MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

How EGLE uses MiCorps stream data

Tamara Lipsey, Teresa Salveta, Jack Cotrone

Water Resources Division

MLSA
Michigan Lakes and Streams Association

Huron River Watershed Council

EGLE
MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

MICHIGAN STATE UNIVERSITY

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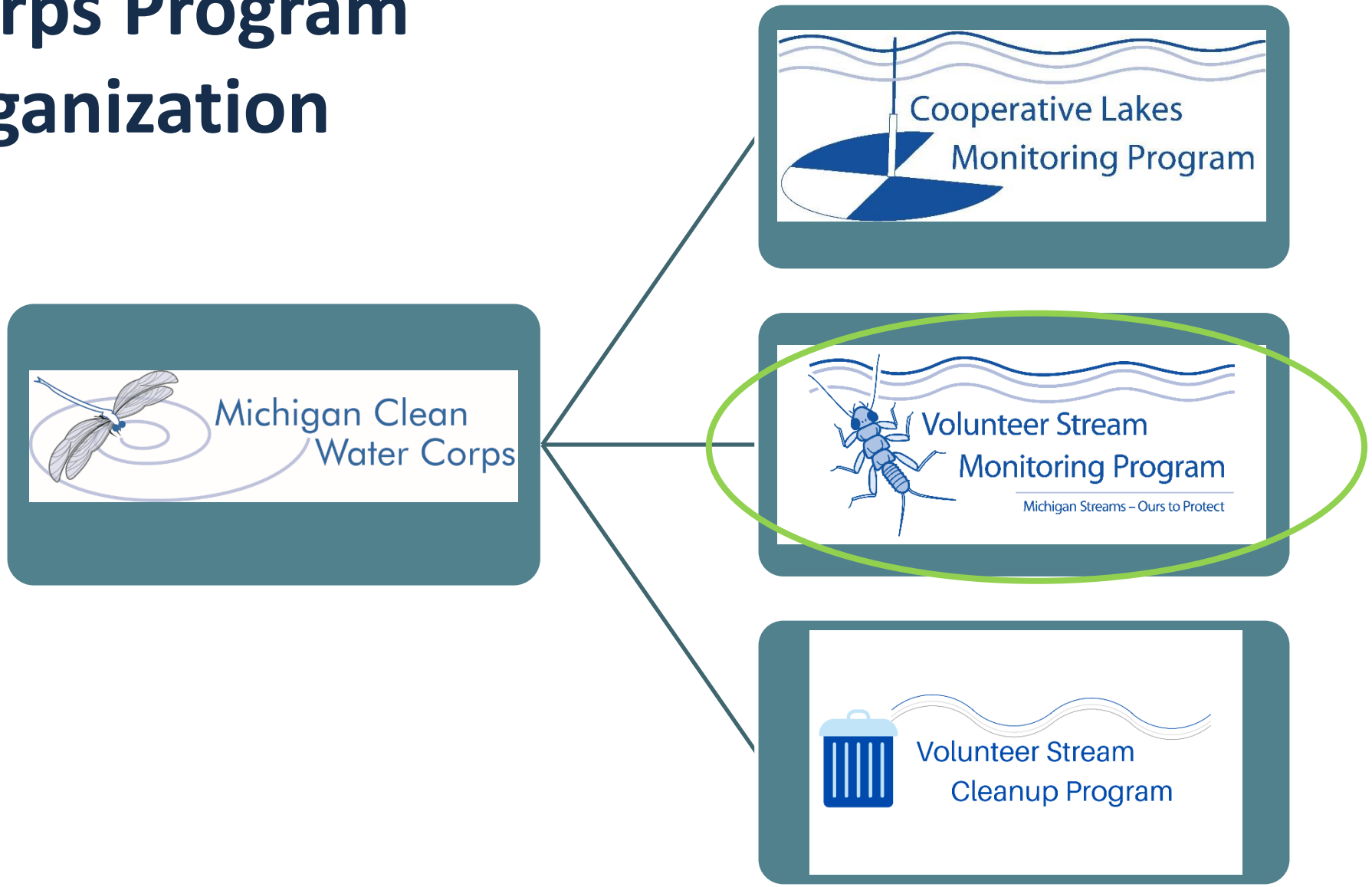
MiCorps Program Organization



Outline

- What is the MiCorps Volunteer Stream Monitoring Program ?
- Use of MiCorps Volunteer Stream Monitoring Program data in Water Quality Reporting.
- Use of MiCorps Volunteer Stream Monitoring Program data in Targeted Monitoring Request Process
- Leveraging MiCorps Volunteers to collect additional water quality data in partnership with EGLE

MiCorps Volunteer Stream Monitoring Program

- **$75,000/year in Grants**
  - RENEW Michigan Funding
- **Three types**
  - Start-up
  - Implementation
  - Maintenance Grants
- **Provide Training and Leadership** to get volunteer monitoring groups started and to help them continue operating.
- **Collect Macroinvertebrate and Habitat data** in May and October.

Macroinvertebrates

- Do not have a spine and you can see them with just your eye
- Indicators of water quality

Habitat Monitoring

Use of MiCorps VSMP data in Water Quality Reporting.

Clean Water Act Goals

Prevent pollution from entering rivers, lakes, and streams.

Protect water quality so it’s safe for people, fish, and wildlife.

Support healthy environment by keeping water clean and natural.

Ensure water is safe for swimming, fishing, and drinking (after treatment)

Integrated Report
Requirement of the *Clean Water Act*

Section 303(d) – **Polluted water that do not meet water quality standards and need clean up plans.**

Section 305(b) – **All** waters that have been assessed, not just polluted ones.

Section 314 – **Lakes**. Identify status and trends of water quality in public lakes

Produced every 2 years, next report out in 2026

What is a Water Quality Standard?

- A **number** or **statement** to protect a water body for a specific **designated use**

Water Quality Standards can be…

- Numeric criteria
  - Concentration (e.g. toxic chemicals, metals)
- Narrative criteria
  - Condition
    - fish or macroinvertebrate community health
- Designed to be protective and support Designated Uses…

Designated Uses assigned in Michigan Rules: What is protected?

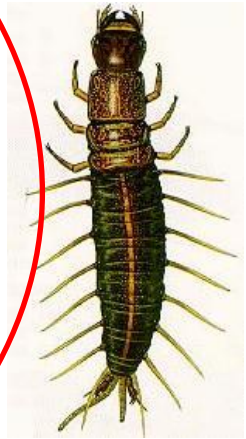
- Warmwater fish health
- Eating Fish
- Other native aquatic life and wildlife
- Wading
- Swimming
- Agriculture
- Navigation of boats
- Industrial Water Supply

❖ Other waters, may also be protected for Coldwater fish health and drinking water supply

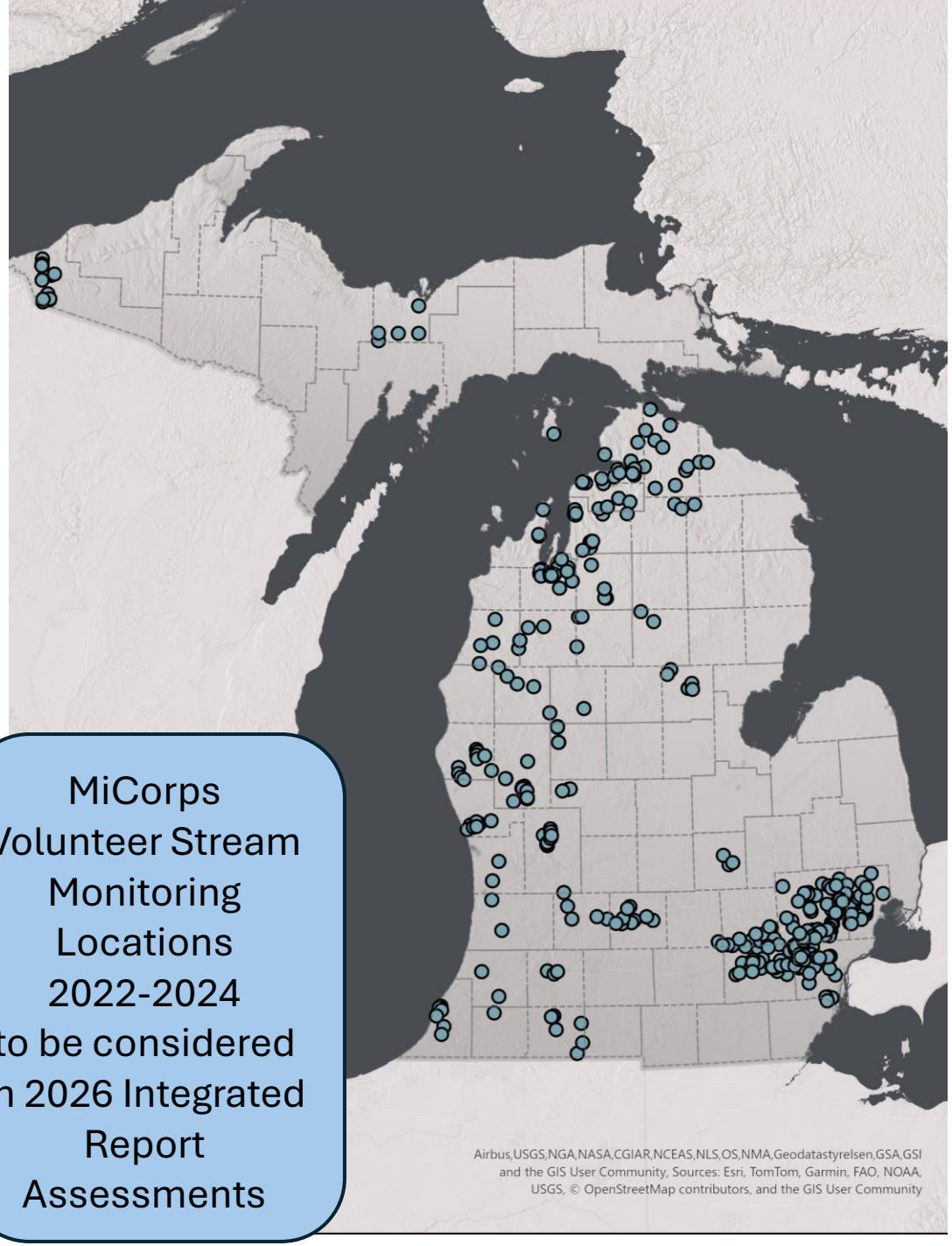
Clean and Safe Water Resources

Data Sources

- Water Chemistry Monitoring Program
- Volunteer Monitoring
- Fish Contaminant Monitoring Program
- Biological Integrity Monitoring Program
- Sediment Chemistry Monitoring
- Beach Monitoring (BeachGuard)
- Outside Data (DNR, USGS, Tribal, etc…)



EGLE



MiCorps Volunteer Stream Monitoring Locations 2022-2024 to be considered in 2026 Integrated Report Assessments

MiCorps Volunteer Stream Monitoring Locations 2022-2024 to be considered in 2026 Integrated Report Assessments

Organization	Site Id	Name	County	Description	Latitude	Longitude	Date	Total Abundance	Total Diversity	Water Quality Rating Score	Water Quality Rating Category
White River Watershed partnership	MUCD-NBW1	White River	Oceana	North Branch White River/176th Ave crossing	43.6166055	-86.1188449	2021-05-02	147	7	2.26	Excellent
White River Watershed partnership	MUCD-CC3	White River	Oceana	Pierce Road crossing of Cobmoosa Creek	43.62029489	-86.18860245	2021-05-03	286	12	4.12	Very Good
White River Watershed partnership	MUCD-CC1	White River	Oceana	Fillmore Road crossing of Cobmoosa Creek	43.65669509	-86.18980408	2021-05-06	282	14	4.21	Very Good
Grass River Nat Area	GRNA-SCGR	Shanty Creek	Antrim	Shanty Creek mouth.	44.928251	-85.208901	2021-05-08	197	8	6.73	Fairly Poor
Grass River Nat Area	GRNA-SCPB	Shanty Creek	Antrim	Crossing at Grass River Ln. in Pine Brook off of M-88	44.935158	-85.194491	2021-05-08	152	6	3.25	Excellent
Grass River Nat Area	GRNA-SCRT	Shanty Creek	Antrim	Shanty Creek/rail trail crossing.	44.92992	-85.20301	2021-05-08	56	8	7	Fairly Poor
White River Watershed partnership	MUCD-CTN4	White River	Oceana	Former crossing of Carlton Creek by Skeels Ave	43.47037816	-86.29621267	2021-05-12	275	12	4.56	Good
Little Forks Land Conservancy	LFC-3	Stoney Brook Creek	Gladwin	DNR Gladwin Field Trail Area	44.13873	-84.52996	2021-05-14	134	12	3.72	Very Good
Little Forks Land Conservancy	LFC-1	West Branch of the Cedar River	Clare	Leon P. Martuch Chapter of Trout Unlimited Property	44.020799	-84.383255	2021-05-15	80	9	3.78	Very Good
Little Forks Land Conservancy	LFC-1B	North Branch of the Cedar River	Gladwin	George and Sue Lane Preserve	44.073078	84.57357	2021-05-15	54	9	7	Fairly Poor
Little Forks Land Conservancy	LFC-4	North Branch of the Cedar River	Gladwin	DNR Land-Dutcher and Shaw	44.109	-84.558488	2021-05-15	48	7	7	Fairly Poor
Little Forks Land Conservancy	LFC-5	West Branch of the Cedar River	Gladwin	End of S. Cedar River Road	44.01428	-84.3458	2021-05-15	37	6	7	Fairly Poor
Manistee Cons District	MCD-02	Bear Creek	Manistee	Spirit of the Woods Road	44.312368	-86.050584	2021-05-15	158	7	3.15	Excellent
Manistee Cons District	MCD-BC01	Bear Creek	Manistee	Leffew Road	44.456039	-86.03155	2021-05-15	203	11	3.12	Excellent
Manistee Cons District	MCD-BM01	Adams Creek	Wexford	16 Road	44.40996	-85.61461	2021-05-15	142	7	2.79	Excellent
Manistee Cons District	MCD-BM02	Fletcher Creek	Wexford	Fletcher Park Road	44.404891	-85.747685	2021-05-15	113	9	5.01	Good

"Volunteer MiCorps data from Friends of the Rouge at Middle Rouge (RR-MR-6) found macroinvertebrate communities characterized as: Fair [10-2024]."

"Volunteer MiCorps data from Eaton County Cons District at Lacey Creek (ECCSMP-2) found macroinvertebrate communities characterized as: Fairly Poor [05-2022], Fair [10-2022], Fair [05-2023], Fair [10-2023], Fair [05-2024], Fair [10-2024]."

"Volunteer MiCorps data from Gogebic Conservation District at Wester Creek (GCD-10) found macroinvertebrate communities characterized as: Very Good [05-2024], Very Good [09-2024]."

MiCorps
Monitoring Michigan's Water Quality
www.micorps.net

@MiCorps

Instagram
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EGLE

Nonpoint Source Program

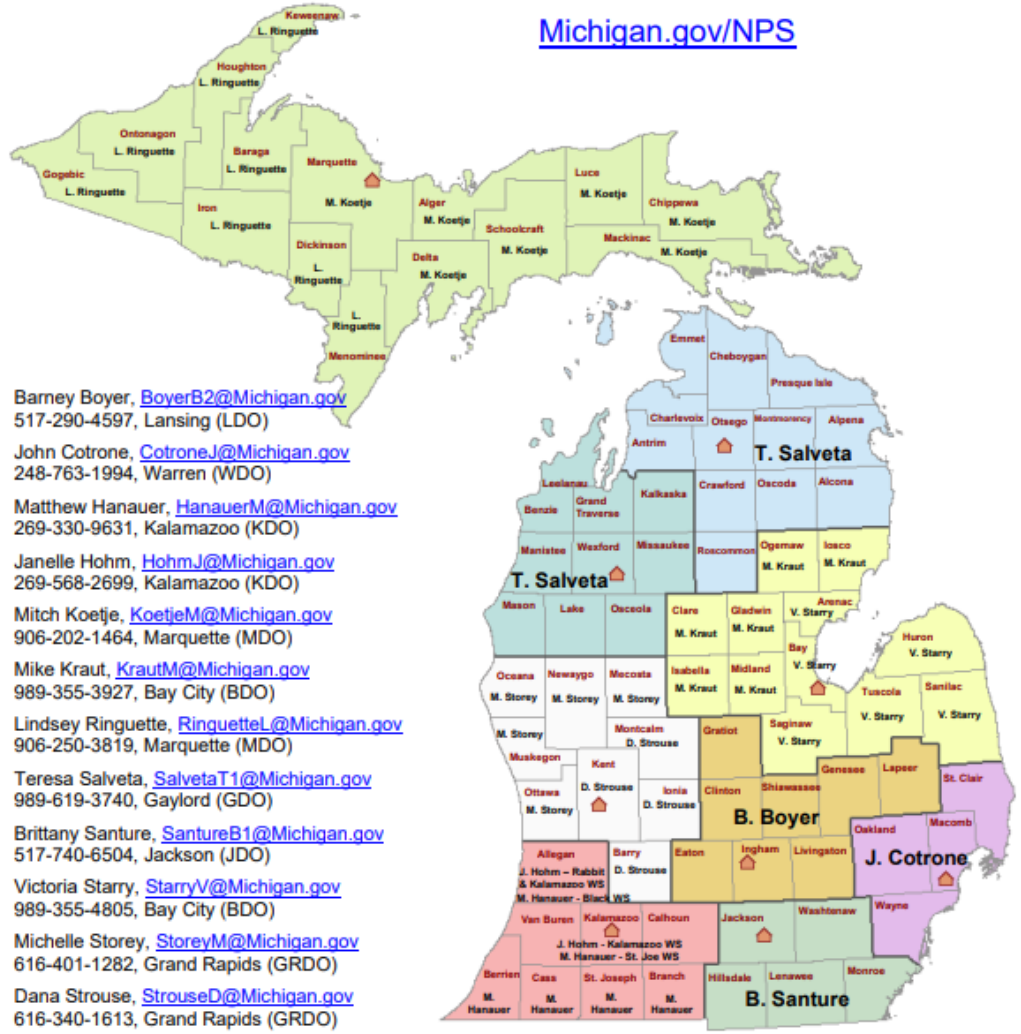
Central Staff - statewide program coordinators

District Staff - technical assistance at the local level

Michigan.gov/NPS

Nonpoint Source (NPS) Staff

Michigan.gov/NPS



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10/25/2025

Nonpoint Source Pollution & Watershed Management

- Nonpoint Source (NPS) pollution occurs when pollutants from the land are deposited into rivers, lakes, wetlands, and groundwater by rain, snowmelt, and wind

- NPS pollution addressed by development and implementation of a comprehensive plan that addresses existing and future water quality problems

MiCorps data can . . .

- Be used to assess watershed and identify areas that need additional investigation
- Help determine other parameters that need to be assessed
- Be used as information to support a Targeted Monitoring Request for additional assessment work by EGLE



Targeted Monitoring Request Process

An opportunity for stakeholders to provide input on potential water quality monitoring locations for EGLE-WRD staff in the upcoming field season.

MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

Leveraging Participatory Science Data to Monitor Chloride Impairments in the Rouge River (MI)

Jack Cotrone

Nonpoint Source Pollution Program

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Chloride as an Environmental Pollutant

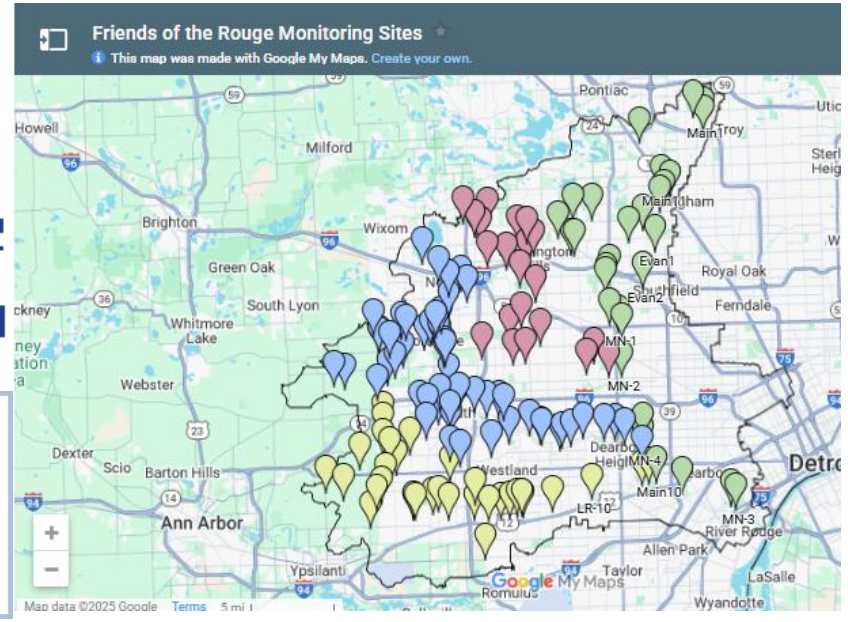
- Many sources
- Difficult to remove once in the environment
- Acute and chronic toxicity
- Role in “urban stream syndrome”
- Seasonal lake dynamics
- Lake trophic disruptions
- Degrades infrastructure

Friends of the Rouge MiCorps Program

- 501 (c)(3) with a mission of restoring, protecting and enhancing the Rouge River though stewardship, education, and collaboration
- Highly urbanized watershed
- Participating in MiCorps since 2001
- Spring/Fall invertebrates and stoneflies
- 143 sites, 40+ each year

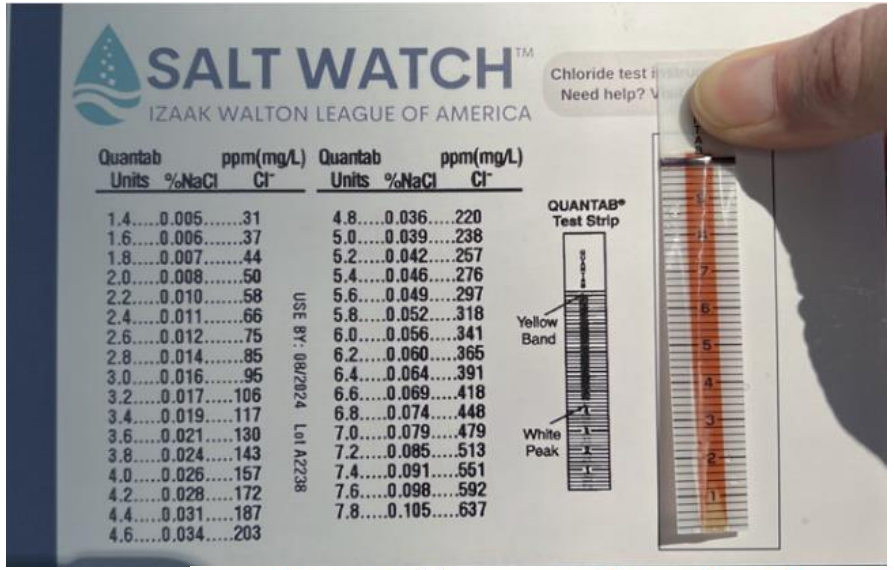
Friends of the Rouge

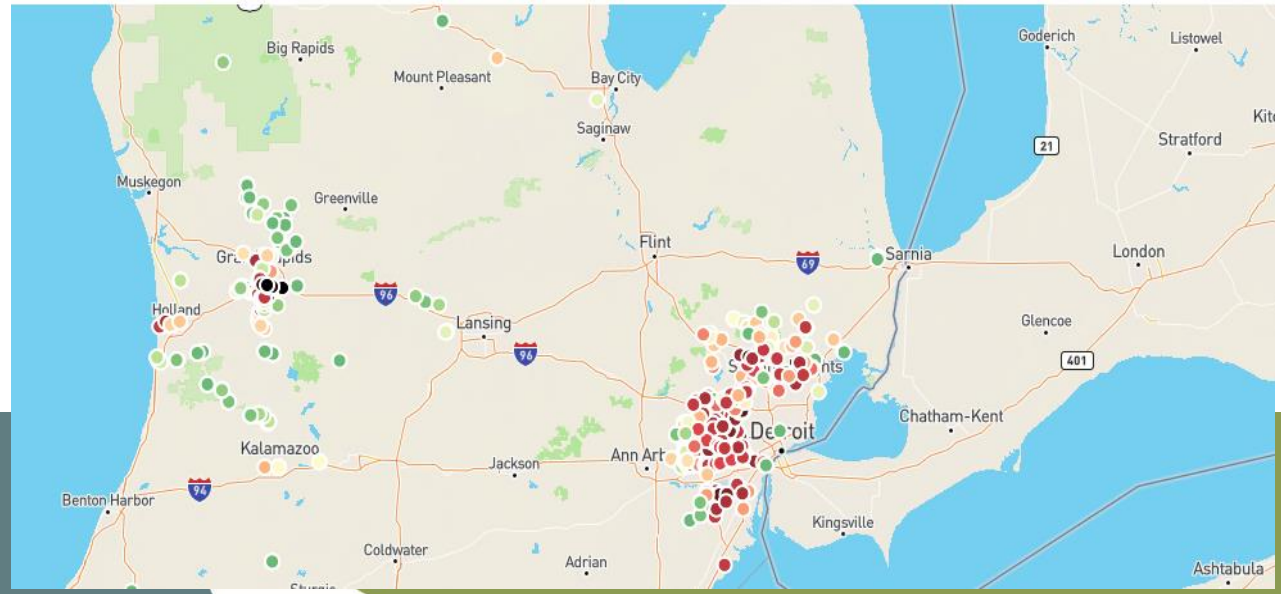
Volunteer Stream Monitoring Program
Michigan Streams – Ours to Protect
www.micorps.net



Izaak Walton League Salt Watch Program

- Free testing kits
- Hach QuanTab Chloride Test Strips
- 80+ participating organizations
- Online data through Clean Water Hub
- FOTR volunteers collect data at all MiCorps sites (3+ times a year) beginning in 2020

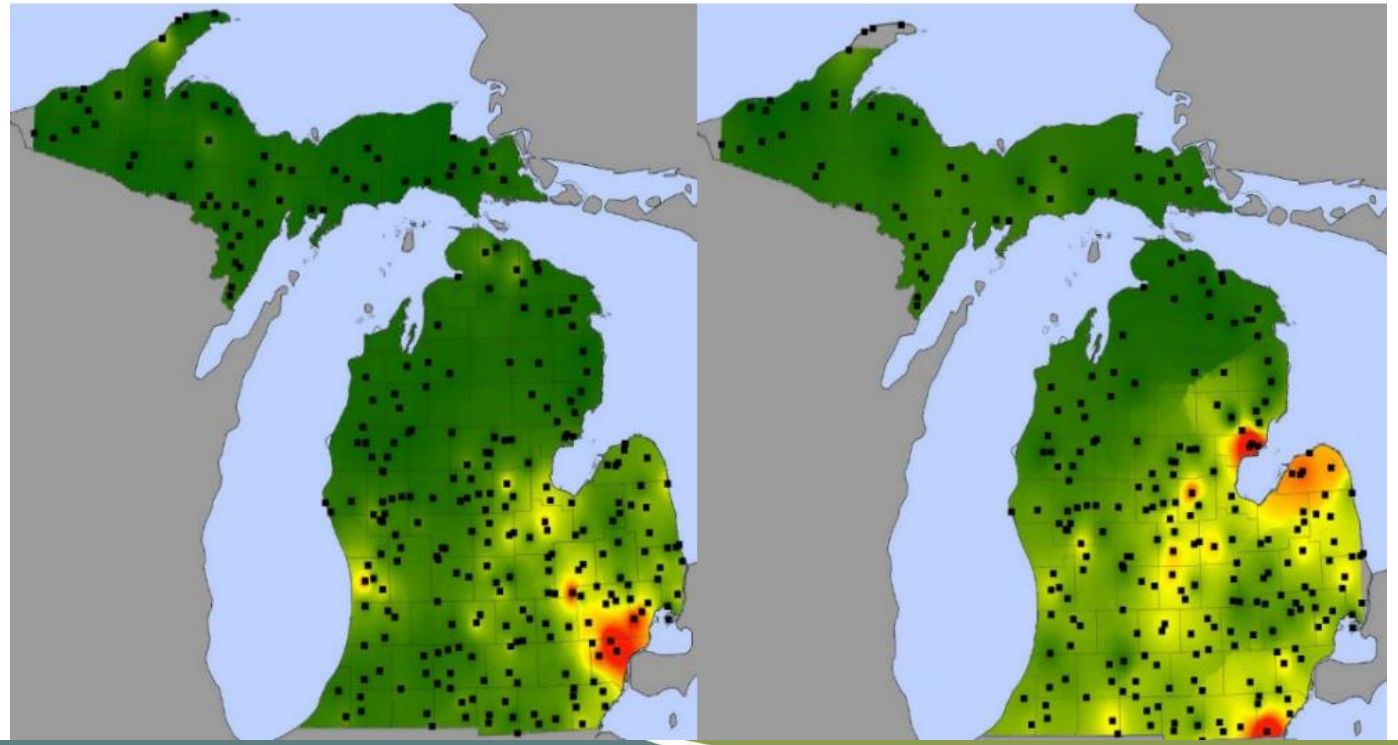




EGLE Chloride and Sulfate Water Quality Values - 2019

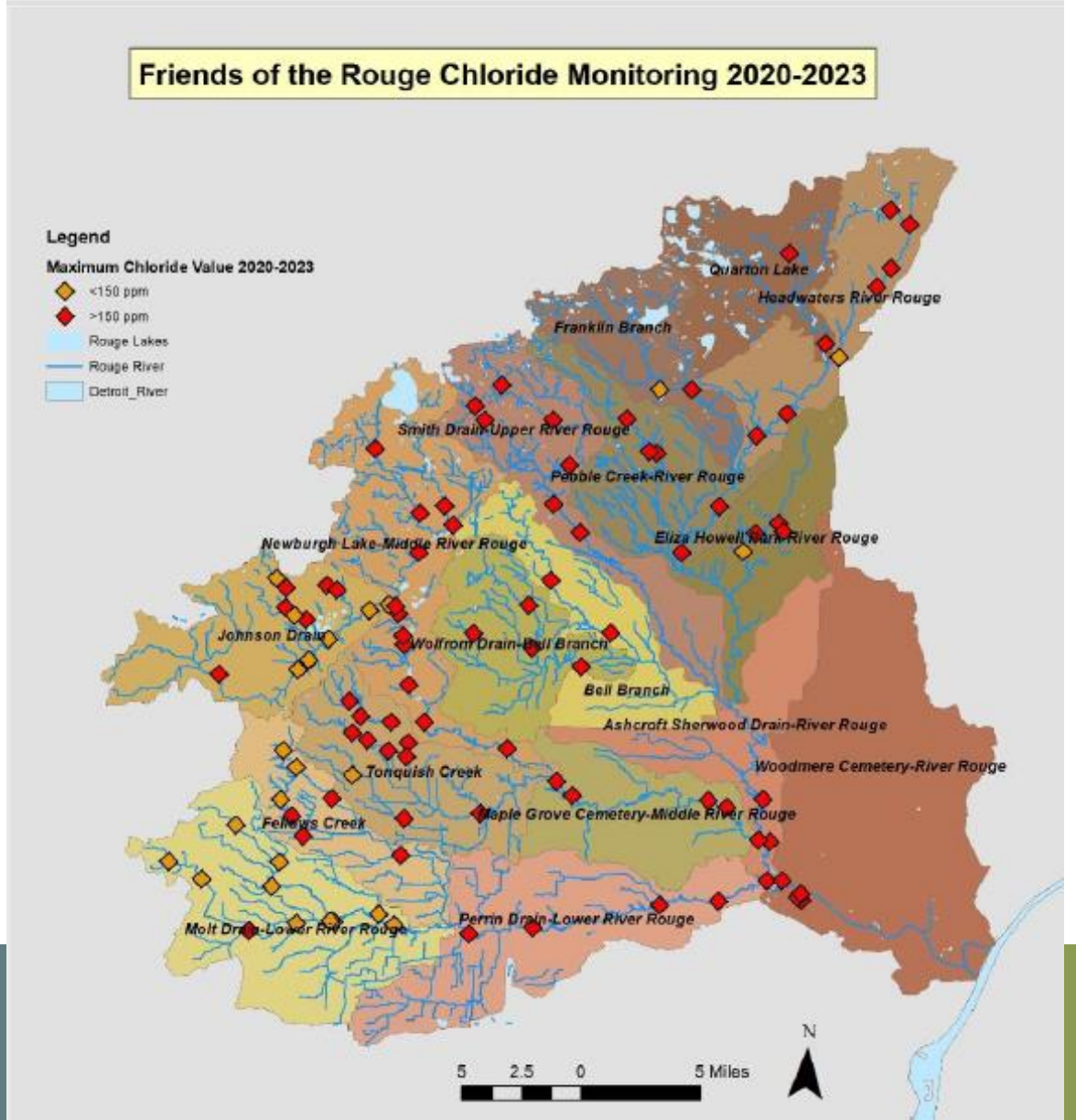
- EGLE implementation of CWA Water Quality Standards under NREPA Part 8
- WQV = Numeric value above which adverse impacts from a specific pollutant are likely to occur on water body designated uses (impairment).
- Implications for impairment listings, TMDLs, and management
- Implementation Plan

Pollutant	Final Acute Value (ug/L)	Aquatic Maximum Value (ug/L)	Final Chronic Value (ug/L)
Chloride	640,000	320,000	150,000
Sulfate	1,200,000	600,000	370,000



2023 FOTR Watershed Council Grant

- EGLE NPS Watershed Council Grant Program
- $600k annual allocation from MI state legislature
- Support orgs in various activities to benefit water quality – education, watershed planning monitoring, capacity building, equipment purchase, etc.
- 1-year timeline, $40k maximum
- FOTR awarded FY23 watershed council grant ($40k) to explore uses for chloride monitoring data



Project Scope and Deliverables

- Develop + implement monitoring QAPP
- Grab samples across the watershed to determine impairment status (4x at each site)
- Compare other data collection methods to grab results
  - Hach QuanTab test strips
  - YSI Chlorides
  - YSI Conductivity
- Summarize, display, and share findings
- Develop management recommendations
- Equipment, software training, capacity building

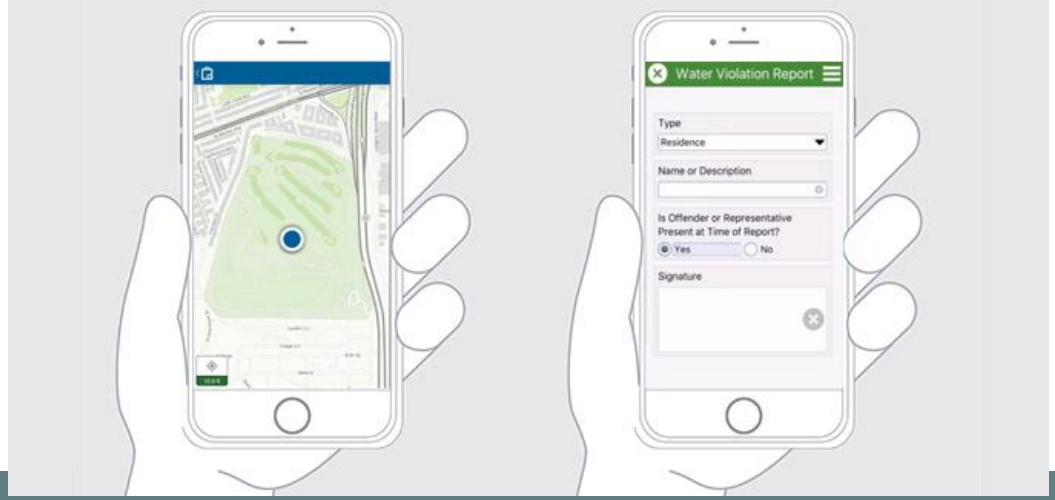
ProDSS

ArcGIS Survey123

Team SALT

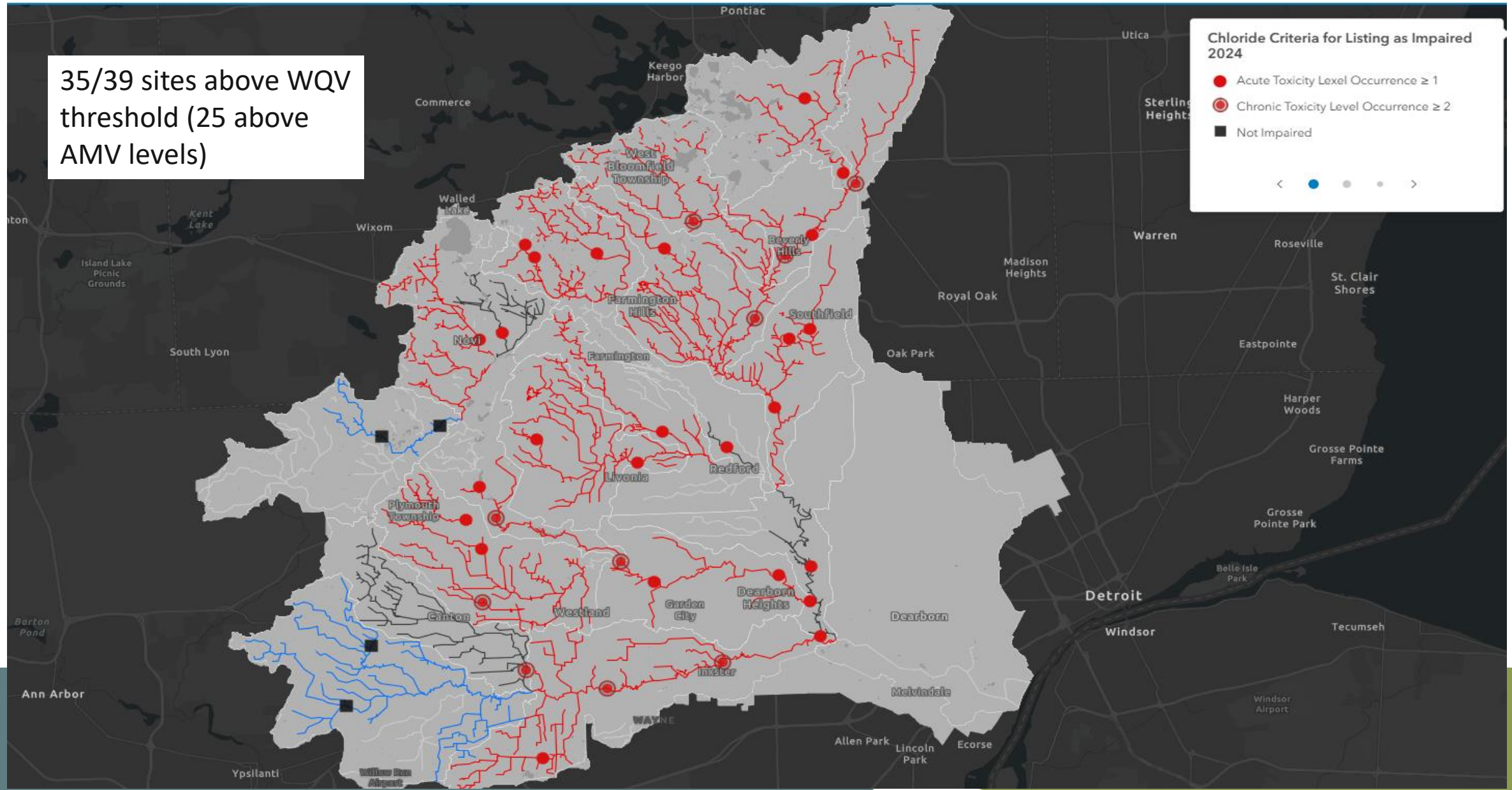
Friends of the Rouge Monitoring

- 39 sites monitored from Jan-Jun 2024, using all 4 monitoring methods
- Data input into Survey 123



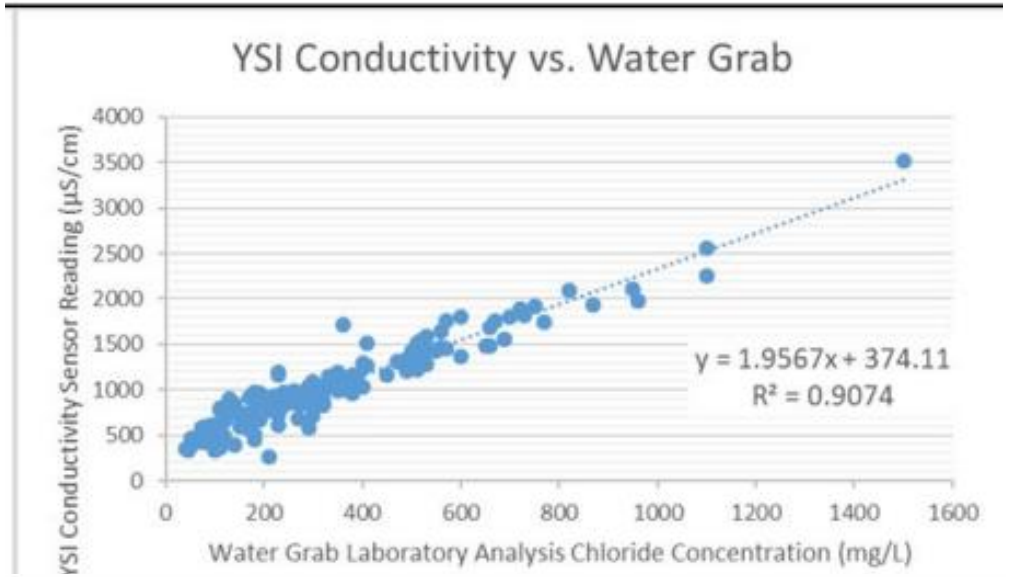
Findings – Chloride Impairments

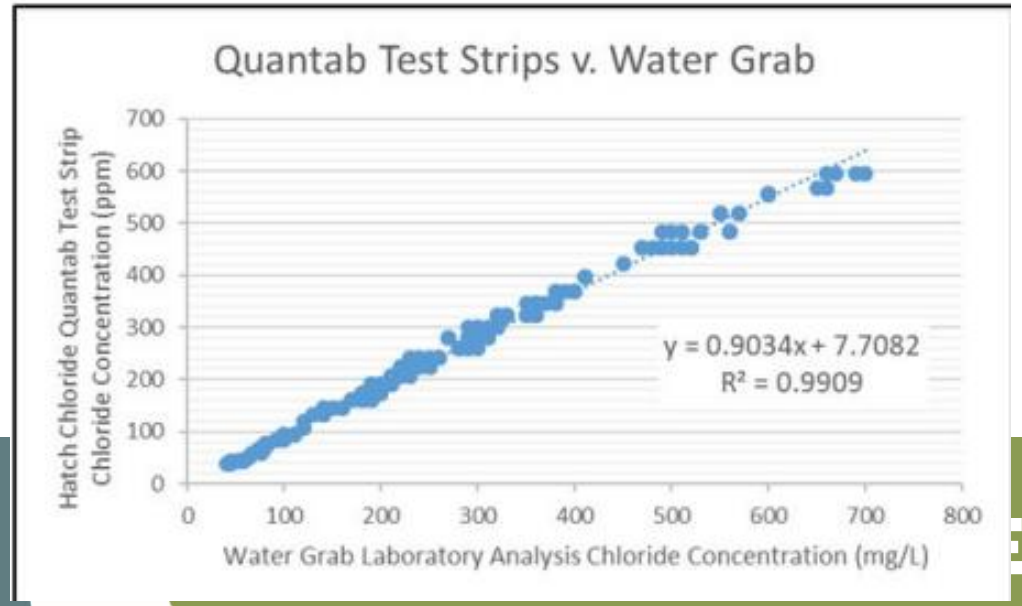
35/39 sites above WQV threshold (25 above AMV levels)



Findings – Data Analysis Methods

- Strong/consistent correlation between conductivity/chloride
  - Potential for conductivity as a proxy (chloride>sulfate)
  - Potential for continuous/real time monitoring
- Inconsistent results from YSI chloride sensor
- **Strong potential for use of QuanTab test strips**



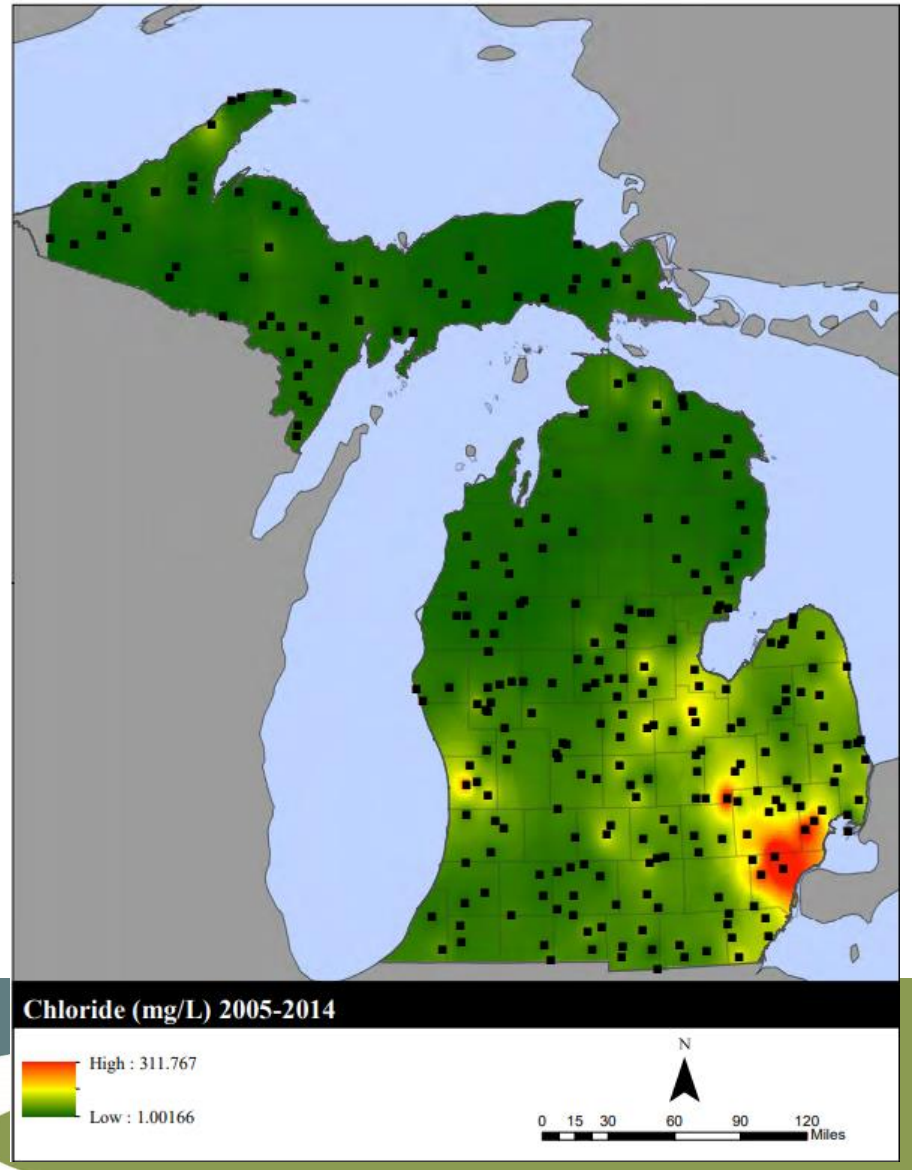


Next Steps – Rouge River

- EGLE evaluates Rouge chloride impairment listings for inclusion in the 2026 Integrated Report
- FOTR continues to use volunteer-collected data to monitor chlorides and expand datasets
- Both orgs use data to identify possible chloride sources and prioritize management solutions
  - Additional monitoring at problem sites
  - 9 Element Watershed Management Plans
  - TMDLs/NPDES permits
  - Education and outreach
  - Policy and advocacy

Next Steps – Statewide

- Encourage adoption of chloride test strips in other volunteer water quality monitoring programs
- Explore opportunities for using new/existing strip test data for determining impairments in other watersheds
- Use data to support chloride/sulfate WQV Implementation Plan actions
- Consider potential uses for other volunteer-collected water quality data



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- FOTR Chloride Monitoring Project
- FOTR MiCorps Monitoring Data
- Izaak Walton League Salt Watch
- EGLE NPS Watershed Council Grant Program
- EGLE Chloride and Sulfate Implementation Plan
- FOTR Stonefly Search on 1/24/26 @10:00