

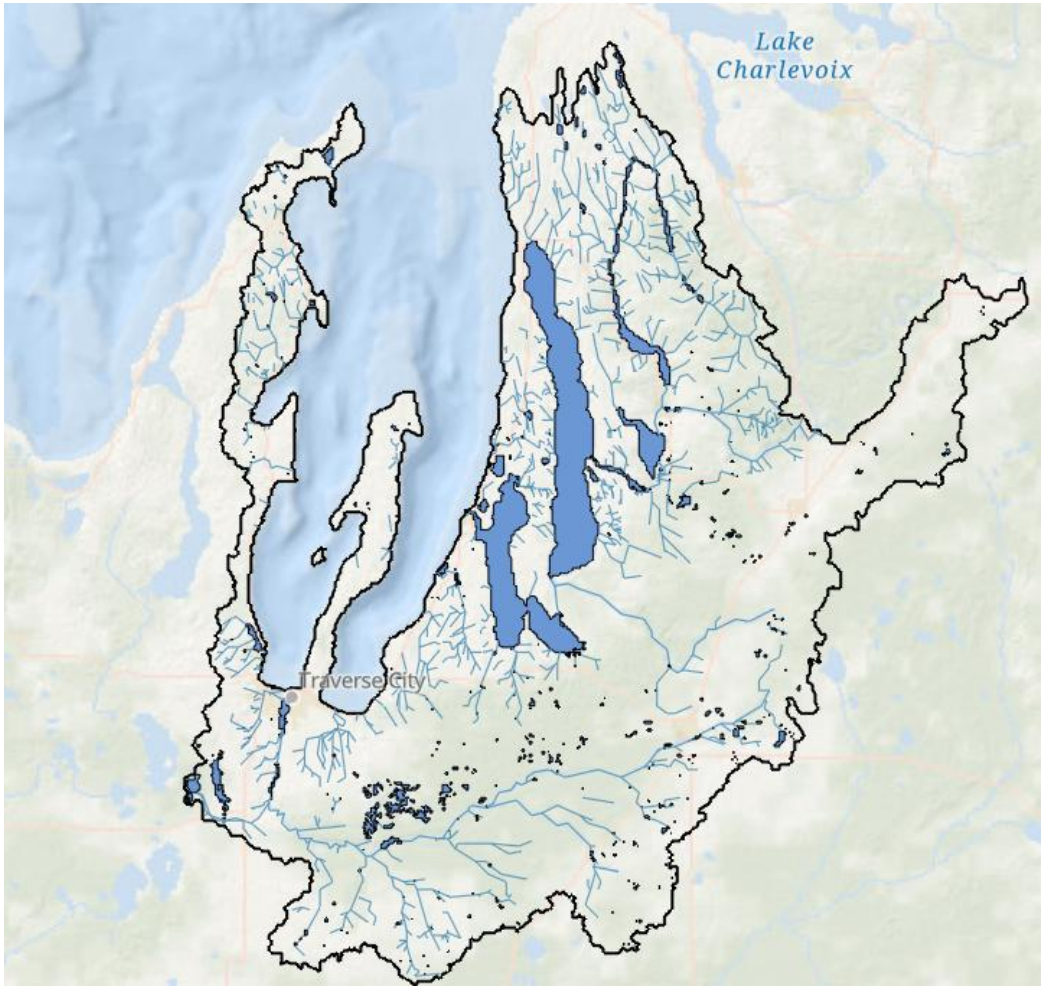
Grand Traverse Bay
Shoreline Survey

Heather Smith
The Watershed Center Grand Traverse Bay

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GRAND TRAVERSE BAY

Grand Traverse Bay Watershed

976 square miles spanning 4 counties, 132 miles of shoreline



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Shoreline Survey

Objectives:

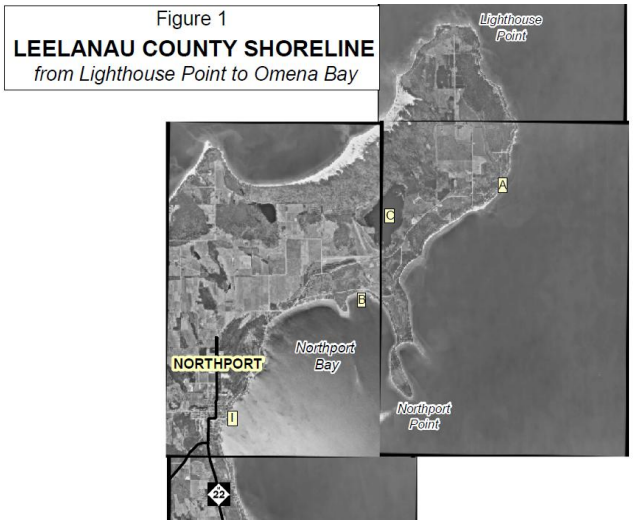
- Document shoreline conditions
- Assess shoreline vulnerability and ecological sensitivity
- Identify restoration opportunities
- Use data-driven insights to prioritize education, policy, advocacy, restoration and conservation efforts



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2002

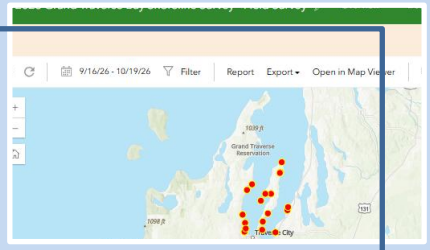
Entire shoreline walked and observations recorded by hand



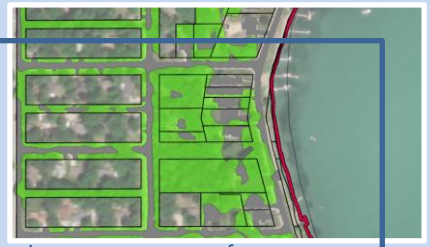


2026

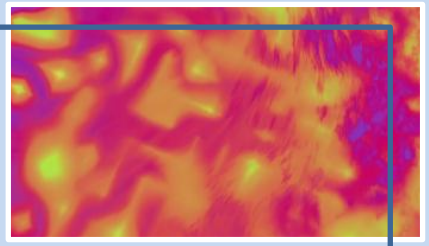
Pairing modern tools & data with field surveys



On-the-ground observations



Modern mapping software, imagery & datasets

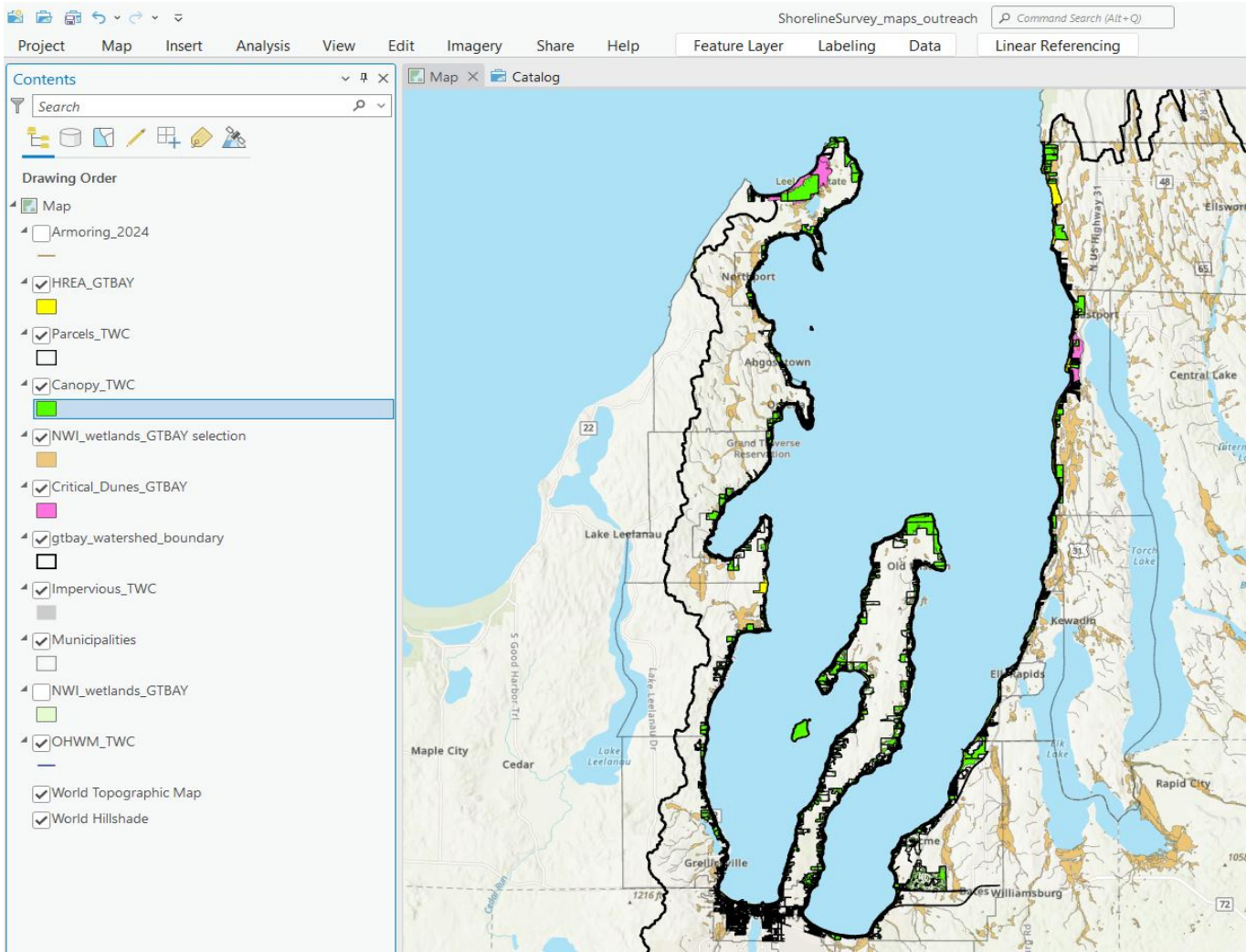


Spatial models

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Modern Mapping

Using ESRI's ArGIS Pro, aerial imagery & geospatial datasets



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Unit of Analysis

Quantifying parcel-level features likely to affect nonpoint source runoff, coastal vulnerability, ecological sensitivity

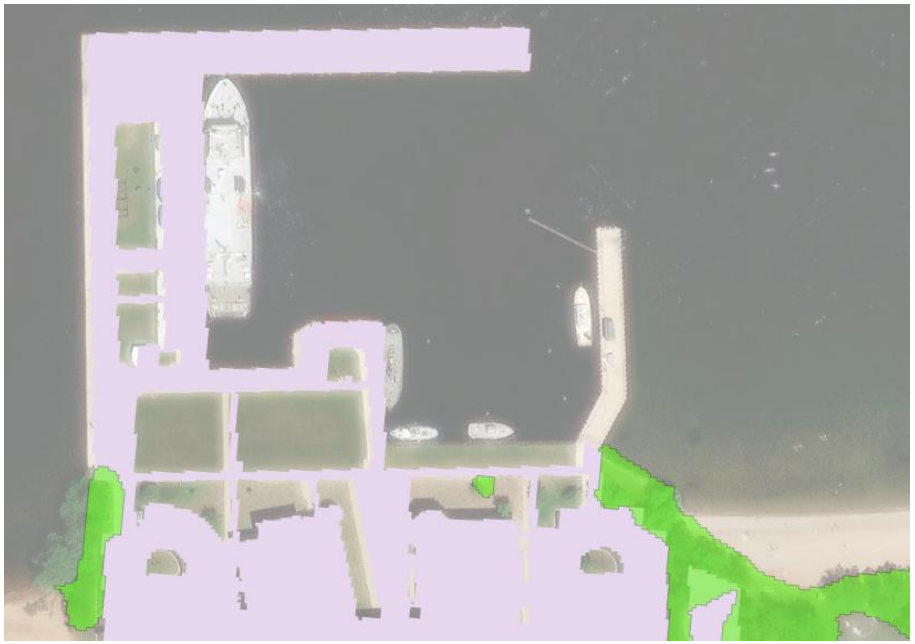


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Imagery & Datasets

Spatial representation of on-the-ground conditions





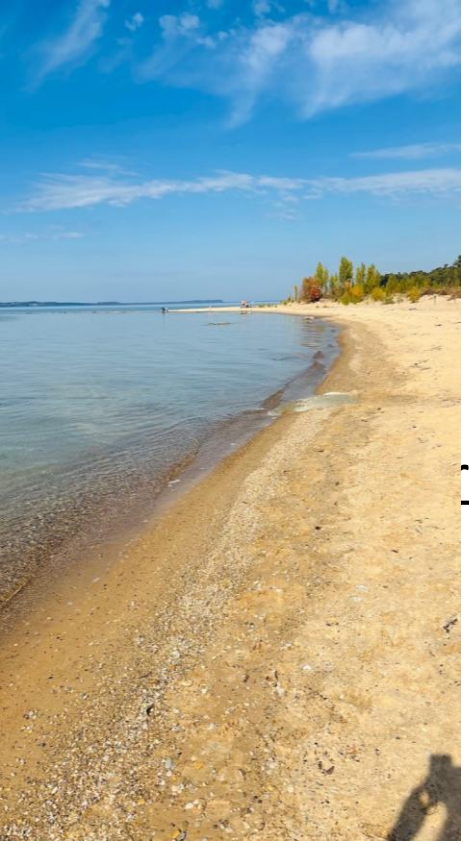
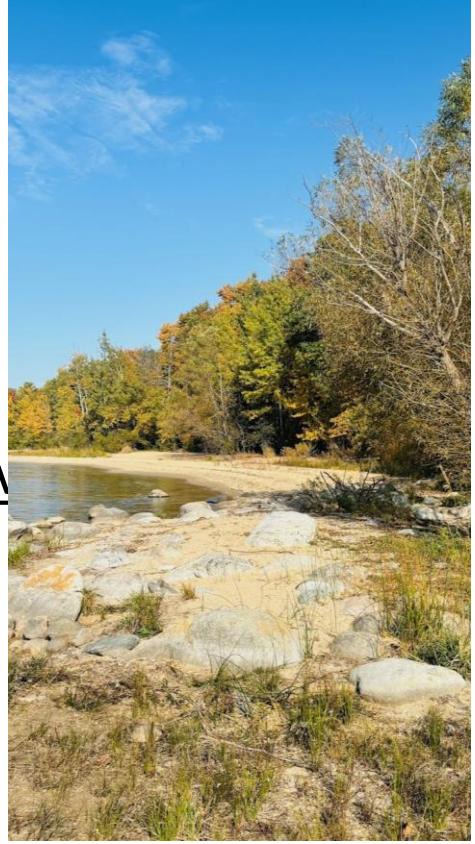
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Models

Looking at landscape characteristics to determine vulnerability and ecological sensitivity

Feature	Hydro Feature (creek, trib, drainage channel)	Critical Dune	High Risk Erosion Area (HREA)	Canopy Percentage	Precent Impervious Cover	Closest Impervious Surface Distance from OHWM	Steep Slope	Zoning by Municipality
Metric Details	Presence =1; Absence =0	Presence =1; Absence =0	Presence =1; Absence =0	< 70%= 1; > 70% =0	>40%= 1; < 40% =0	< 50 feet =1; >50 feet = 0)	Presence =1; Absence =0	Weak =1, Strong = 0

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Field Surveys

Identify sites most suitable for coastal resiliency restoration or habitat protection projects

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Thank You