

## **MiCorps Final Project Report**

**Project Name:** Upper Escanaba River Volunteer Stream Monitoring Program

**Grantee:** Marquette County Conservation District

**Year awarded:** 2014

### **Program Goals & Objectives**

The overall goal of the volunteer monitoring program is to protect and improve the water quality in the streams of the Escanaba River Watershed. Through the monitoring program, MCCD and volunteers will collect baseline data on aquatic habitats and stream health of the Upper Escanaba River Watershed.

The goals of the Upper Escanaba River Watershed Volunteer Stream Monitoring Program (UERW VSMP) are as follows:

1. Foster local stewardship of water resources and awareness of water quality issues through education.
2. Engage local citizens and partners as stakeholders to identify threats to and monitor the health of our streams.
3. Acquire useful water quality and aquatic habitat data through volunteer monitoring events and to make that data available to the general public, government officials and local stakeholder groups.
4. Ensure the monitoring project is sustainable beyond the MiCorps funding period.

To accomplish these goals, the UERW VSMP utilizes the Michigan Clean Water Corps (MiCorps) Volunteer Stream Monitoring Procedures (Latimore 2006). Specific objectives of this project include increasing citizen awareness and participation by training volunteer monitors to collect baseline data; identifying water quality problems and determining water quality trends; making monitoring results available to local residents; and educating the public about water quality issues.

### **Program Summary**

The program recruits and trains a minimum of eight volunteer monitors. To promote the program and recruit volunteers, program staff attend meetings of local governments and service clubs, reach out to student and special interest groups, and publicize volunteer opportunities in local media outlets. Promotional work focuses on recruiting enthusiastic and dedicated volunteers to ensure sustainability of the monitoring program. The Program Managers take advantage of opportunities to educate groups and the general public on aquatic resource issues and the volunteer monitoring program.

Volunteers are trained in macroinvertebrate collection and identification, and habitat assessment techniques by program staff and volunteer leaders. Program staff make efforts to hold field and lab training events at least once a year. In-field data collection trainings include an overview of the program, safety protocols, review of data sheets, and in-stream collection techniques. Lab training events are held in a Northern Michigan University (NMU) biology lab and led by a macroinvertebrate expert. During these lab trainings, trainees are given an overview of the program and are educated in macroinvertebrate taxonomy, and are shown identification techniques of the common macroinvertebrates usually collected. Trainees are given specimens to practice identification using various tools such as microscopes and dichotomous keys.

Program staff and volunteers conduct spring and fall monitoring at eight sites of the streams and tributaries in the Upper Escanaba River Watershed. Data collected by volunteers includes benthic macroinvertebrate diversity and physical habitat. Aquatic macroinvertebrates are the primary focus of this monitoring program. Aquatic macroinvertebrates are collected and identified stream-side to the order level primarily. Samples are also identified in-lab to family level by a volunteer macroinvertebrate expert, as determined by the MiCorps protocols. The macroinvertebrates are allied to determine diversity in the benthic community and gauge the health of the stream reach. Volunteers conduct a habitat assessment at least once a year every fall to get an indication of the physical characteristics of the stream reach.

Streams are sampled annually in the spring (mid-May, preferably before leaf out) and fall (early-October or after leaf drop). Sites are sampled during the same two-week time frame each year to minimize seasonal variability in macroinvertebrate distribution and abundance. Sites are monitored more frequently if a habitat appears to be changing. The project is intended to continue indefinitely. New sites are added on an irregular basis, as volunteer and community interest occurs or problems are detected.

The final step and goal of the program is to make monitoring results available to interested parties. Data are entered into the MiCorps Data Exchange and results are summarized for use by interested stakeholder parties. Program staff distribute monitoring findings in the Marquette County Conservation District (MCCD) Annual Report.

### **Challenges & Obstacles**

All of the goals and objectives of the program were met to a substantial degree. There were however, several challenges that were faced throughout the duration of the funding period.

Recruiting and retaining volunteers in a region with a relatively low population at times was difficult. Although the city of Marquette has a population of 21,441, the county of Marquette is the largest in the U.P. and has a population that is quite dispersed. The sample sites are located near the village of Gwinn, 30-50 miles away from the city of Marquette—so recruiting dedicated volunteers that were willing to drive to sample sites proved to be at times difficult. We overcame this challenge by holding a volunteer training in Gwinn with the hopes of recruiting folks that lived close by and were significant stakeholders. We successfully recruited several volunteers that joined us for multiple data collection events.

Another challenge we faced was seasonal variability at sample sites. Sample sites were scouted and marked prior to the sampling dates in the fall of 2014, when water levels were relatively low. When we returned to the sample sites in the spring of 2015, three of the sites proved to be unsuitable for sampling due to high water levels and high stream flows. Since the safety of volunteers and district personnel is the number one priority when collecting data, the Program Managers were forced to find replacement sites. We located a Michigan Department of Environmental Quality (MDEQ) Report that summarized a series of macro collection events at sites within the Escanaba River Watershed. In spring 2015, we visited the sites that the MDEQ sampled and found they were suitable for our sampling program so they were marked and added to our list of sample sites. After visiting the sites a second season, in the fall of 2015, the sites still proved to be safe for monitoring.

### **Environmental & Other Benefits of the Program**

In addition to collecting important baseline water quality data that is useful to organizations prioritizing restoration sites, the stream monitoring program provides many other benefits that will have positive environmental impacts into the future. One such environmental benefit are the volunteer “eyes on the ground” that act as watchdogs for any negative trends or impacts to the watershed. The study area is somewhat remote, with a small year-round population and has been historically and currently impacted by mining and logging—so it is important that volunteers are frequently visiting the area and can detect when problems are occurring.

A specific hazard to this portion of the Escanaba River Watershed is the limitation on fish passage. Many of the road-stream crossings in this watershed are degraded, inadequately sized or improperly constructed causing sediment deposition and restrictions to the movement of cold water species to high quality spawning habitats. In 2010, the Fred Waara Chapter of Trout Unlimited partnered with the Escanaba River Association and the Michigan Department of Natural Resources to initiate the Escanaba River Watershed Partnership (ERWP), which focuses on cold water species habitat improvement projects. The majority of the data collected by this partnership included fish surveys, water quality monitoring, and some aquatic habitat assessments. The data collected through the Upper Escanaba River Watershed Volunteer Stream Monitoring Program will provide additional, regular data to the ERWP and will assist them in identifying problem road-stream crossings and in prioritizing restoration projects.

### **Education, Outreach and Public Involvement**

Program staff worked with professors and students in NMU’s Outdoor Recreation Department in several ½ day long trainings that provided the students the opportunity to learn the importance of environmental monitoring and data collection techniques. Program staff also made a presentation to Marquette Senior High School’s Conservation Biology class and conducted a hands-on exercise in macroinvertebrate ID and classification.

The stream monitoring program was featured in several news articles (enclosed below) in the local newspaper, The Mining Journal. Program staff were also featured in a nighttime TV news spotlight. The Program Coordinator created a travelling macro and program display complete with a program overview, photos, and macro specimens. These publicity activities were useful in spreading awareness of water quality issues and in recruiting interested volunteers.

### **Program Partners and Contributions**

During the proposal writing process, many local partners pledged contributions to the project. Though several of these potential partners did not follow through with their commitment for various reasons, several key partners did commit and were essential to the success of the program. Program partners and their contributions are listed below:

- NMU Biology Department provided lab space and equipment for hosting macro ID workshops as well as fisheries graduate students to lead the trainings.
- NMU Outdoor Recreation Department provided the opportunity to educate a college-level class on in-field macro collection and ID techniques. This was also a great opportunity to recruit student volunteers.
- Marquette Senior High School provided the opportunity to educate a conservation biology class on the importance of environmental monitoring and in-stream monitoring and macro ID techniques.
- Fred Waara Chapter of Trout Unlimited provided suggestions for sample sites based on the member's familiarity with the watershed. They also allowed for the Program Coordinator to make a presentation on the program at a monthly meeting. Several key volunteers were recruited from this chapter of Trout Unlimited.
- Alger Conservation District provided project oversight and shared technical expertise and personnel.
- Dickinson Conservation District (DCD) adopted a sample site that lies within Dickinson County. Trained DCD personnel collect habitat data at the site yearly macroinvertebrate twice a year and comply with the program's monitoring protocols.

### **Program Sustainability**

The sustainability and continued success of the stream monitoring program will be determined by dedicated volunteer involvement. Our goal, which was in many ways reached, was to train and engage key volunteers that will act as stewards by adopting sample sites and collecting regular water quality data. Past the funding period for this project, MCCD will continue monitoring activities as long as volunteers are committed and various funding sources are available. Numerous stakeholders in local watershed protection (citizens and partners) have expressed volunteer commitment for the duration of this project. MCCD will be sure to always communicate with volunteers and partners, and to demonstrate our appreciation for their vital role in this project. MCCD personnel will continue to seek additional sources of funding to replace equipment, to recruit, train and coordinate volunteers, and to continue outreach to partners and the general public.



*Are you interested in stream ecology?*

*Do you enjoy working and learning outdoors?*

*Are you looking for a fun, meaningful volunteer opportunity?*

**Join the Marquette County Conservation District's  
Stream Team!**

Help us to monitor the health of streams and tributaries in the Escanaba River Watershed while learning about aquatic resources and stream ecology. Volunteer Stream Team members generate useful water quality data by collecting and identifying aquatic insects and conducting stream habitat assessments.

- No experience necessary
- We will provide all equipment
- Guaranteed fun!

For more info or to sign up for a monitoring event, contact Ally at  
**906-226-2461 ext. 102**



*We are an equal opportunity employer and program provider.  
Funding for this program was provided by Michigan Clean Water Corps.*

# Volunteer Stream Monitoring Opportunity



*Are you interested in stream ecology?*

*Do you enjoy working and learning outdoors?*

*Are you looking for a fun, rewarding volunteer opportunity?*

**Join the Marquette Conservation District and MiCorps in protecting our precious freshwater resources.**

Help us to monitor the health of streams and tributaries in the Escanaba River Watershed while learning about aquatic resources and stream ecology.

**[Fall 2014 monitoring: October 6-11]**

**Become a Stream Team Leader!**

## **Stream Monitor Volunteer Training**

### **Gwinn**

Wednesday, September 17th, 4:00 pm-7:00 pm

@ Gwinn Clubhouse, 165 N. Maple St.

### **Marquette**

Saturday, September 20th, 10:00 am-3:00 pm

@ Marquette Township Hall, 1000 Commerce Dr.

Training is not required to be a Stream Team Volunteer, but by attending one of our training workshops you will be qualified to lead a team of volunteers conducting field activities such as:

- Macroinvertebrate collection & ID
- Stream habitat assessments

**For more information or to sign up for a training workshop contact Ally at:  
[allyson.dale@mi.nacdnet.net](mailto:allyson.dale@mi.nacdnet.net) or 906-226-2461 ext. 102**

To join the MCD Stream Team contact  
[allyson.dale@mi.nacdnet.net](mailto:allyson.dale@mi.nacdnet.net)  
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# Delve beneath the surface of our streams!

## An Aquatic Macroinvertebrate ID Workshop



If you love the natural beauty of UP streams and wildlife, why not look a little closer at the diverse creatures near the bottom of the food chain?!

Join Alger and Marquette County Conservation Districts on  
**Friday, March 20th**  
**from 5:30pm-7:30pm in Room 1106 of NMU's New Science Facility**  
 for an informal introduction to macroinvertebrate identification.

We'll supply the critters, the microscopes, and the expertise, just bring your curiosity!

**For more info, call 387-2222 or email [josh.forrester@macd.org](mailto:josh.forrester@macd.org)**

*We are an equal opportunity employer and program provider.*






Upcoming Events

**Macro ID Workshop Flyer, spring 2015**



**Traveling Program and Macro Display**

# Outdoors

FRIDAY  
OCTOBER 16, 2015 1C

## Bush 'N Brook

### Tough time to be a deer in U.P.



DAVE SCHNEIDER

The annual deer hunting forecast was released recently by the Michigan Department of Natural Resources, and it doesn't hold too many surprises. As most everyone who hunts deer in the Upper Peninsula knows, the herd is way down across most of the region.

In the report, the DNR cites three severe winters in a row as significantly impacting white-tails in the U.P.

"This has led to decreased deer numbers throughout the region with losses most notably in the 1.5 and 2.5 year old age classes," the report states.

This correlates with most of the early reports coming in from archery hunters, with most I've talked to saying they are seeing few if any deer. There are a few small bucks being spotted by some, but not many.

Of course, the weather has been mild so far this fall and natural deer roams are still abundant, so perhaps fewer sightings — as well as trail camera photos — might just be because deer haven't started hitting bait piles very hard yet. Then again, as hunters know,



Rich Baker, left, a Northern Michigan University student, and Pat Christenson of Gwinn gather macroinvertebrates Sunday on the East Branch of the Escanaba River in Gwinn. The volunteers took part in a stream-monitoring project to study the health and ongoing changes in local waterways. (Journal photo by Christie Bleck)

## 'Stream team' hits the Esky

East Branch of Escanaba River studied in ongoing project

*Mining Journal news article, fall 2015*



*Volunteers performing stream-side macro ID*



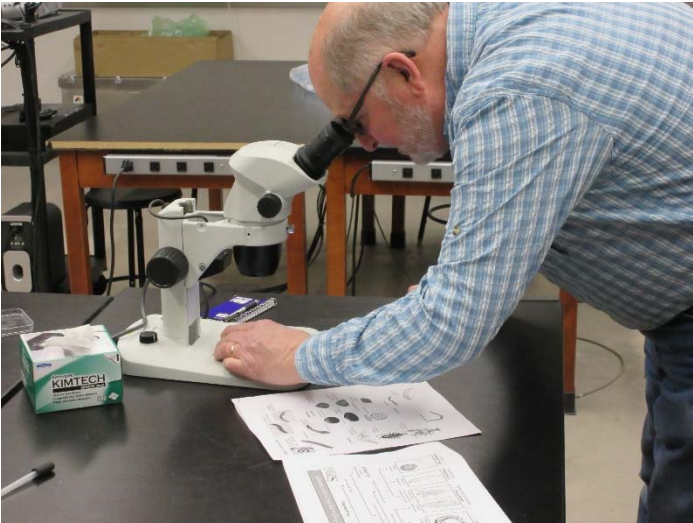
*MSHS Student in-lab ID lesson*



*Volunteer macro collection*



*NMU Outdoor Recreation in-field collection & ID lesson*



*Macro ID workshop at NMU's Biology Department*



*Stream Team conducting Stream Habitat Assessment*