

MICHIGAN CLEAN WATER CORPS  
PRESENTS

# Celebrating the First 10 Years of MiCorps: People and Results



Dr. Paul Steen

Huron River Watershed Council, MiCorps Program Manager

# Outline



- Who are we?
- What have learned?
  - ▣ Who is using MiCorps data?
  - ▣ Stream Awards
  - ▣ Lake Awards
- What lies ahead?





# Who makes up MiCorps?



Elwin Coll, Chair, MiCorps  
Steering Committee





# Who makes up MiCorps?





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Group photo of the 2009 MiCorps stream training participants. Photo: Huron River Watershed Council.





# Who makes up MiCorps?



Volunteer stream monitors help to identify the "bug" samples they collected. Photo: Keith West.





# Who makes up MiCorps?



In the past 10 years, MiCorps has been made of:

Clinton River Watershed Council  
Coldwater River Watershed Council  
Flint River Watershed Coalition  
Friends of the Rouge  
Friends of the St Clair River Watershed  
Huron River Watershed Council  
Huron-Pines  
Mid-Michigan Environmental Action Council  
Muskegon River Watershed Assembly  
Pine River/Van Etten Lake (PRVEL) Coalition

## Watershed & Environmental Groups

River Raisin Watershed Council  
Superior Watershed Partnership  
The Watershed Center Grand Traverse Bay  
Timberland RC&D  
Tip of the Mitt Watershed Council  
UP RC&D  
White River Watershed Partnership

# Who makes up MiCorps?



In the past 10 years, MiCorps has been made of: County Conservation Districts

Alger  
Barry  
Benzie  
Branch  
Calhoun  
Gogebic  
Ingham

Jackson  
Marquette  
Mason-Lake  
Midland  
Muskegon  
Van Buren



*Team Leaders from the MiCorps Coldwater River Stream Monitoring (from left): Melanie Stoughton, John Mitchell, Kathy Worst, Bill Earl, and Mary Ellen Newton. Photo by Kathy Worst.*





# Who makes up MiCorps?

In the past 10 years, MiCorps has been made of:      Conservancies & Nature Preserves

Chikaming Open Lands  
Grass River Natural Area  
Kalamazoo Nature Center  
Marguerite Gahagan Nature Preserve  
The Little Forks Conservancy  
The Nature Conservancy  
The Sierra Club Foundation  
Yellow Dog Watershed Preserve



*After a little instruction, volunteers were eager to get in the river for the first monitoring day during fall 2012. Photo credit: Anna Kornoelje.*



# Who makes up MiCorps?

In the past 10 years, MiCorps has been made of: Government & Quasi-Government Groups that are hard to define!

Cannon Township  
Cass River Greenway Committee  
Great Lakes Commission  
Livingston Co. Drain Commissioner  
Macatawa Area Coordinating Council  
Michigan DEQ  
Michigan DNR





# Who makes up MiCorps?

In the past 10 years, MiCorps has been made of:

Educators!  
Anglers!

The AuSable Institute  
Lake Superior State  
University  
Michigan State University

Michigan Council of Trout  
Unlimited and several  
local Trout Unlimited  
Chapters



*Dr. Bryan Burroughs, Executive Director of Michigan Trout Unlimited, urges volunteer monitors to step up to the challenge during his keynote address at the 2009 MiCorps Annual Conference. Photo by Chauncey Moran.*



# Who makes up MiCorps?

In the past 10 years, MiCorps has been made of:

More Lake Associations than could possibly be listed!

Thousands of volunteers!

These lake groups have been involved in Lake AND Stream Monitoring:

Glen Lake Association, Inc.

Lake Leelanau Lake Association

Michigan Lake and Stream Associations, Inc.



# Who makes up MiCorps?



## MiCorps is YOU!

Corps defined as: A body of people engaged in a particular activity.


We monitor, love, and manage our freshwater natural resources!





# What have we learned?

## Mining the Michigan Data Exchange



Michigan Clean Water Corps

Home About Listserv Calendar Search Contact

Lake Monitoring Stream Monitoring Directory Data Exchange Resources

### MiCorps Data Exchange Network

Select from the search and display criteria below to view and download data from the MiCorps Data Exchange Network. If you have any questions about what these fields mean, please refer to the [field description](#) page. These data were collected by trained lake monitoring stewards following approved quality assurance procedures. Please contact MiCorps staff to see a copy of the Quality Assurance Project Plan (QAPP) for a specific organization. If you have any questions please email [midata@glc.org](mailto:midata@glc.org) or contact MiCorps staff at 734-971-9135.

### Raw Data Search Criteria

**1. Search by County, Watershed, Lake Name or All sites** - Select County, Watershed, Lake Name, or All. Then, select the specific values you want displayed. Hold down the control key to select more than one value. There are no lake sites for counties, watersheds, or lake names which are not listed.

☐ **County** - [View county reference map](#).

Alcona  
Alger  
Allegan  
Alpena  
Antrim

☐ **Watershed / Hydrologic Unit Code (HUC)** - [View Map Lower Peninsula](#) or [Upper Peninsula](#).

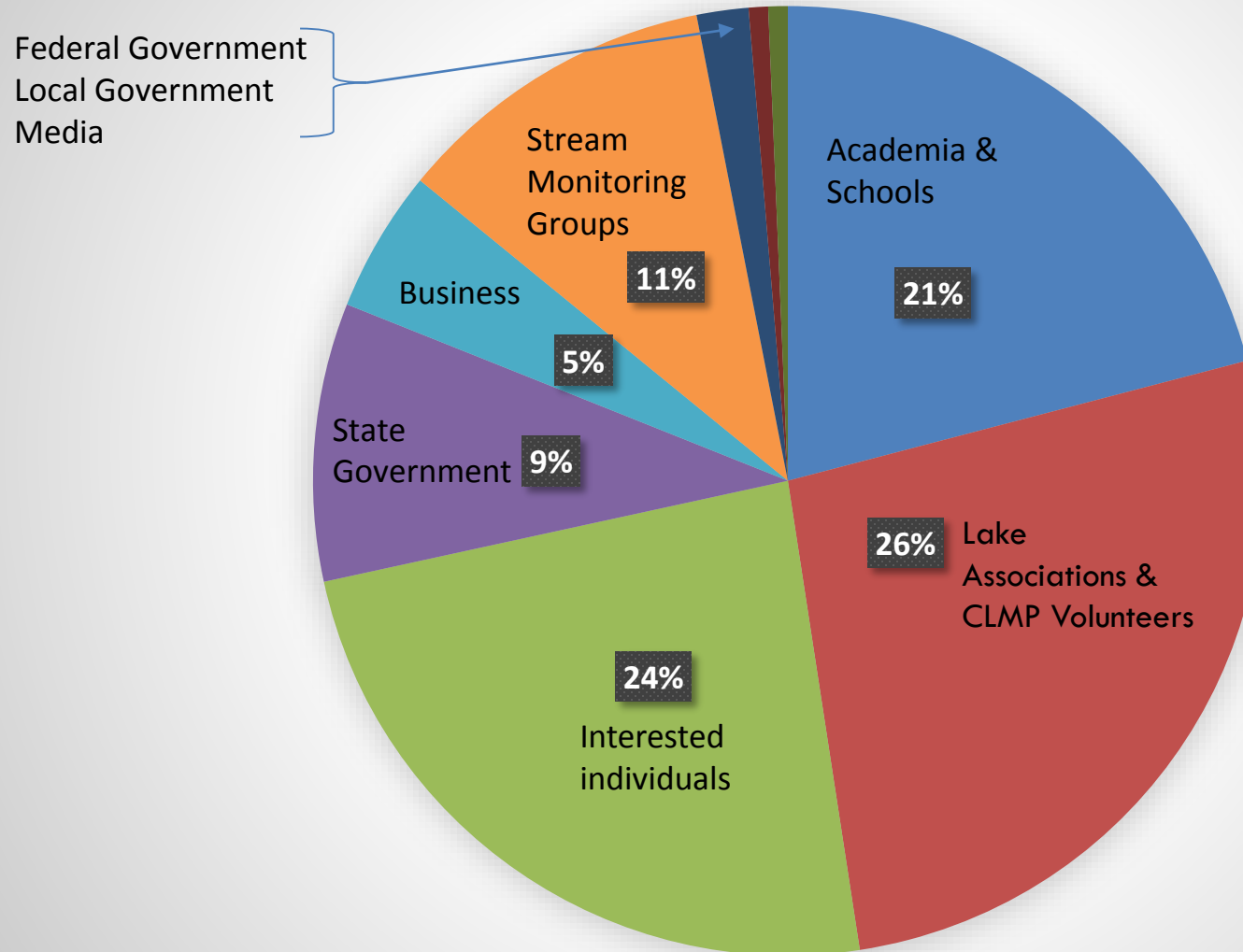
Au Gres-Rifle(04080101)  
Au Sable(04070007)  
Bad-Montreal(04010302)  
Betsie-Platte(04060104)  
Betsy-Chocolay(04020201)

☐ **Lake Name** - Use official lake name found on USGS topographic maps; refer to [www.topozone.com](http://www.topozone.com).

Ada Impoundment (Thornapple River)  
Algonquin  
Allen  
Angela  
Angelus

# Who is looking at MiCorps data?

2011-2013 Optional Survey Responses, n=454





# Stream Monitoring Data (Macroinvertebrates)

## Some factoids

- 1,839 macroinvertebrate samples
  - 1,538 identified to the required MiCorps level (mix of Order and Family)
  - 301 identified to the sample levels
- 470 places sampled
  - 133 of these have family level data (28%)
- Side note— Stream Quality Index- SQL. (Poor, Fair, Good, Excellent).
  - Excellent: >48
  - Good: 34-48
  - Fair: 19-33
  - Poor: <19

# Map of stream sample points

- Samples found in 34/62 of major Michigan Watersheds (HUC 8s), with samples reflecting where Michigan's population resides.
- SE Michigan well sampled in particular
- There are areas in Michigan that have not been sampled at all by MiCorps members





# Problems with data entry

- Most MiCorps members are not diligent about entering their data unless they have a current stream monitoring grant.
- Something to think about— in office volunteers! Get that data into the MDE!
- You can also email me all of your data and we will batch upload it.



# Stream awards!!

- Longest data record
- Most average sample.
- Best sample
- Worst sample



Tip of the Mitt Watershed Council volunteers sorting samples at Stover Creek. *Photo: Tip of the Mitt Watershed Council*



Sarah Litch, Bob James and Julie Hay collecting macroinvertebrates from the east branch of Hatlem Creek. *Photo: Glen Lake Association, Inc.*

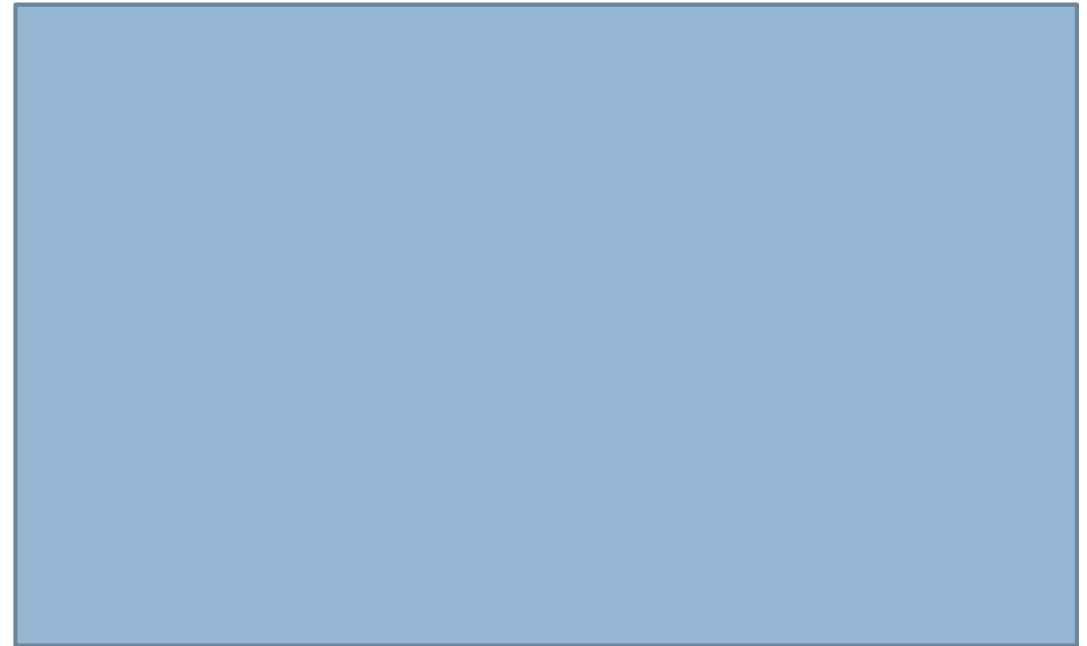


# The Hellgrammite Award!

Longest Data Record  
Mid-MEAC

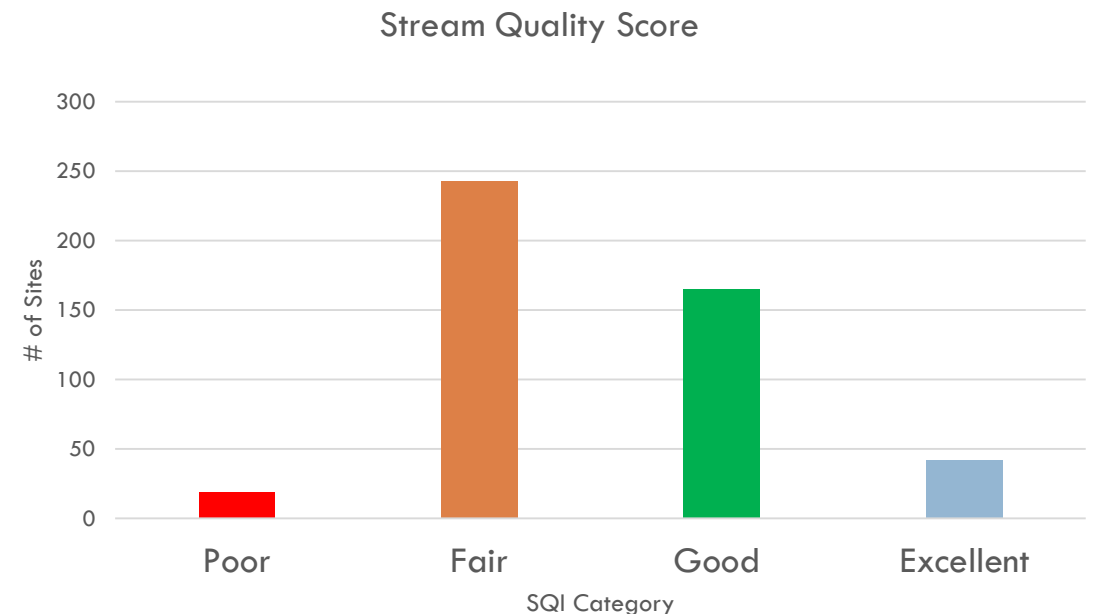


- Mid-Michigan Environmental Action Council received a grant in 2007.
- They have entered data into the MDE ever since, twice a year.
- Featured here is a tributary to the Red Cedar. It scored a SQL of 63 in 2008. They found all but 4 of the groups on the datasheet.
- Honorable mention: Friends of the Rouge. They are also very good at keeping up with data entry.



# Stream Quality Index Summary

- Average SQL for 470 sites = 33.7, standard deviation= 9
- The average score falls on the border of Good/Fair (<34 fair, >34 good)
- With a low standard deviation, this means that the vast majority of sites fall into good/fair categories
- Poor- way below average
- Fair- slightly below average
- Good- slightly above average
- Excellent- way above average





# The Flat-Head Mayfly Award



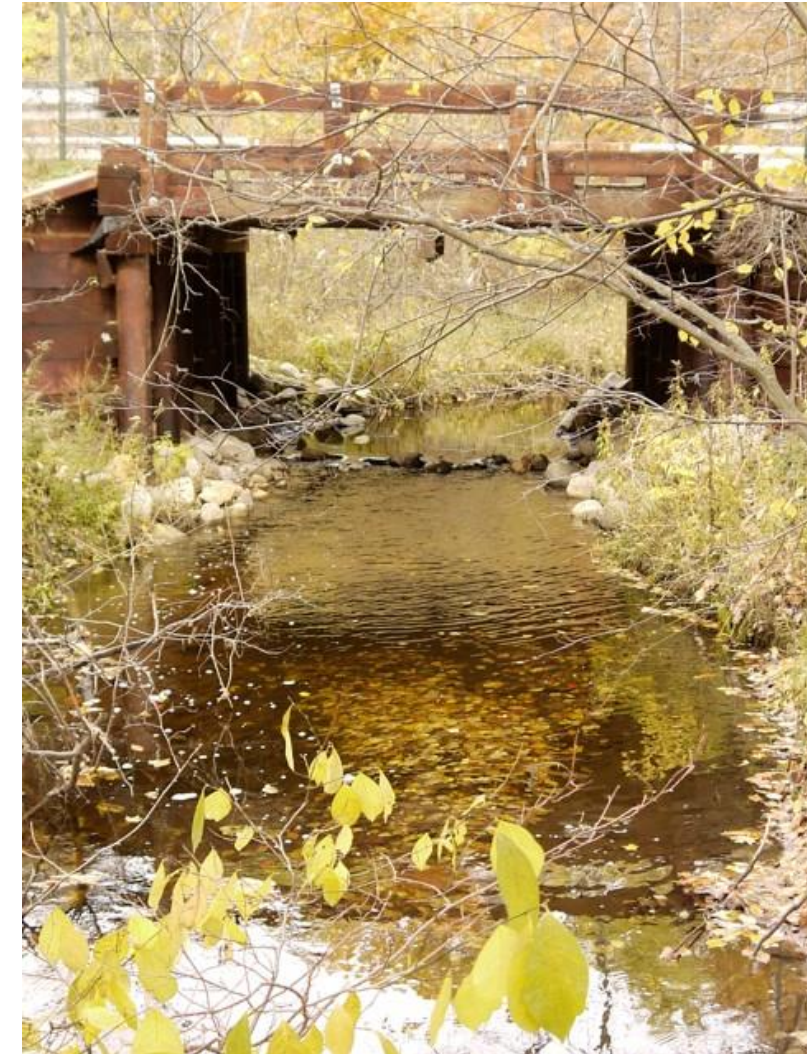
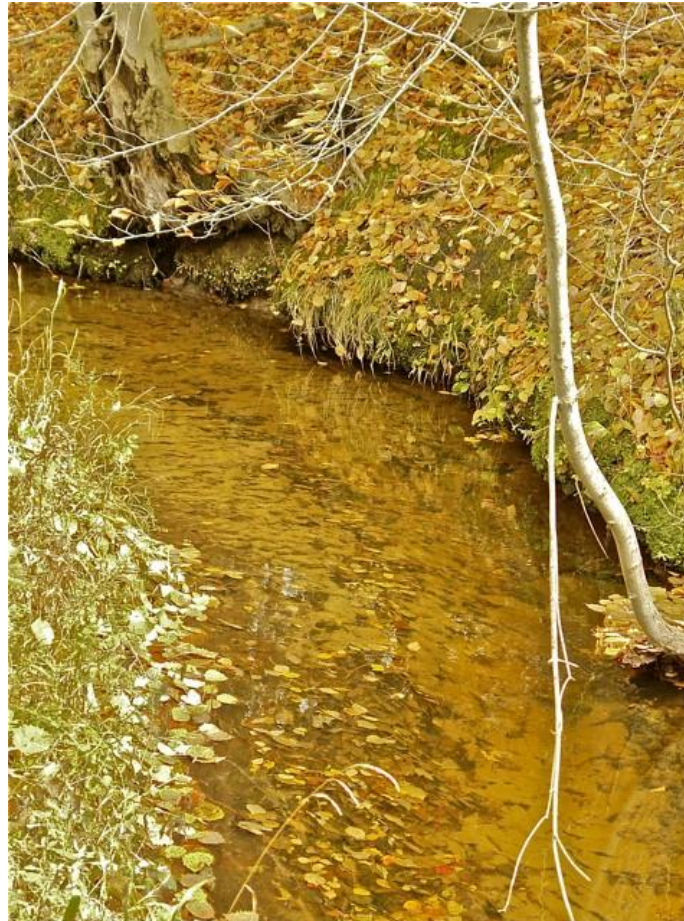
Most average sample  
Cobmoosa Creek, Baseline Road

## Typically find:

- Caddis
- Mayfly
- Helgrammites
- Stonefly
- Cranefly
- Dragonfly
- Damselfly
- Scuds

## Typically do not find:

- Alderfly
- Beetles
- Sowbugs
- Black fly
- Clams
- Water penny
- Water snipe fly





# The Perlid Award



Best Sample in the MDE  
AuSable River, Guide's Rest

- $SQI = 73.4$  on 9/11/2010
- Max possible  $SQI = 81.5$
- Sample contained every category except:
  - ▣ True Bugs
  - ▣ Water pennies





# The Leech Award



Worst Sample in the MDE  
Sauk River, Willowbrook Road

- ❑ SQI = 8.1 on 9/30/2010
- ❑ Site has been struggling with drought and flooding – runoff dominated.
- ❑ Found:
  - ▣ Crayfish
  - ▣ Dragonflies
  - ▣ Pouch snails
  - ▣ True Bugs



# Lake data info

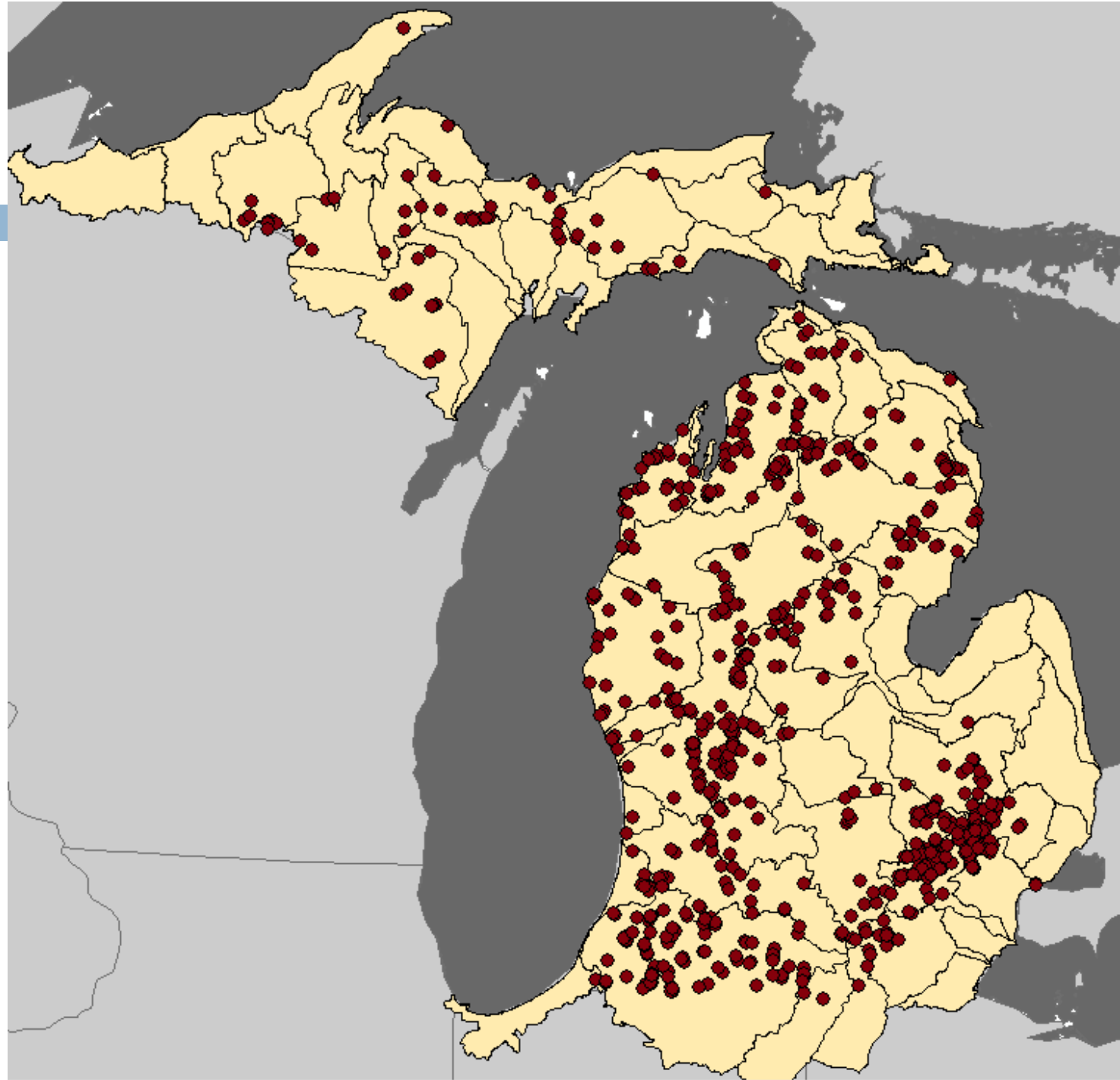


- ❑ Existed since 1974.
- ❑ Typical year ~225 lakes enrolled in the program
- ❑ Since 1974, 714 lakes have ever enrolled in the program (based on who has Secchi disk data in MDE)
  - ▣ 106,746 Secchi disk readings
  - ▣ 5,262 phosphorus samples
  - ▣ 7,983 chlorophyll-a samples
  - ▣ 63,572 Dissolved O<sup>2</sup> and Temperature readings making 3,786 lake profiles
  - ▣ Plant data is still sparse, program existed recent years only.



# Map of lakes in the CLMP

- The UP is undersampled
- More users to the MDE are looking at the lakes data than stream data.



# Lake Awards!

- ❑ Longest data record
- ❑ Most average lake
- ❑ Clearest lake
- ❑ Murkiest lake

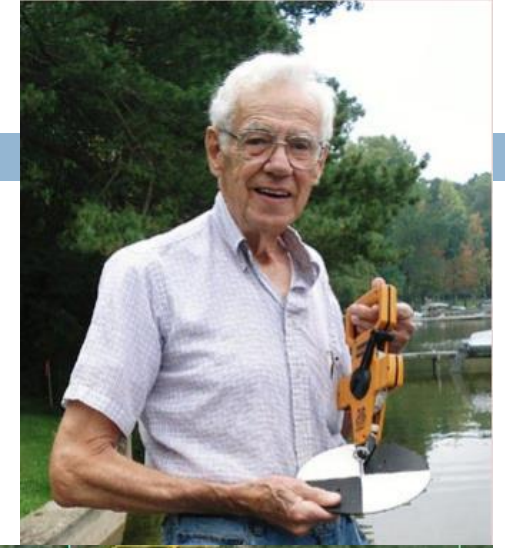




# The Sturgeon Award



Longest Lake Data Record in  
the MDE



- Corey Lake, St. Joseph County
- 723 Secchi Disk Measurements from 1974-2014
- 1974-2011 → all done by Ralph Vogel
- Mary Sue Pollitt took over in 2012.
- Ralph still makes the Secchi disks for the entire program

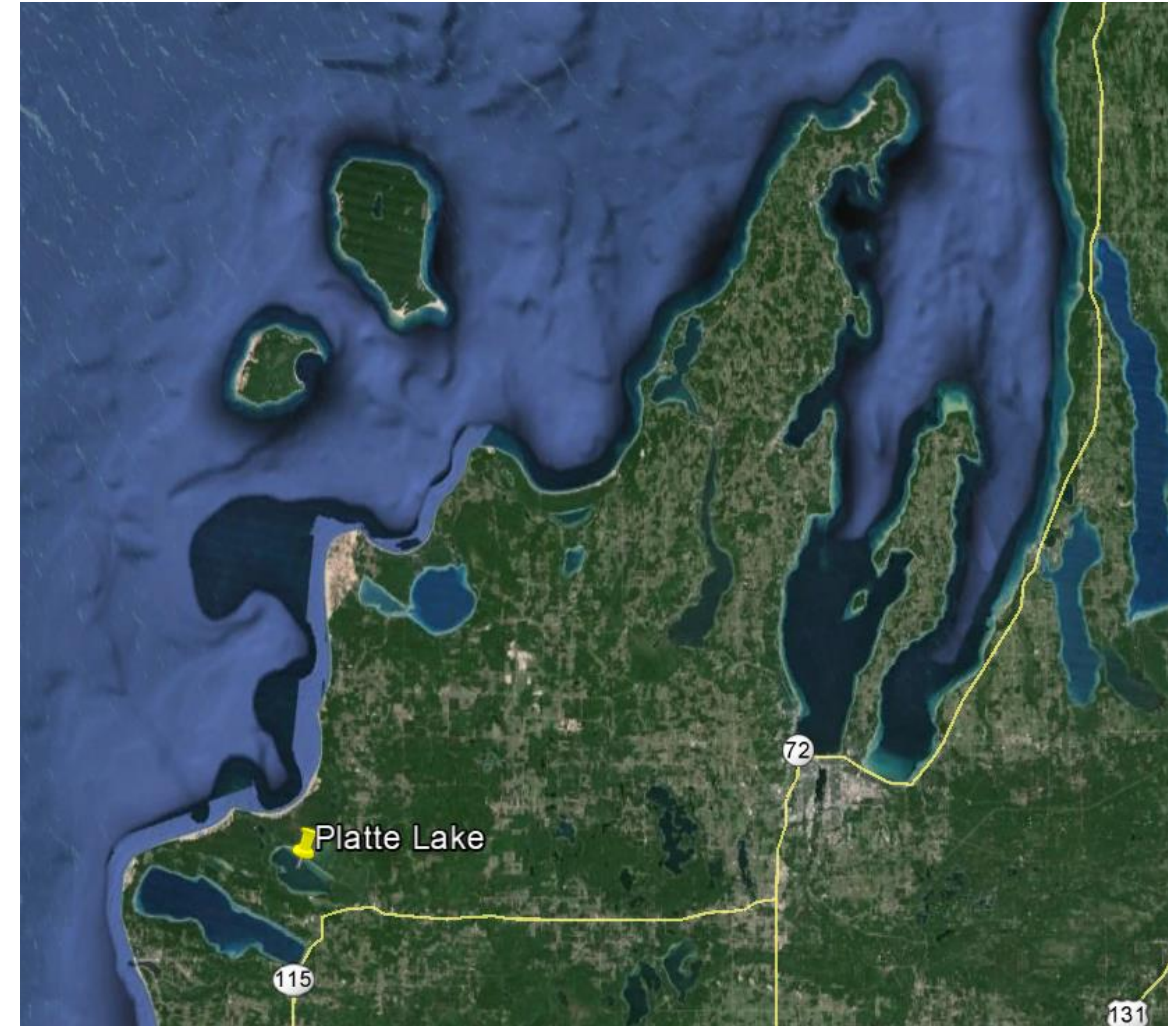


# The Sturgeon Award



Longest Lake Data Record in  
the MDE

- HONORABLE MENTION
- Platte Lake, Benzie County
- Also with 723 Measurements
- 1977-2014
- Sally Casey monitored for 19 years;  
recently has been Maris Ziemelis.





# The Bluegill Award



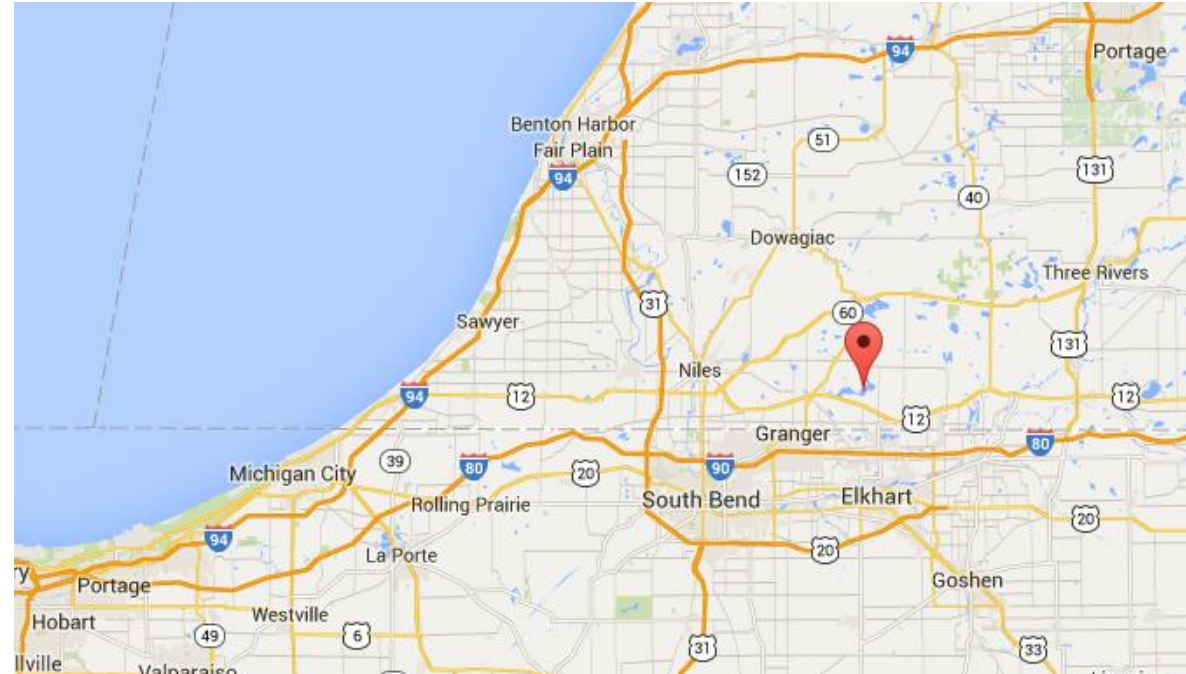
## Most Average Lake Christiana Lake, Cass Co.

### 2013 Averages for all lakes:

- Secchi: 12.7 feet
- Summer TP: 13.2 ppb
- Chlorophyll-a: 5 ppb

### Christiana Lake, Cass Co.

- Secchi: 11.9 feet
- Summer TP: 13 ppb
- Chlorophyll-a: 5.1 ppb



# The Lake Trout Award



Clearest Lake Award  
Higgins Lake

- ❑ Secchi of 57 feet on 7/7/2011 (average 39 ft in 2011)
- ❑ Low nutrient levels and underground springs give this lake great clarity, and high dissolved oxygen levels in the bottom waters.
- ❑ High DO on the bottom means that cold-water fish can live there in the summer.
- ❑ Lake trout, cisco



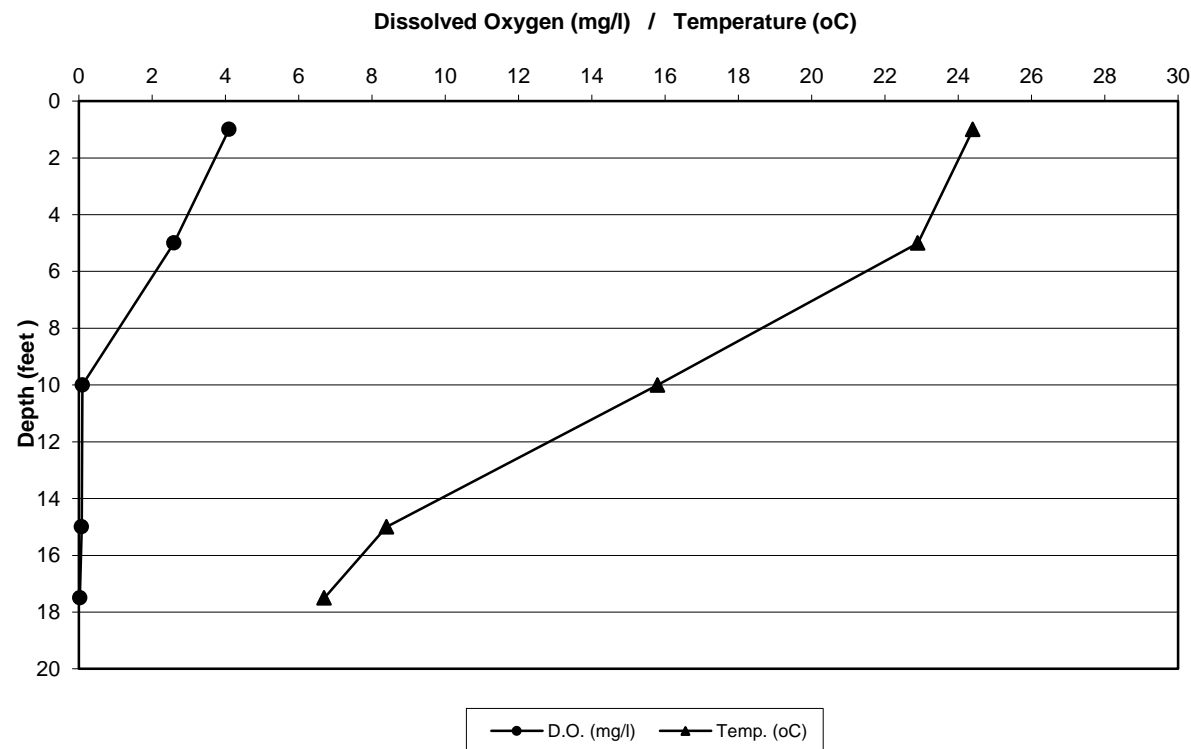


# The Ironic Award

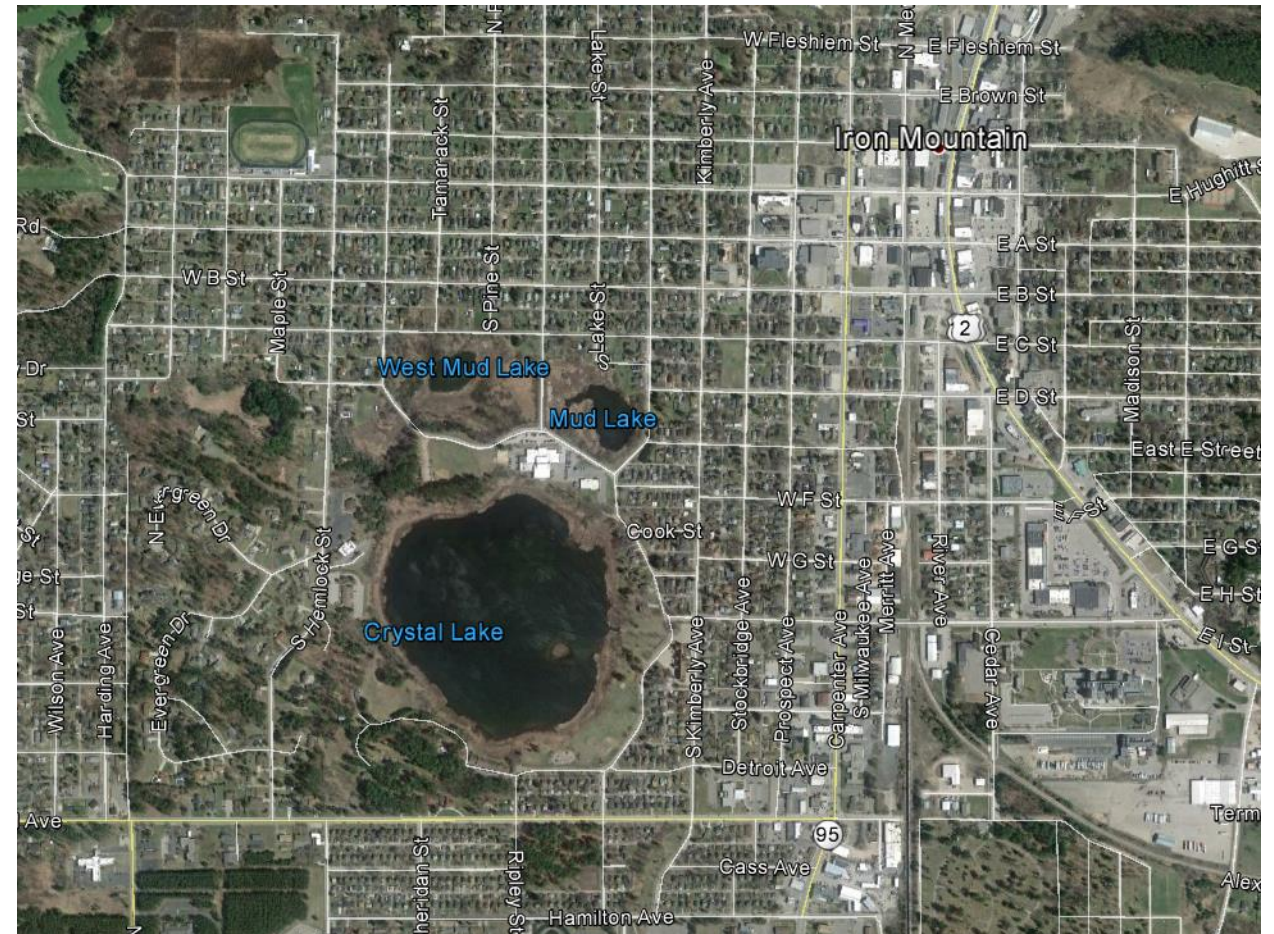


## Murkiest Lake Crystal Lake, Dickinson County

- Sampled in 2006 only
- Secchi ranged from 0.5 to 3 ft
- Phosphorus: 103 ppb



First Sister Lake, Washtenaw County, another hypereutrophic lake



# The immediate future of MiCorps-

## The next 3 years



### Upcoming additions to the program

- Social Media
- Stream Monitoring
  - ▣ Road/stream crossing
  - ▣ Stream flow
- Lake Monitoring
  - ▣ More personalized lake reports
  - ▣ Shoreline Habitat Assessment
  - ▣ CLMP training videos and training webinars to encourage participation in more remote areas.

