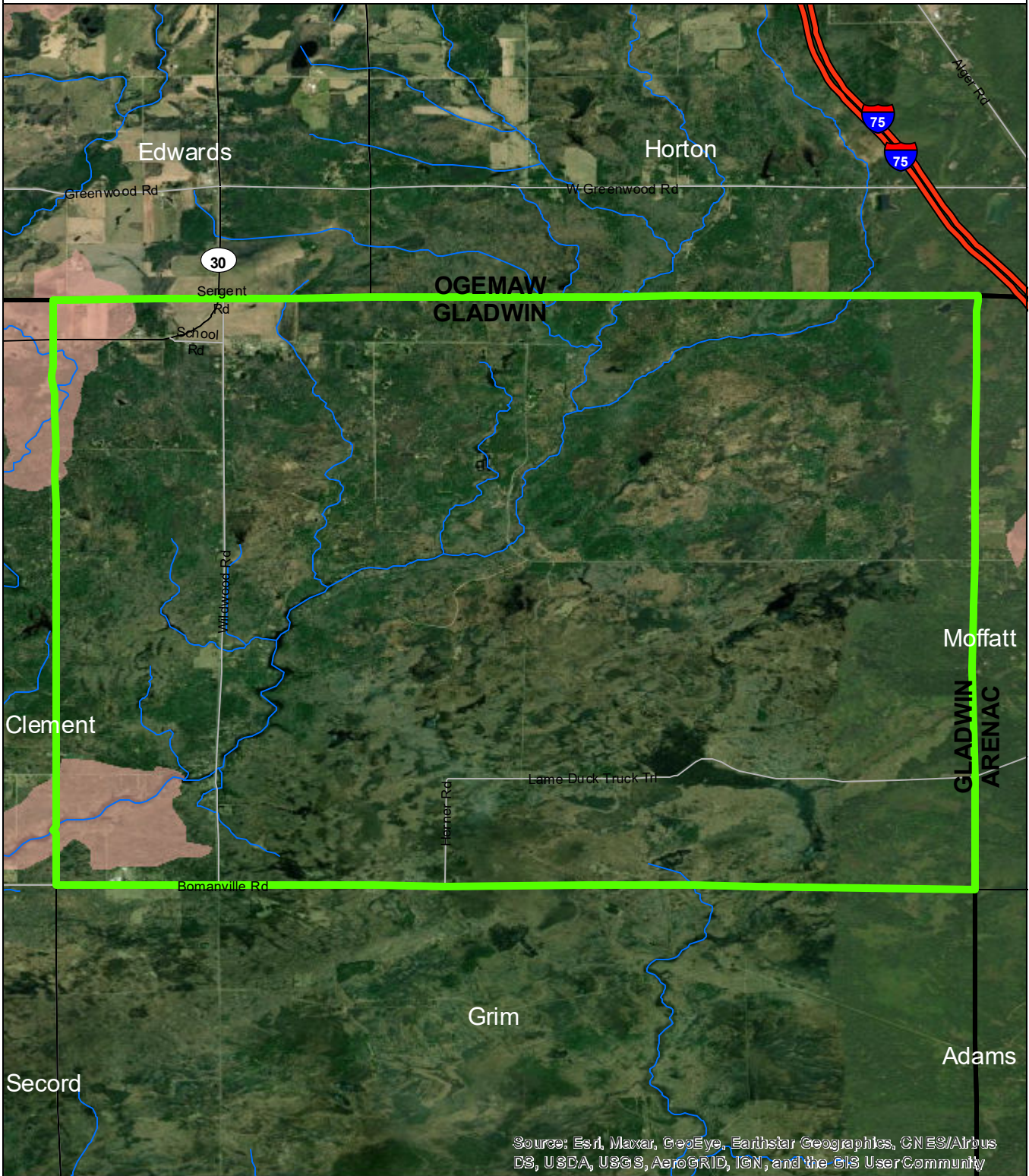


Data Sources






State of Michigan: Counties, Townships & Cities
 USGS: Sediment Loading Risk


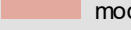
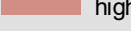
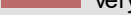
Map produced by the Institute of Water Research - Michigan State University

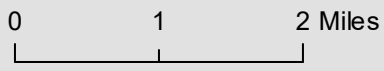
Bourret Township



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

-  Bourret Township
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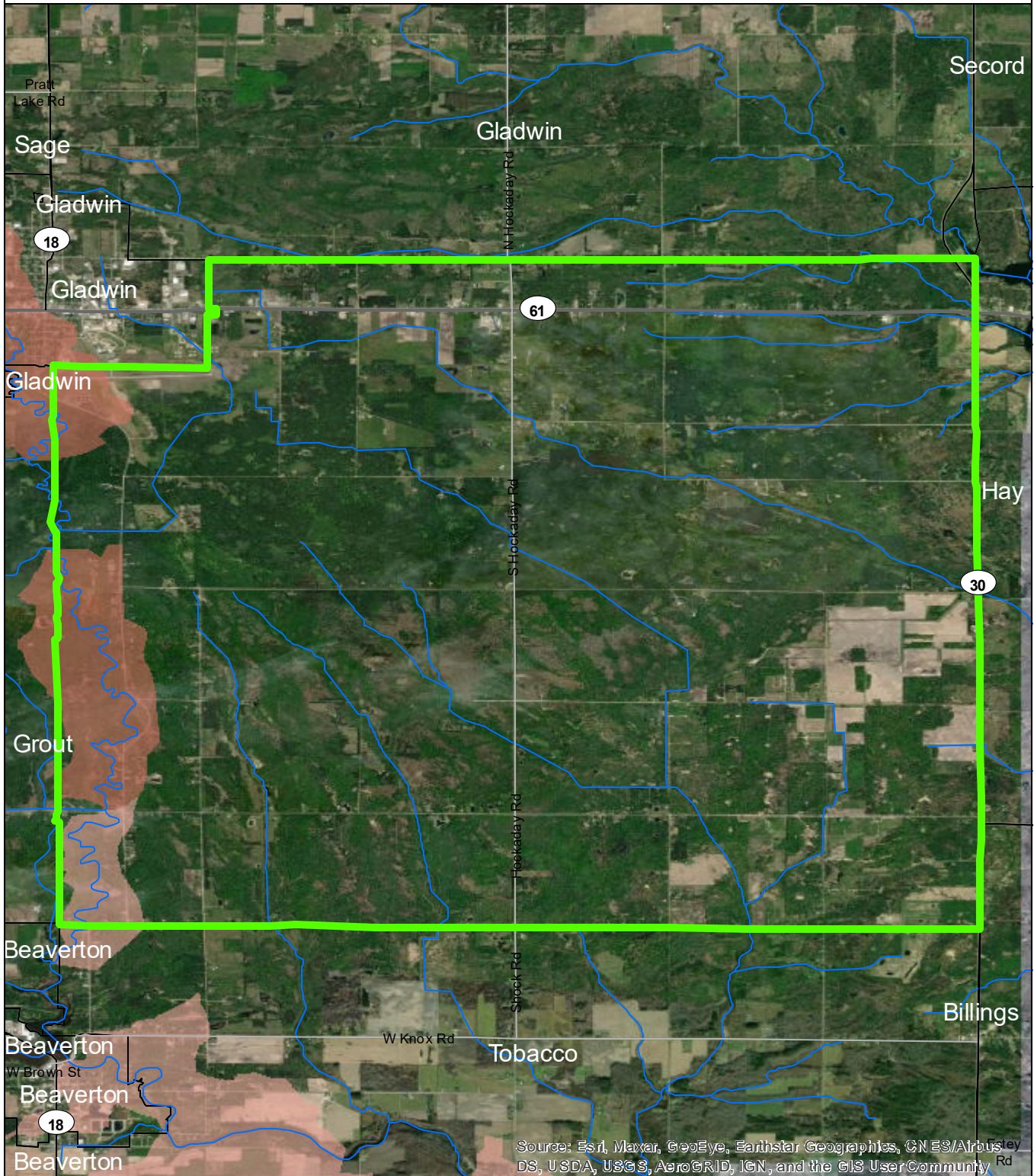
- Sediment Loading Risk**
-  low
 -  moderate
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 -  very high



Data Sources

State of Michigan: Counties, Townships & Cities
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Buckeye Township

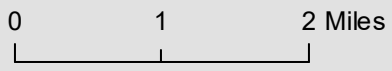


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS UserCommunity

- Buckeye Township
- Saginaw Bay Basin
- Counties
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Sediment Loading Risk

- low
- moderate
- high
- very high

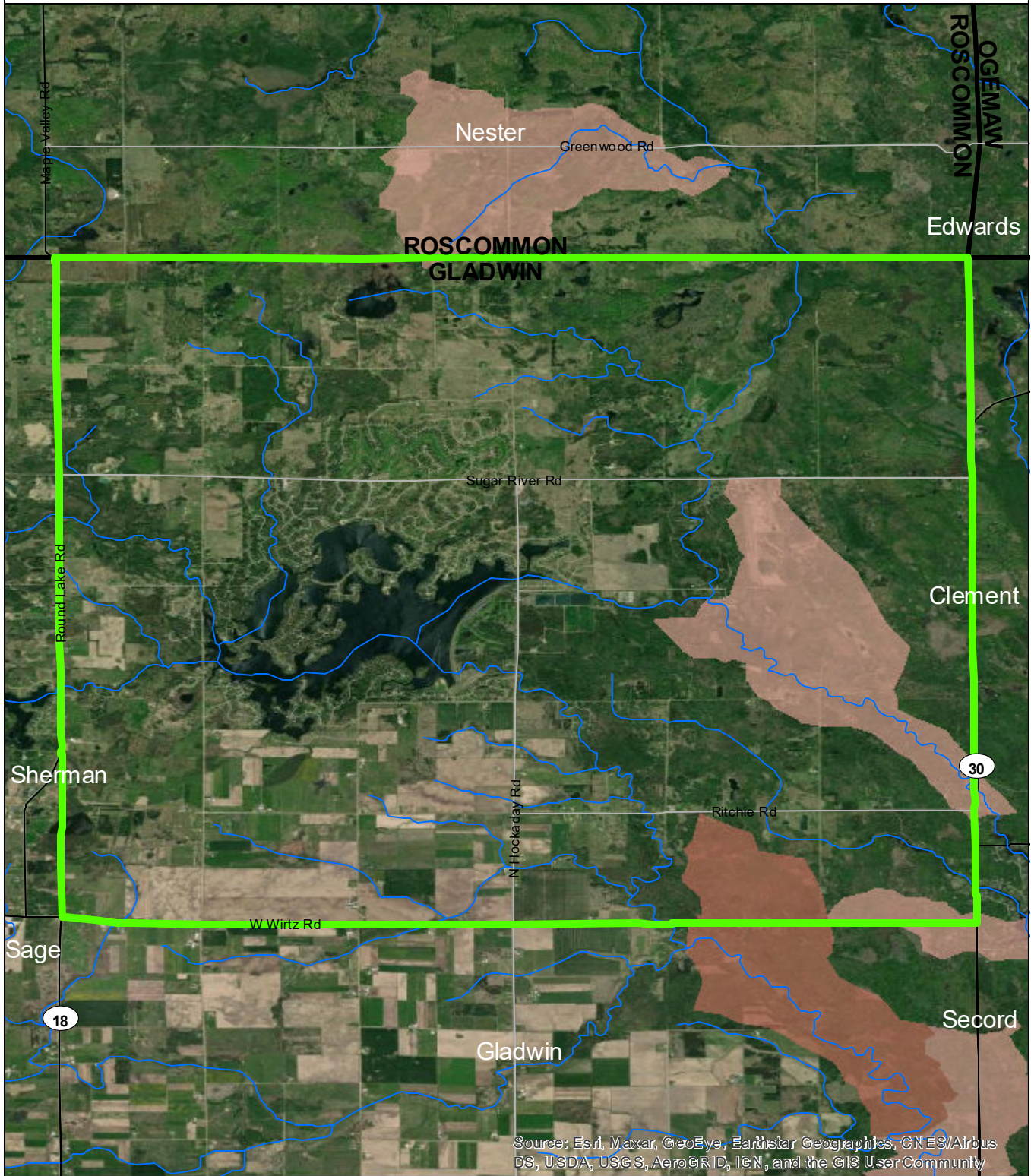


Data Sources

State of Michigan: Counties, Townships & Cities
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Butman Township

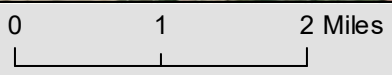


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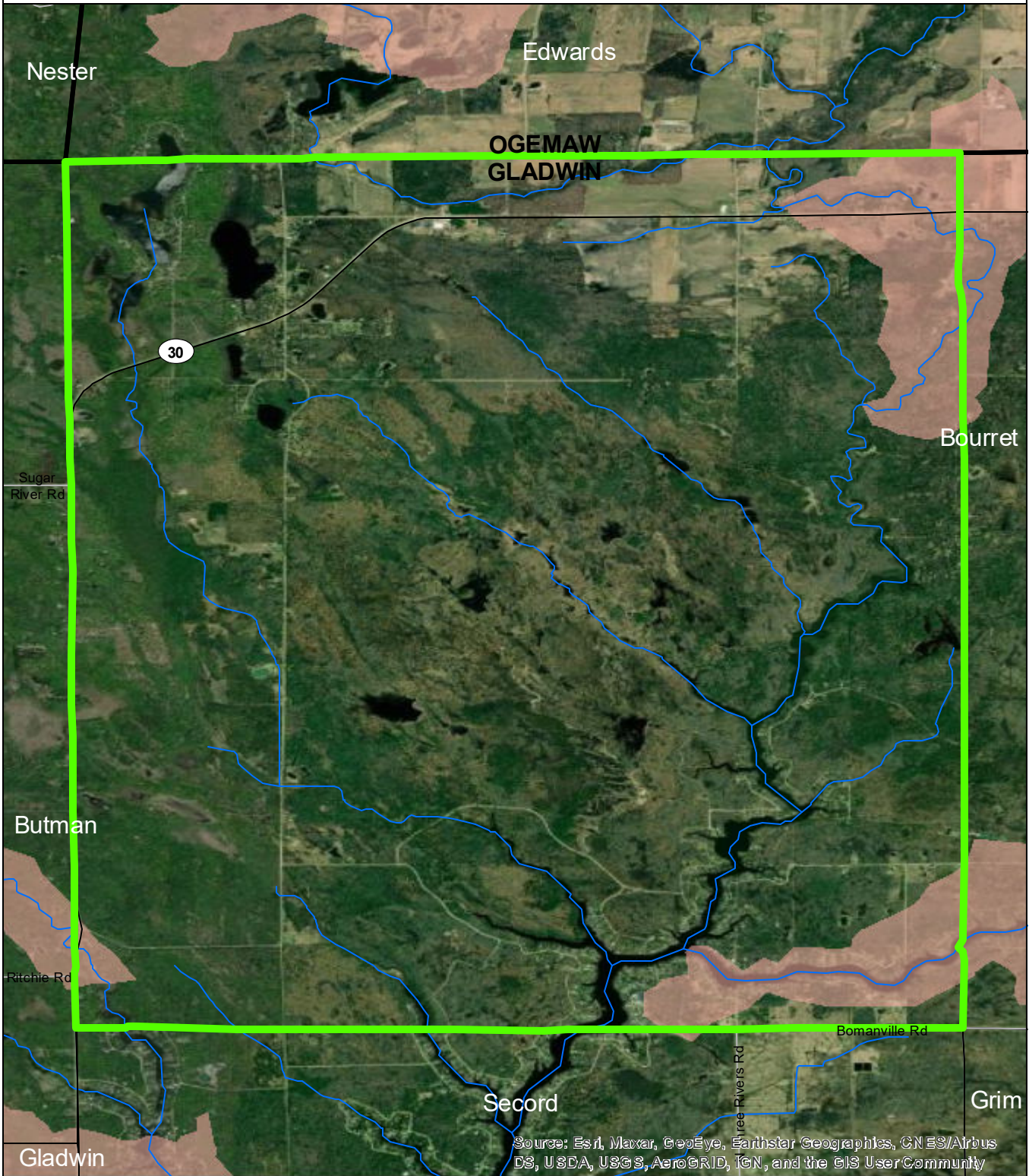


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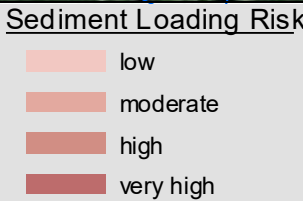
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Clement Township

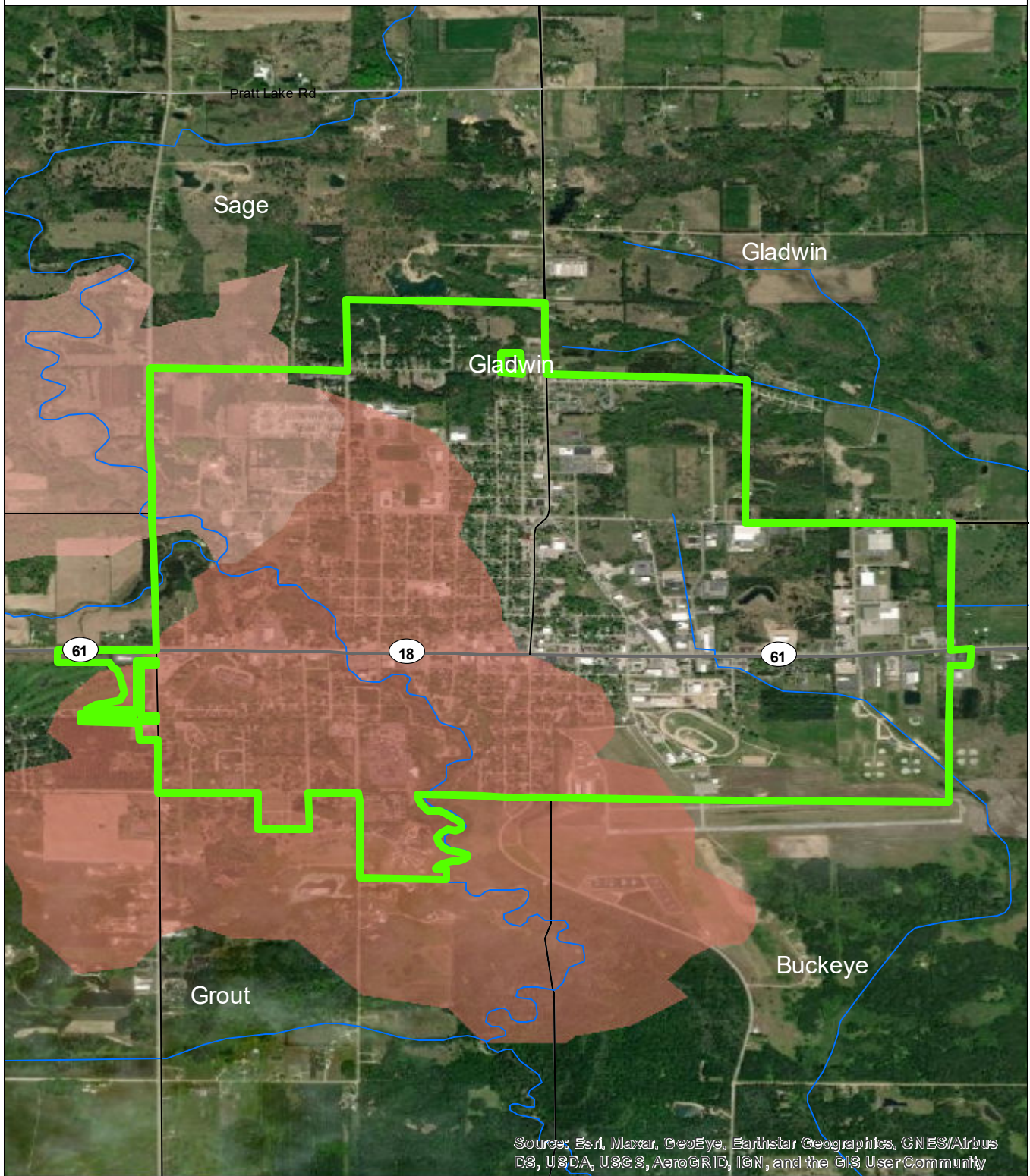


- Clement Township
- Saginaw Bay Basin
- Counties
- Rivers and Streams
- Townships & Cities



Data Sources
 State of Michigan: Counties, Townships & Cities
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City of Gladwin



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS UserCommunity

- City of Gladwin
- Saginaw Bay Basin
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- Rivers and Streams
- Townships & Cities

Sediment Loading Risk

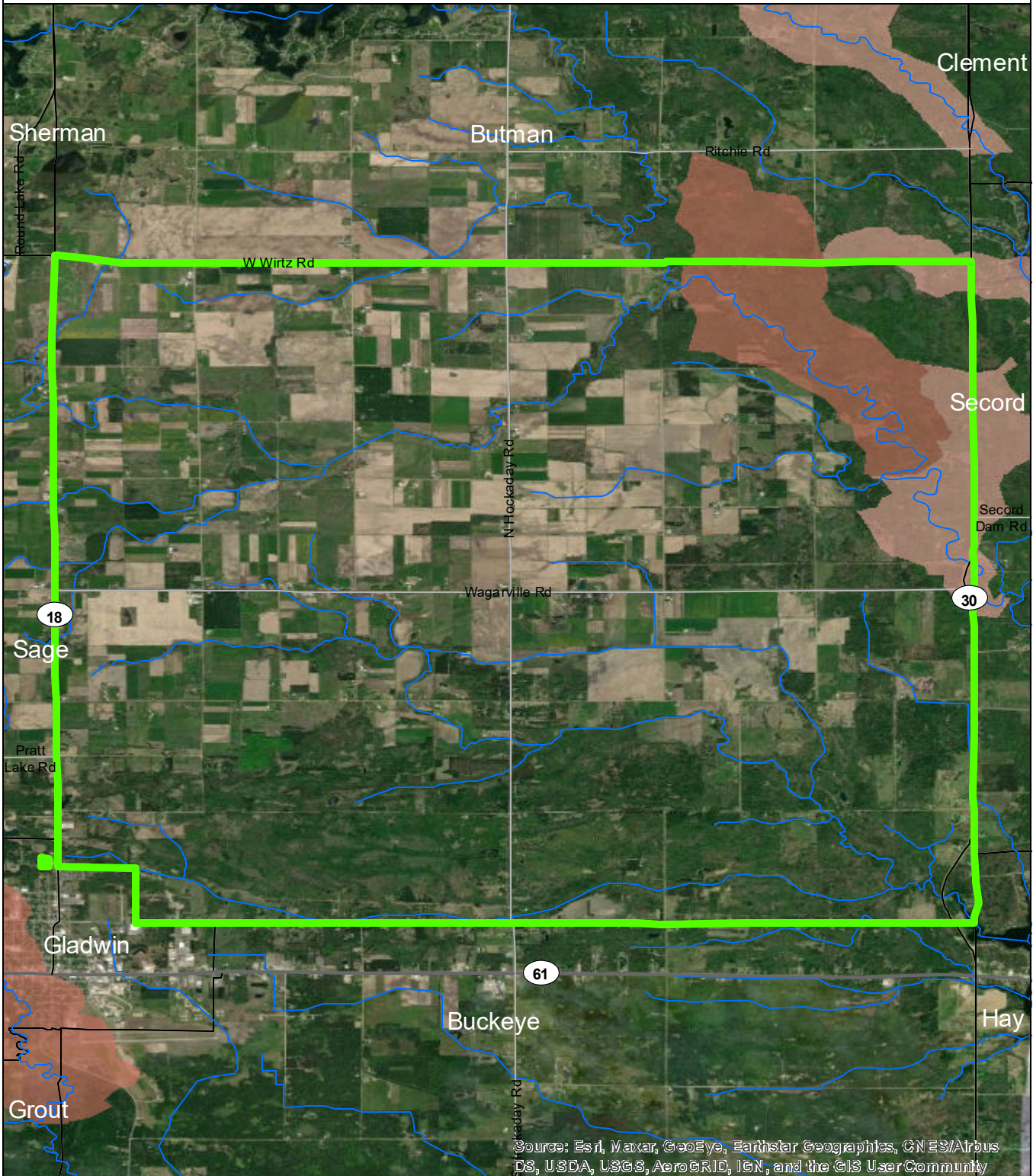
- low
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Data Sources

State of Michigan: Counties, Townships & Cities
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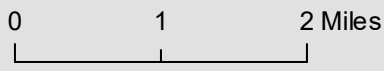
Gladwin Township



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CN ES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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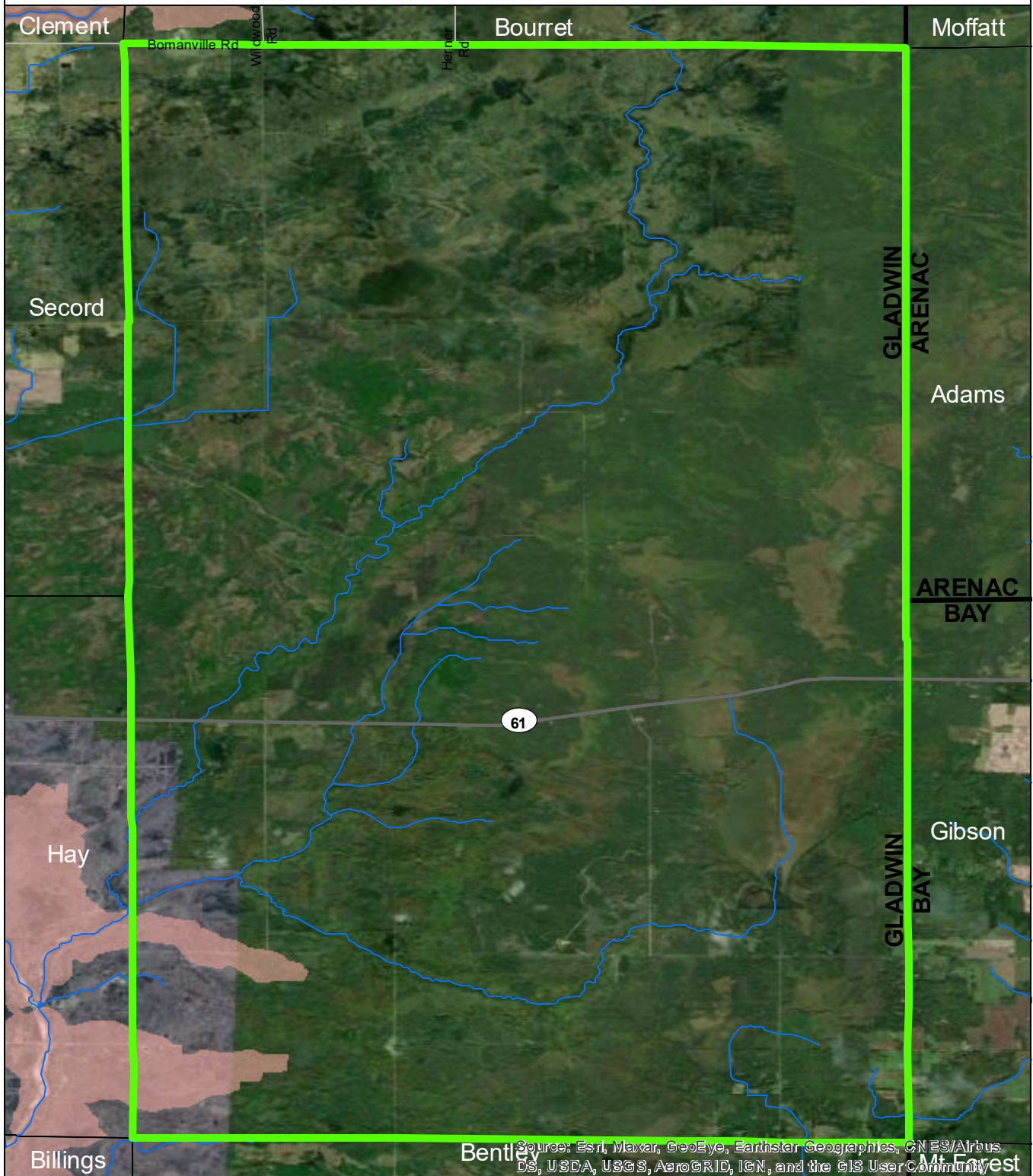


Data Sources

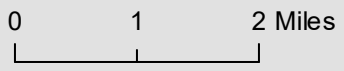
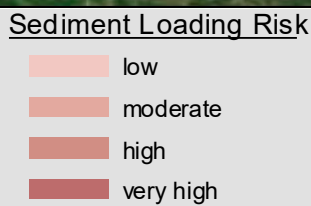
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Grim Township



- Grim Township
- Saginaw Bay Basin
- Counties
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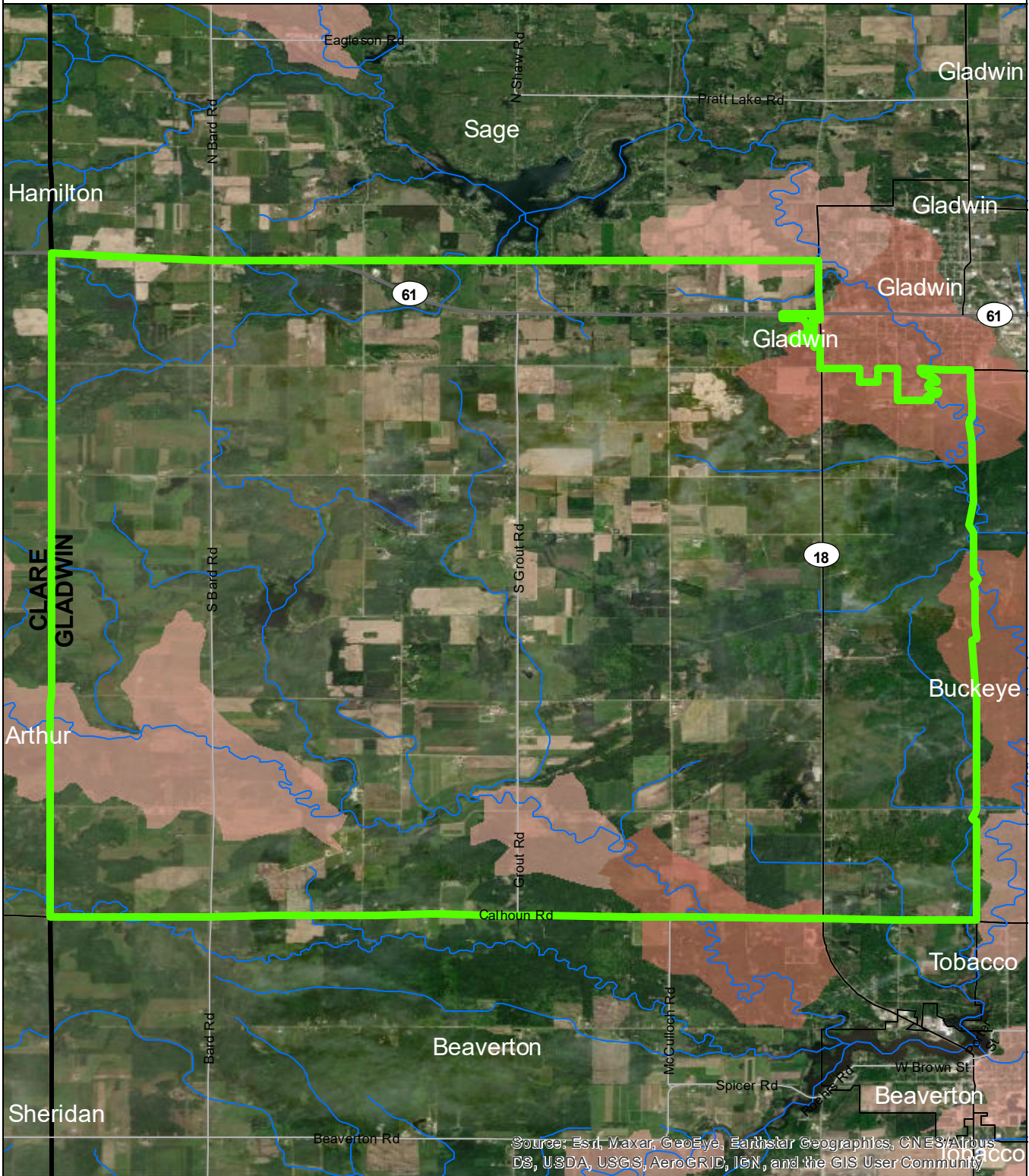


Data Sources

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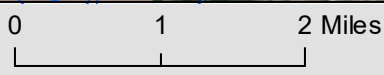
Grout Township



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Grout Township
- Saginaw Bay Basin
- Counties
- Rivers and Streams
- Townships & Cities

- Sediment Loading Risk**
- low
 - moderate
 - high
 - very high

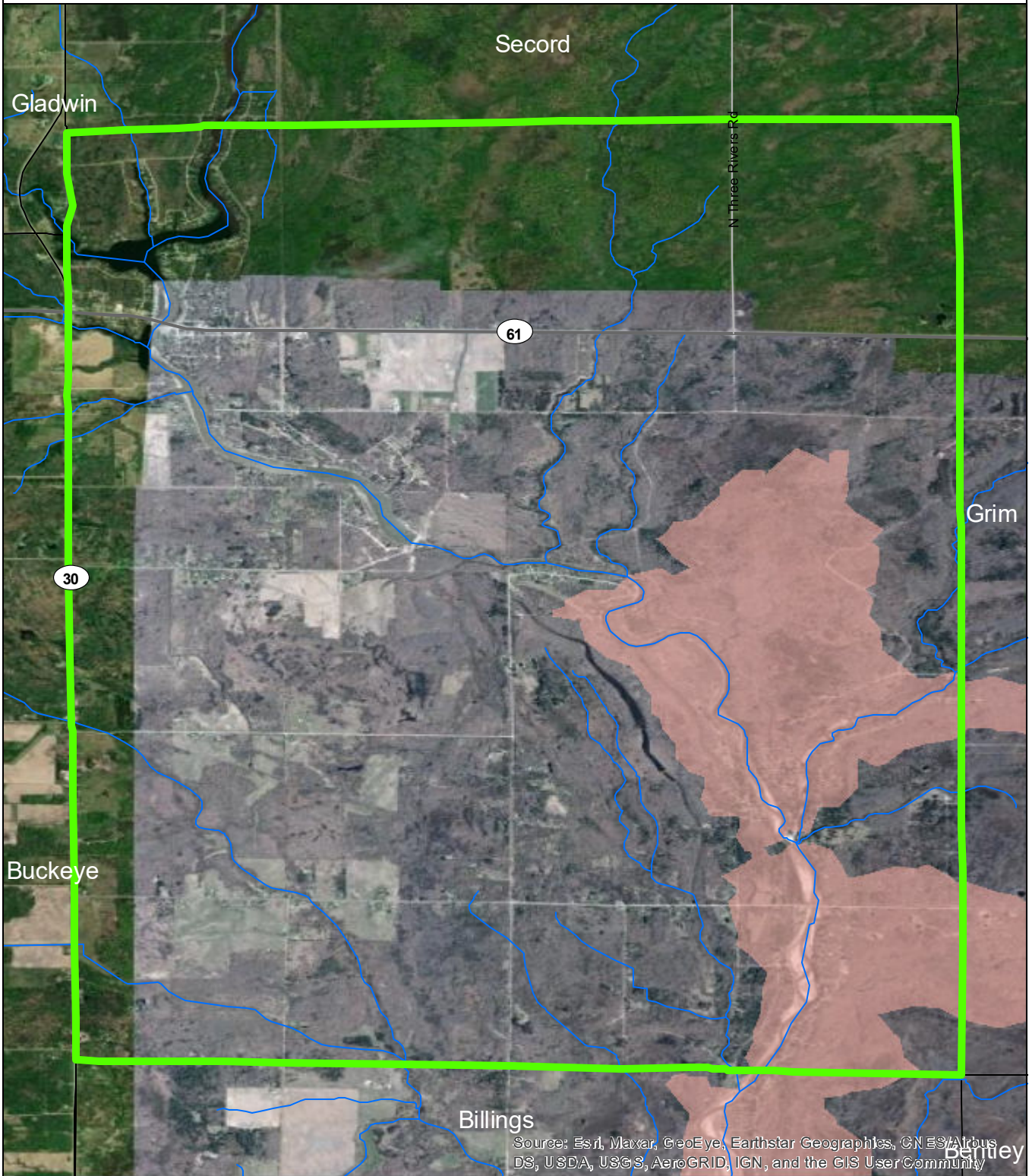


Data Sources

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Hay Township

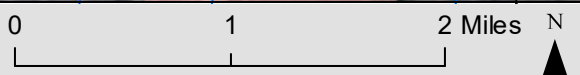


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- Hay Township
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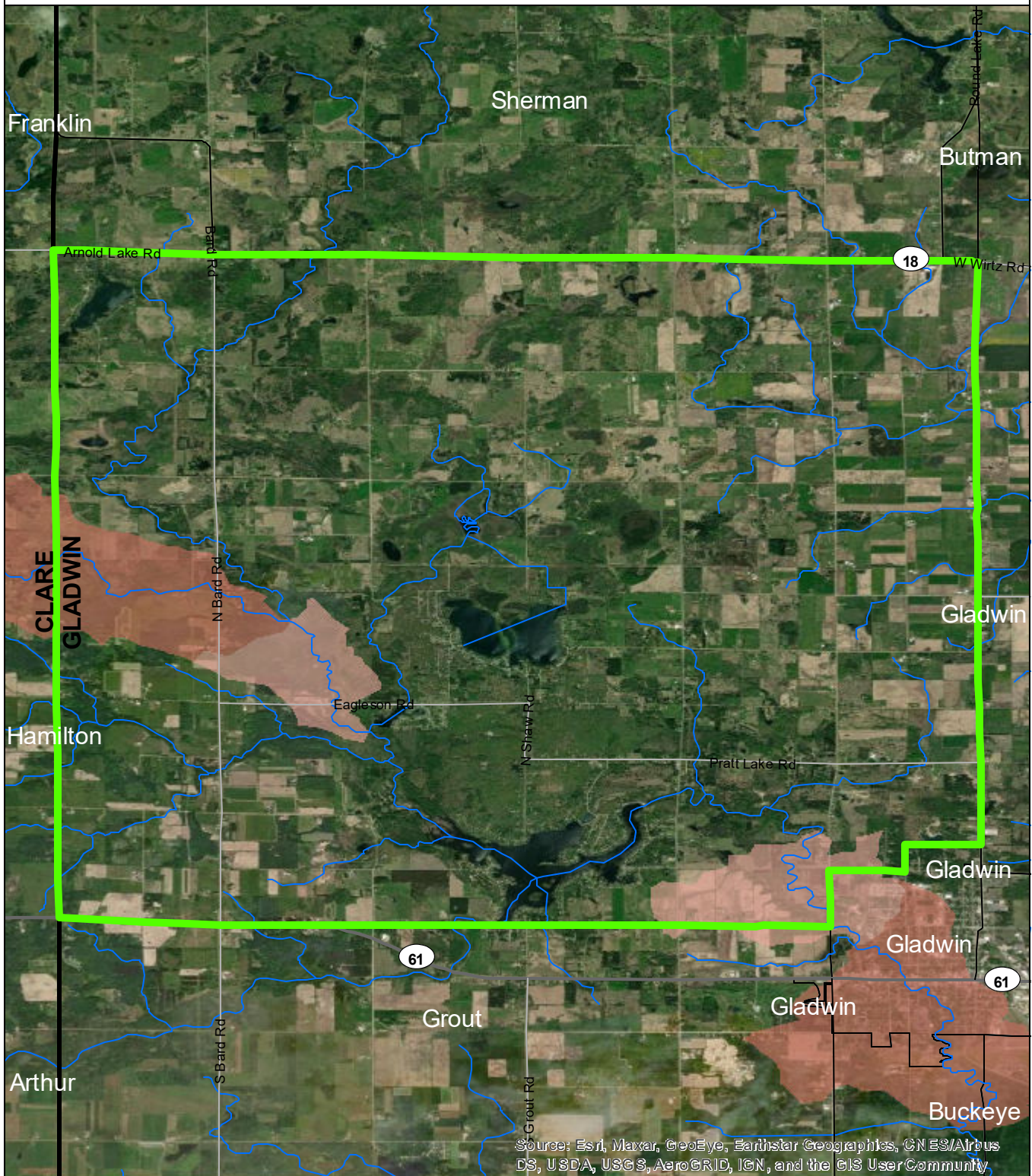
Sediment Loading Risk

- low
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Data Sources
 State of Michigan: Counties, Townships & Cities
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Sage Township

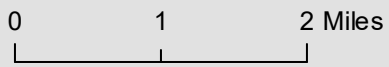


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- Sage Township
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Sediment Loading Risk

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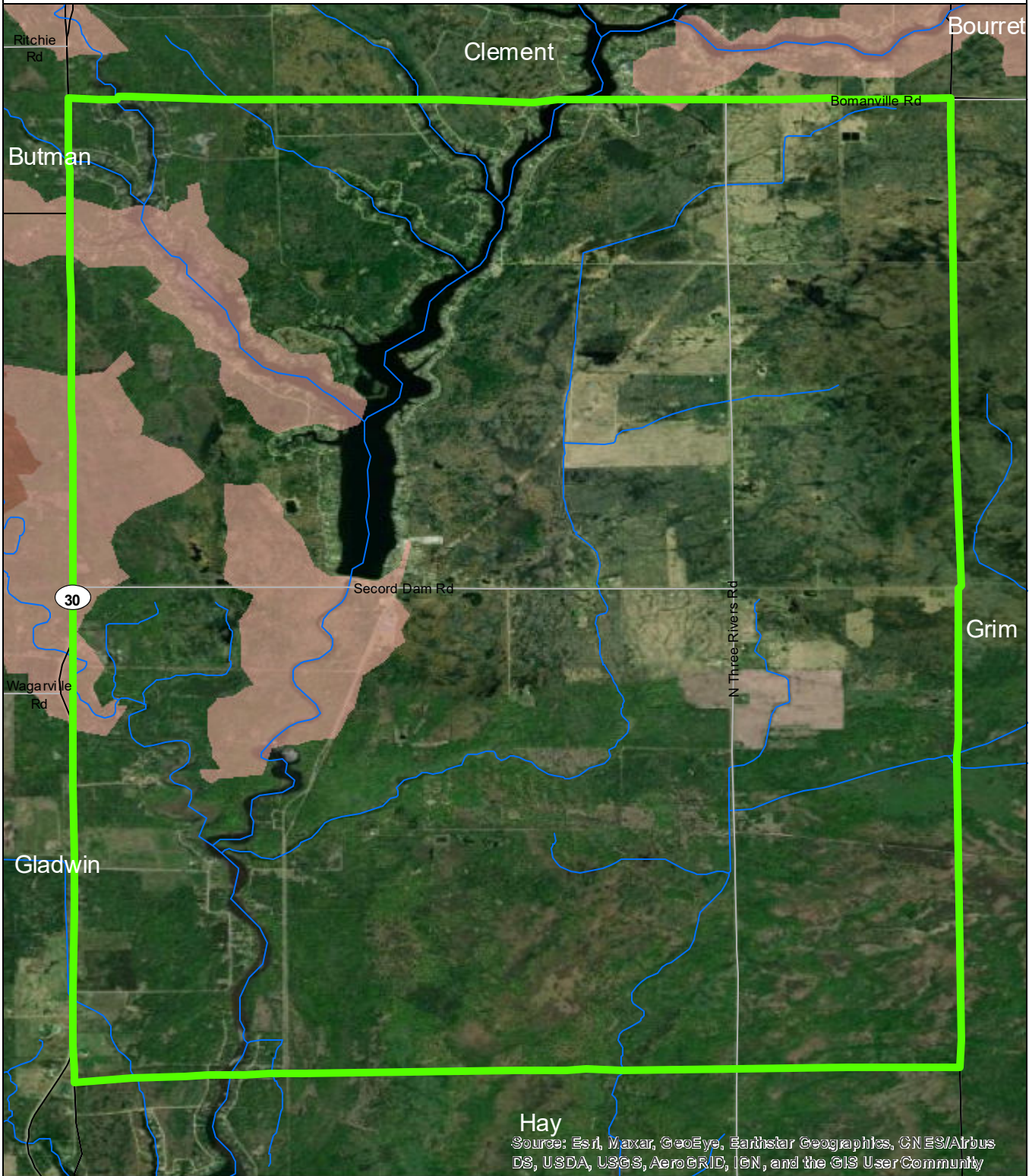
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




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


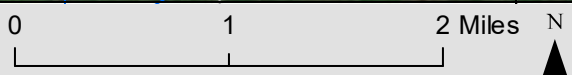
Secord Township



Hay
 Source: Esri, Maxar, GeoEye, Earthstar Geographics, CN ES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

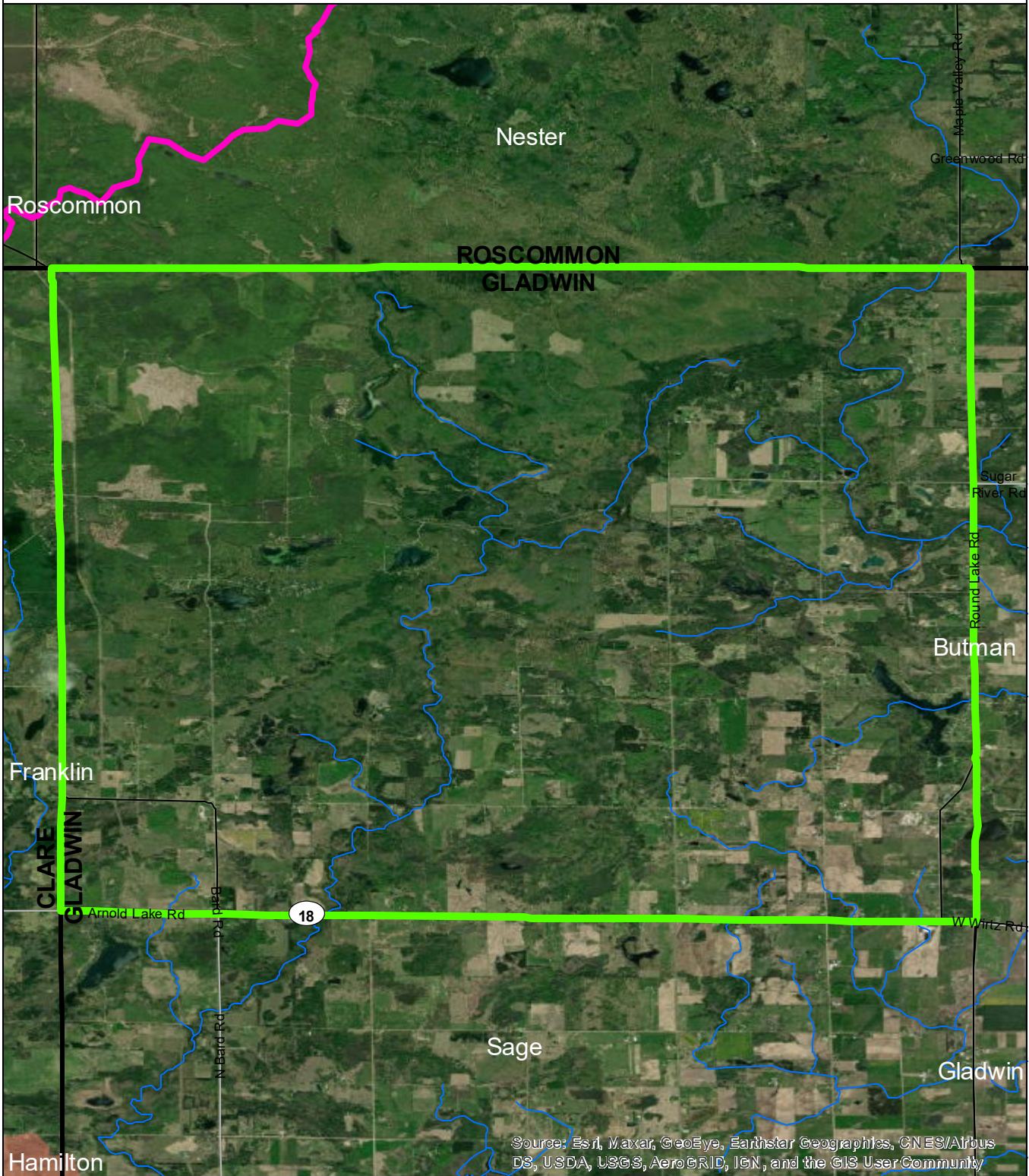
-  Secord Township
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




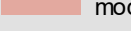
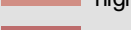
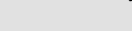
Data Sources
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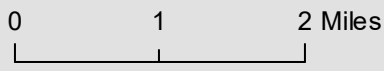
Sherman Township



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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-  low
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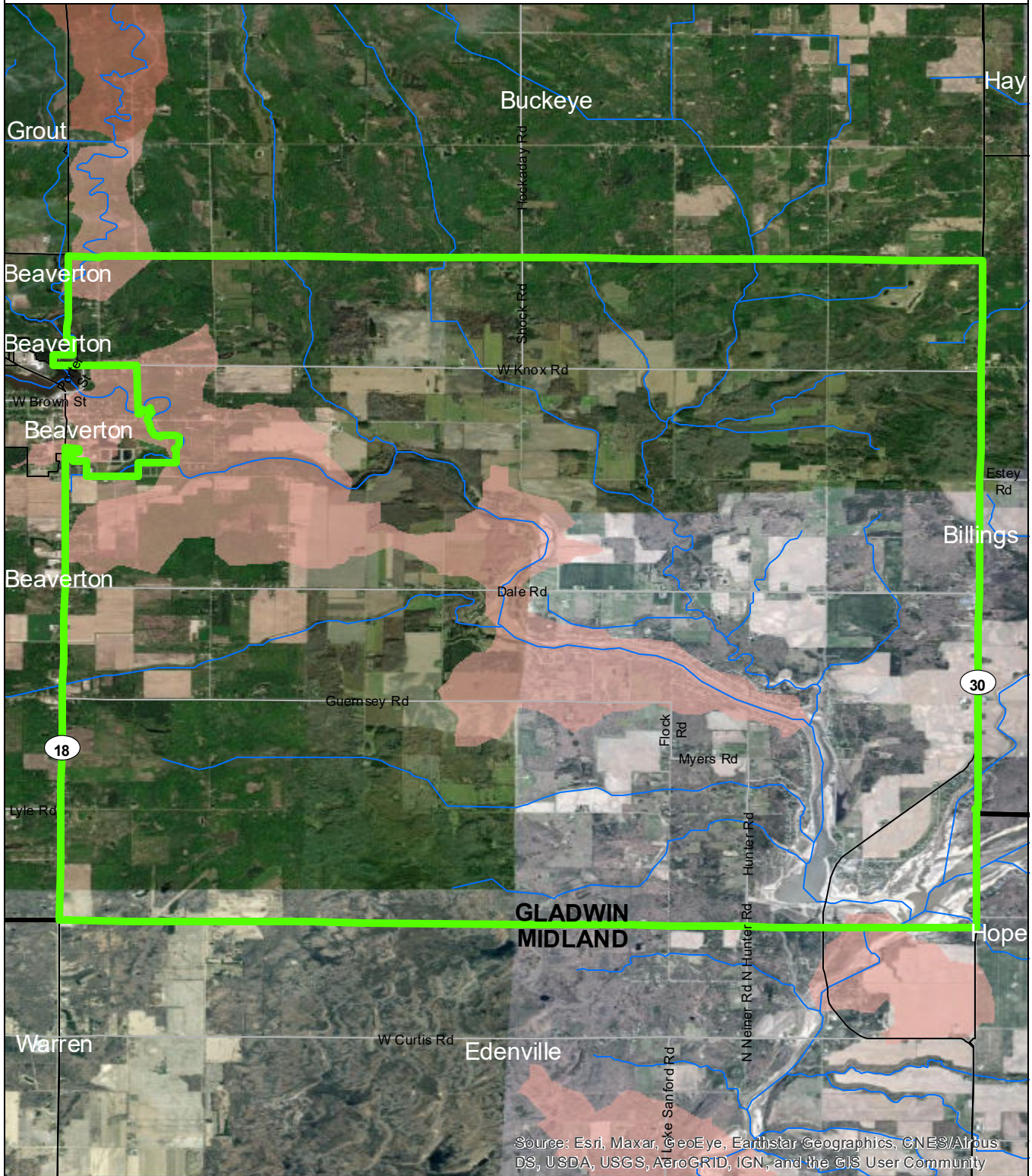
Data Sources

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Tobacco Township

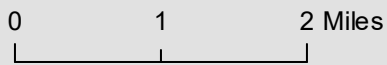


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