



**Annual Program Report
for
September 2009 – September 2010**

Prepared by

**The Great Lakes Commission
&
The Huron River Watershed Council**

December 22, 2010

What is MiCorps?

The Michigan Department of Natural Resources and Environment (DNRE) (formerly the Department of Environmental Quality) is responsible for environmental monitoring of Michigan's surface water resources to assure that they meet Michigan's Water Quality Standards. The DNRE recognizes the potential for citizen volunteers to make a substantial contribution to the state's water quality monitoring program. Given the limitations of state resources dedicated to lake and stream monitoring, DNRE staff is increasingly relying on volunteer water quality monitoring data to support water resources management and protection programs decisions. The DNRE began a volunteer lake monitoring program in 1974 and a volunteer stream monitoring program in 1998.

Governor Jennifer M. Granholm formally recognized the need and importance for volunteer monitoring groups to assist DNRE's lakes and streams monitoring program. In September 2003, Governor Granholm issued Executive Order #2003-15 creating the Michigan Clean Water Corps (MiCorps), a statewide initiative to foster and support volunteer monitoring programs in Michigan.

MiCorps assists volunteers around the state in participating in water quality monitoring activities. Many volunteer groups are already monitoring Michigan rivers, creeks, and lakes at various levels of effort. These groups vary in their capacity and expertise, yet all have the potential to make valuable contributions to our understanding of Michigan's water quality. MiCorps has incorporated the state volunteer water monitoring programs and these other established volunteer monitoring programs into a volunteer monitoring network that encourages the use of standard quality assurance practices and monitoring procedures in order to ensure the collection of high quality data.

MiCorps supports volunteer monitoring in numerous ways, including:

- Providing funds, technical assistance, and resources to groups interested in developing stream monitoring programs.
- Leading a statewide lake volunteer monitoring program;
- Providing a forum for communication and support among volunteer monitoring groups in the state;
- Providing standard methods and training for accurate, comparable data collection; and
- Enforcing quality assurance practices both in sampling and reporting of data.

Furthermore, MiCorps staff is committed to working with volunteer groups on a range of levels, including encouraging and cultivating leadership and stewardship, volunteer training, data compilation, assistance in meeting specific challenges, communicating findings to local stakeholders, and evaluating accuracy and reliability of data and performance.

Ultimately, MiCorps strives to work with volunteers and state agencies to broaden the scope of knowledge about our water resources.

MiCorps Support

The Great Lakes Commission (GLC) was awarded the contract to assist DNRE in establishing and administering the MiCorps program. The GLC is partnered with the Huron River Watershed Council to develop, implement, and administer the program, under the direction of DNRE. The original three-year contract began in September 2004 and ended August 2007. At that time, the GLC received a two-year contract extension to continue the program through August 2009. Following the end of the initial contract and extension, a short-term extension grant was issued by DNRE to the GLC in September 2009 to extend some of the remaining unexpended funds and award a small amount of new funds to continue the program until a new contract could be issued and to close out the remaining open grants that were awarded during the initial contract period. Currently, the program is administered under a new contract with the GLC from December 2009 through September 2014 (pending fund availability from DNRE each year), and under the extension grant through August 2011.

MiCorps staff also subcontracts with the Michigan Lake and Stream Associations and Michigan State University to implement the Cooperative Lakes Monitoring Program (CLMP) component of the program.

In this report, the following people are generically referred to as “MiCorps staff”:

Great Lakes Commission (GLC)

- Laura Kaminski, MiCorps project administrator
- Anne Sturm, MiCorps support staff
- Laura Andrews, MiCorps support staff
- Hao Zhuang, MiCorps support staff

Huron River Watershed Council (HRWC):

- Paul Steen, MiCorps project manager
- Ric Lawson, MiCorps support staff

Department of Natural Resources and Environment (DNRE):

- Ralph Bednarz, MiCorps Administrator, CLMP Administrator, Water Bureau
- Kay Edly, MiCorps staff, Water Bureau

Other CLMP staff:

- Jean Roth, Michigan Lake and Stream Associations (MLSA)
- Scott Brown, Michigan Lake and Stream Associations (MLSA)
- Jo Latimore, Michigan State University (MSU)



MiCorps Accomplishments

MiCorps contains two major programs:

- The Volunteer Stream Monitoring Program (VSMP) and
- The Cooperative Lakes Monitoring Program (CLMP).

These programs are supported by a number of essential components:

- A steering committee;
- A website and data exchange platform;
- An annual conference;
- Program marketing and promotion; and
- An annual newsletter.

MiCorps staff also administers the Volunteer River, Stream, and Creek Cleanup Program (VRSCCP) as a separate program under the MiCorps contract.

In the following pages, this report gives a description of each of these parts of MiCorps and the accomplishments made during the period September 2009 – September 2010.



Volunteers Steve Jones, Ken Burman, Al Rinke, and Carole Plunkey pick insects after a PRVEL stream monitoring collection event on the South Branch Pine River.



CLMP volunteer Bruce Lichliter, from Big Glen Lake, prepares to take a water sample that will be filtered and sent to the DNRE water quality lab for chlorophyll a analysis.



Tom Bergman, a volunteer with the Gogebic Conservation District, and Paul Steen, Huron River Watershed Council, analyze a sample taken from the Shiawassee River during the 2010 MiCorps volunteer stream monitoring training day.

Volunteer Stream Monitoring Program (VSMP)

- Each year, approximately \$50,000 is made available to volunteer groups through a competitive grant application process for the purpose of monitoring habitat and aquatic macroinvertebrates in wadable streams and rivers. MiCorps staff reviews applications in consultation with DNRE staff and administers these grants.
- MiCorps staff provides training and support to these grant recipients to ensure that they are collecting high-quality data and running successful programs.
- Via the MiCorps website, the groups are given access to a wide array of resources on volunteer stream monitoring, including stream monitoring datasheets, guidance for developing a Quality Assurance Project Plan (QAPP), equipment lists, collection tips, monitoring procedures, relevant DNRE documents and publications, tips for publicity and volunteer retention, and other tools.



At the annual stream training event, MiCorps grant recipients learn the proper procedures for collecting macroinvertebrates and assessing stream habitat.



MiCorps staff member Ric Lawson teaches future stream leaders about quality assurance plans at the annual stream training event.

- To ensure data quality, MiCorps requires all grant recipients to develop an approved QAPP, attend a full day training event at which MiCorps monitoring procedures are taught, and attend a one-on-one training event with MiCorps staff. In addition, further training opportunities are provided at the annual conference.
- MiCorps staff works closely with each group, encouraging leadership, offering technical advice, and providing assistance where possible.
- Beginning with the 2007 grant cycle, MiCorps has set aside a portion of the annual VSMP funding as “seed money” for newly forming volunteer monitoring groups each year. Under this initiative, applicants may apply for a one year “start-up” grant to receive a small amount of funding to allow them to begin the process of starting a monitoring program. Start-up groups are given full access to MiCorps training and MiCorps staff expertise and are expected to submit an application for a full grant the next year.
- Since 2005, a total of 23 full grants and nine start-up grants have been awarded under the VSMP, totaling nearly \$285,000 in grant funding to award recipients. A total of seven groups received grants under the VSMP during the 2010 grant cycle, including three full grants and four start-up grants (Appendix A).
- From a programmatic perspective, over 470 stream sites, each of which is 300 feet long, are being sampled by groups that have received VSMP funding since the program’s inception.
- All of the data obtained through the VSMP is available on MiCorps’ web based Data Exchange Platform (www.micorps.net).

Cooperative Lakes Monitoring Program (CLMP)

- The CLMP, formerly known as the Self-Help program, started in 1974 and is one of the nation's longest running lake monitoring programs. It was brought under the MiCorps umbrella upon creation of MiCorps in 2004.
- Administering and supporting the CLMP requires a combination of different skills. MLSA, under contract with GLC, is the public front for the CLMP and handles volunteer registration and equipment distribution. MiCorps staff from the DNRE, HRWC, and Michigan State University provide technical support, quality control, and training for the volunteers. The GLC maintains the MiCorps website, online registration, and the Data Exchange, where the data are stored.
- The CLMP enables volunteers to measure several parameters that indicate the trophic (a.k.a. nutrient or productivity) status of the lake: secchi disk transparency, total phosphorus, chlorophyll *a*, and dissolved oxygen and temperature.
- Total phosphorus and chlorophyll samples are sent to the DNRE water quality laboratory for analysis after volunteers collect them.
- The CLMP also offers training and field support in aquatic plant surveying and invasive aquatic plant monitoring and identification.



Left: DNRE's Ralph Bednarz takes side-by-side measurements with a volunteer. This is used to determine the accuracy of the volunteers' monitoring procedures.

Right: CLMP volunteers Andy DuPont and Bruce Lichliter sample for Chlorophyll-a on Big Fisher Lake.



- The CLMP strictly follows a QAPP (quality assurance project plan) that guides the program in maintaining consistent and accurate data collection.
- MiCorps staff holds a training event in CLMP monitoring procedures on an annual basis, prior to the beginning of the field season. The training is mandatory for all new participants in order to maintain the program's data quality standards.
- The Volunteer Mentor Program, an initiative started in 2009, matches up experienced volunteers with new volunteers who need additional assistance.
- DNRE Water Bureau staff randomly sample approximately 10% of the enrolled lakes each year to compare the trophic measurements made by limnology experts against volunteer measurements. Results have shown that there is a very high level of agreement between volunteer and expert measurements. Volunteer samples show a 90% agreement with DNRE staff samples (based on R^2 correlation values) for total phosphorus and for chlorophyll *a* samples. The difference is more reflective of a slight difference in methods than in volunteer sampling error.
- In 2010, 224 lakes were enrolled in the CLMP (Appendix B). This number has held steady over the past several years of monitoring. A short summary of 2010 results are located in Appendix C.
- All of the data are available in the CLMP annual reports found on the project webpage (www.micorps.net/lakereports) and are located in the web-based Data Exchange Platform. The 2010 annual report for the CLMP will be available in early 2011.

Volunteer River, Stream, and Creek Cleanup Program (VRSCCP)

- Each year, approximately \$25,000 is made available to Volunteer River, Stream, and Creek Cleanup Program (VRSCCP) grant recipients through a competitive grant application process. The purpose of these grants is removal of trash and man-made debris from rivers and streams and along their banks. Local units of government are eligible to receive funding and may work with nonprofit organizations or other volunteer groups to implement volunteer cleanup efforts on waterbodies around the state.
- The VRSCCP first began in 1998, and though it is not a direct part of the MiCorps initiative, the administration of this program was brought under the MiCorps support contract upon its creation in 2004.
- Funding for this program is provided by citizen donations collected from the sale of Michigan's Water Quality Protection License Plates under Public Act 74 of 2000 for water quality protection in Michigan Great Lakes, inland lakes, rivers, and streams.



Volunteers at the Van Buren Conservation District's "River Rescue" Community Creek Cleanup remove an abandoned bicycle from the South Branch Black River. Project coordinators often had contests for their volunteers for the most unusual "find" or largest quantity of debris collected.



Grant recipients are encouraged to engage youth and community groups, such as the Kingsley 4-H Outdoor Adventure Challenge Club (shown above), for participation in clean-up events. Volunteer recruitment and participation is a critical part of the program.

- GLC staff assists the DNRE in publicizing the grant program, hosting and maintaining the VRSCCP website (www.glc.org/streamclean), maintaining an online grant application system, and providing additional resources and assistance for project coordinators. Each year, staff also review applications for the grant program - in consultation with DNRE staff - and administer these grants to the award recipients.
- Since 2005, 79 grants totaling greater than \$125,000 have been awarded to recipients around the state under the VRSCCP. During the 2010 grant cycle, 12 clean-up projects were awarded grants totaling \$21,335.61 in project funds (Appendix D).

MiCorps Steering Committee

- The steering committee is responsible for advising MiCorps staff and DNRE members on the development of the MiCorps program and suggesting improvements to make the program more effective and sustainable.
- The current steering committee is composed of the following members:
 - Elwin Coll, Chair, private citizen
 - Kevin Cronk, Tip of the Mitt Watershed Council
 - Lori Phalen, Michigan Association of Conservation Districts (since 2006)
 - Joan Martin, Huron River Watershed Council
 - Robert Burns, Friends of the Detroit River
 - 2 vacant positions
- During the 2009-2010 program year, the Steering Committee met once in person to discuss the program, provide input on future program directions, and present new ideas to the staff. Additional input was also provided by Steering Committee members on MiCorps activities and promotional materials throughout the year.



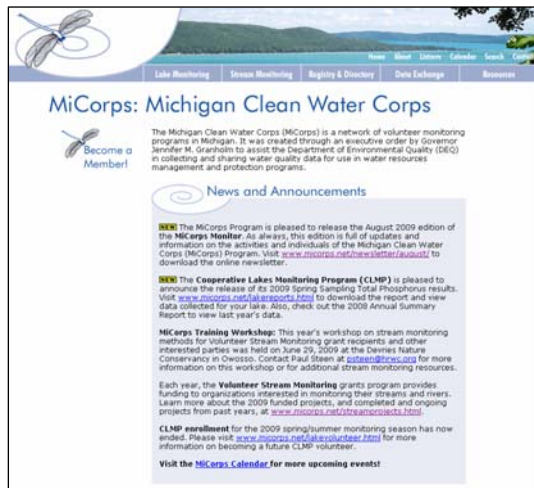
The 2009 MiCorps Volunteer Stream Monitoring Program grantees receive their Certificates of Recognition at the 2009 Annual MiCorps Conference. Grantees (from left): Muskegon County Conservation District, Michigan Council of Trout Unlimited, Superior Watershed Partnership, Clinton River Watershed Council, Jackson County Conservation District, and Branch County Conservation District.

MiCorps Program Marketing and Promotion

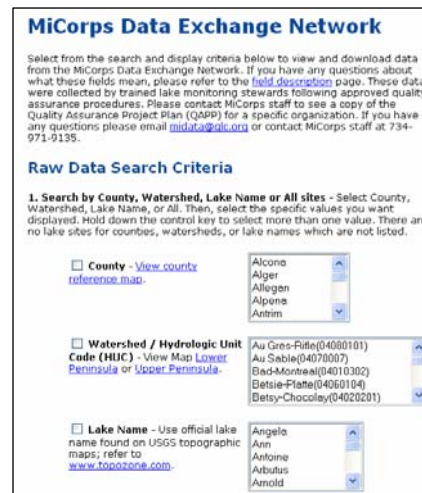
- In order for the MiCorps program to succeed, MiCorps staff needed to continually spread the word about what MiCorps does. Program promotion is an ongoing and essential component of the MiCorps program.
- MiCorps staff have developed a MiCorps logo (see cover), and incorporated it into all program materials. References to the DEQ were updated to reflect the new DNRE name and logo.
- The MiCorps webpage has a wealth of information explaining the program to newcomers, including a glossy program brochure which is available from the website and distributed at events.
- MiCorps staff regularly composes press releases and announcements of MiCorps events, products, and accomplishments.
- Certificates of recognition are presented to lake and stream volunteers each year to let them know that their contributions were appreciated. This recognition is important for volunteer retention as well as for recruiting new volunteers.
- MiCorps staff gives presentations, lead discussions, and talk individually with a variety of groups and people in order to spread the word about MiCorps. Past events have included those hosted by the Michigan Association of Conservation Districts, the Stewardship Network, lake associations, Michigan Chapter of the North American Lake Management Society, DNRE staff (formerly DEQ and DNR), and other environmentally focused government and nonprofit groups.
- In 2010, a CLMP Volunteer Mentor worked with the local news media to publicize local monitoring events and the CLMP.
- MiCorps staff have also recently developed fact sheets that describe the different parameters sampled in the CLMP.

MiCorps Website and Data Exchange Platform

- The MiCorps website (www.micorps.net) is an essential tool used to support the work done through the VSMP and CLMP programs, and to provide resources to volunteer monitoring groups around the state.
- The website plays an important role in many ways as it:
 - Informs people about the MiCorps program and how they can become involved.
 - Serves as a location to place announcements and upcoming events.
 - Serves as a repository for a wide variety of educational resources, documents, and forms used by MiCorps staff and volunteer coordinators.
 - Allows volunteers to subscribe to one of two MiCorps listservs. These email lists allow MiCorps staff to send announcements quickly to a large group and facilitate broader email discussions on a variety of volunteer monitoring topics.
 - Holds a directory of MiCorps member organizations and volunteer monitoring groups statewide.
 - Serves as the data entry and data search interface for the MiCorps Data Exchange: the database used to store all volunteer collected data.
 - Used for online registration in the CLMP program and online MiCorps Conference registration.
 - Enables grant applicants to submit applications electronically via the VSMP and VRSCCP online application systems.



This is a screen shot of the home page at www.micorps.net



The MiCorps Data Exchanges offers a variety of ways to search for volunteer collected lake and stream data.

- The MiCorps web-based Data Exchange Platform (www.micorps.net/data/) provides online access to volunteer monitoring data through a searchable database. The Data Exchange houses monitoring data collected by MiCorps member organizations, which meet rigorous quality assurance standards and operating procedures criteria.
- The MiCorps Data Exchange holds all of the data collected by the CLMP and Self-Help program, from 1974 to the present.
- All stream groups that receive a grant through the VSMP are required to enter their habitat and macroinvertebrate data into the Data Exchange.
- In 2010, an optional user survey was added to the Data Exchange so that the program could better understand how MiCorps data was being used. These results are provided in Appendix E.
- The project team maintains a separate website for the VRSCCP (www.glc.org/streamclean).

MiCorps Annual Volunteer Monitoring Conference

- Every October from 2005 through 2010, MiCorps has held two-day conferences at the Ralph A. MacMullan Conference Center on Higgins Lake.
- The main purpose behind the annual conference is to bring volunteers and professionals together to share ideas, network, and learn about new innovations in monitoring. The conference is also a great way to attract new people and explain what MiCorps is and what it is doing.
- MiCorps staff holds free training on advanced monitoring topics on the afternoon of the first day of the conference. Previous sessions have included workshops on aquatic macroinvertebrate collection and identification workshops and workshops on stream flow measurements. The purpose of this training is to give VSMP member groups more advanced exposure to methods than what they received at the introductory training day earlier in the year.



On the first day of the conference, MiCorps staff offers additional training in MiCorps procedures- often this training revolves around macroinvertebrate collection and identification.



The second day of the conference is filled with speakers and discussion on various Michigan-centric water monitoring topics and issues.

- The second day of the conference is comprised of presentations and discussions led by MiCorps staff, an invited keynote speaker, leaders of volunteer monitor groups, and active volunteer monitors.
- Keynote speakers at the past conferences have been:
 - 2005: Gary Kohlhepp and Ralph Bednarz, Water Bureau, Michigan DEQ
 - 2006: Dr. Michael Wiley, Aquatic Ecology Professor, University of Michigan
 - 2007: Pete Jackson, Volunteer Monitoring Coordinator, U.S. EPA Midwest Region
 - 2008: Linda Green, USDA-Cooperative State Research, Education, and Extension Service, Volunteer Monitoring Network
 - 2009: Dr. Bryan Burroughs, Michigan Trout Unlimited
 - 2010: Dr. Alan Steinman, Annis Water Resources Institute
- Participants have noted in conference evaluations that they enjoy hearing from other volunteers. Starting at the 2008 conference and continuing since, most of the breakout sessions are led by MiCorps members rather than MiCorps staff. These breakout sessions involve volunteers and water professionals sharing monitoring results and data, as well as lessons they have learned.
- In 2010, three CLMP volunteer mentors gave presentations at the conference.

MiCorps Annual Newsletter

- MiCorps staff writes and distributes an annual newsletter: *The MiCorps Monitor*. Prior to 2009, this newsletter was published at least twice per year.
- The purpose of the newsletter is to highlight MiCorps successes, member programs, exceptional volunteers, and important issues in the field of water monitoring.
- The first issue, in paper format, was released in March 2005. Starting in April 2009, the paper newsletter was converted to an electronic web-based newsletter format that was distributed via email and housed on the MiCorps website. The annual edition for the 2009-2010 program year was released in December 2010.



The screenshot shows the Michigan Clean Water Corps website. The header features the organization's logo (a dragonfly) and the text "Michigan Clean Water Corps". Navigation links include Home, About, Listserv, Calendar, Search, and Contact. A secondary navigation bar lists Lake Monitoring, Stream Monitoring, Registry & Directory, Data Exchange, and Resources.

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Contact the Editor:

For information about the MiCorps program or the *MiCorps Monitor* newsletter, or to submit items for future newsletter issues, please contact Laura Kaminski, Great Lakes Commission, 734-971-9135, laurak@qlc.org.

Upcoming Events:

The MiCorps Monitor: Fall 2010

The newsletter of the Michigan Clean Water Corps, Issue 8



Welcome!

Welcome to the Fall 2010 edition of the *MiCorps Monitor*! As always, this edition is full of updates and information on the activities and individuals of the Michigan Department of Natural Resources and Environment's Michigan Clean Water Corps (MiCorps).

Please select an article from the listing below or use the quick links to the left. If you're experiencing trouble with the online format or have questions about the *MiCorps Monitor*, email the editor, Laura Kaminski, at laurak@qlc.org.

Article 1:
The Critical Role of Volunteer Data Collection

Article 2:
Volunteer Stream Monitoring Grants Awarded for 2010

Article 3:
Focus on the CLMP

Article 4:
Stream Monitoring with MiCorps Grantee, Branch Conservation District

Article 5:
Volunteer Monitoring Program Spotlights: University of Rhode Island Watershed Watch



Volunteers receive instructions on stream flow monitoring on the Au Sable River from guest speaker, Rob Myllyoja, at the training session held during the 2009 MiCorps Annual Conference.

The MiCorps monitor is an important part of program promotion. Specifically recognizing the successes of our member programs and highlighting volunteers' commitments is a useful way of earning program loyalty and attracting new volunteers.

The MiCorps Horizon - Future Directions

In addition to maintaining the current activities of the program, the current contract, which runs from September 2009 through August 2014, calls for the following enhancements to be made in the MiCorps program.

- **VSMP:** Addition of another monitoring parameter, with corresponding educational documents, training, and data exchange support. A list of possible parameters was developed in 2010 and shared with DNRE staff and MiCorps Steering Committee members. Possible parameters include stream flow, invasive species monitoring, road-crossing evaluations, stream temperature, and turbidity. While only one parameter can be funded through grants, it may be possible to develop standard operating procedures for other parameters so that groups throughout the State can generate comparable data on their own dime.
- **CLMP:** Similarly, another parameter will be added to the CLMP. These parameters are being discussed on a regular basis within the CLMP steering group. Possible parameters include toxic algae, e. coli, water temperature, water color, and bathymetry.
- **Data Quality:** MiCorps staff are working to develop a tiered data quality classification and data management and tracking system for all levels of volunteer water quality monitoring data collected in Michigan.
- **Program Promotion:** A new brochure is being developed for the VSMP and parameter fact sheets are being developed for the CLMP. A PowerPoint presentation that assists volunteers and water professionals in using MiCorps data will be created in 2011.



A volunteer team measures and records data for flow measurement on a small stream.



Grand Valley State University student Chantel Caldwell with Assistant Professor Eric Snyder selecting locations for their ecosystem monitoring project.

Summary of Program Funding

From 2004 to 2010, DNRE has awarded funding to the GLC in the amount of \$1,394,683 to develop and implement MiCorps during its first six years. By the end of September 2010, over \$322,000 of these funds had been disbursed to local grant recipients in support of volunteer programs and cleanup activities around the State. A significant amount of additional funding was also spent to train these grant recipients and other volunteers in sampling techniques to implement quality data collection programs for both lakes and streams. As current open projects are completed over the next two years, it is expected that an additional \$90,000 in grant funds from this contract will be paid out to grantees to complete their approved project work.

All grants awarded under MiCorps require a local match of at least 25% of the total project cost, yet grantees have often exceeded this requirement to fully achieve their project objectives. As a result, the grant funds provided by DNRE over the last six years have leveraged an additional \$416,998 in resources in support of volunteer water quality activities in Michigan. Enrollment fees - also considered local match - in the amount of \$146,507 have also been contributed by CLMP participants during the last six years. With these resources allocated toward the monitoring and improvement of Michigan's rivers and streams, MiCorps has made significant strides toward the preservation and protection of Michigan's water resources through volunteer action.

The following is an estimated summary of program costs supported by DNRE funding from September 2009 through September 2010 for each major program element, as outlined in this report. Not all program funds obligated to the GLC and its contractors for this contract period have been utilized to date, nor have all grant funds awarded to VSM and VRSCCP grant recipients during this period been disbursed.

MiCorps Support Contract Expenditures for the Period September 2009 – September 2010

<u>Program Task</u>	<u>Estimated Cost</u>
Volunteer Stream Monitoring Program (VSMP):	\$63,193
Cooperative Lakes Monitoring Program (CLMP):	\$39,449
Volunteer River, Stream, and Creek Cleanup Program (VRSCCP):	\$16,722
MiCorps Steering Committee:	\$3,149
MiCorps Program Marketing and Promotion:	\$7,967
Website and Data Exchange Platform:	\$20,519
MiCorps Annual Volunteer Monitoring Conference:	\$19,288
MiCorps Annual Newsletter:	\$4,586
MiCorps Future Directions:	\$11,856
Total DNRE Program Cost:	\$186,729
Estimated Local Match Committed:	\$79,980 *

* Excludes match contributed by the GLC, HRWC, and MLSA.

Appendix A

Projects Selected for Funding under the 2010 MiCorps VSMP

2010 Grants Awarded

Grant #: VSM2010-1

Grantee: Michigan Trout Unlimited

Title: Monitoring on the Kalamazoo, Rogue, AuSable, and Pilgrim River Watersheds

Watershed(s): Kalamazoo, Rogue, AuSable, and Pilgrim River Watersheds

Funding Amount: \$17,562

Project Duration: 2010-2012 (open)

Final Report: Not yet submitted by grantee

The overall goal of this project is to monitor the health of coldwater streams in Michigan by establishing baseline data and then monitoring the streams for changes. Monitoring is to involve 14 sites in the Kalamazoo, Rogue, AuSable, and Pilgrim River watersheds and will include habitat and macroinvertebrate assessments. Both negative and positive impacts will be portrayed in the data, reflecting effects of agriculture, CAFOs, development, stream improvement projects, and the implementation of best management practices. In addition, MITU has developed a coldwater database which will include MiCorps data and data from other MITU monitoring efforts.

Grant #: VSM2010-2

Grantee: Branch County Conservation District

Title: Coldwater River Stream Monitoring Program

Watershed(s): Coldwater River

Funding Amount: \$15,403.81

Project Duration: 2010-2012 (open)

Final Report: Not yet submitted by grantee

Ten sites are to be monitored within the Hodunk-Messenger Chain of Lakes watershed, a subwatershed of the Coldwater River, to document the extent and locations of possible threats and impairments in the watershed, establish a baseline for quantifying changes, and foster a stewardship ethic among watershed residents. The health of the Coldwater River watershed is a vital concern to all watershed stakeholders and partner organizations. Results from the proposed study will serve to inform the community and leverage further efforts to protect the watershed.

Grant #: VSM2010-3

Grantee: Flint River Watershed Coalition

Title: Flint River Watershed Coalition 2010 Retraining, Recruitment, Retention, and Assessment Program

Watershed(s): Flint River

Funding Amount: \$10,111.55

Project Duration: 2010-2012 (open)

Final Report: Not yet submitted by grantee

Funding is being provided to strengthen the Coalition's existing program and to coordinate monitoring at more than 30 sites within the Flint River watershed to track the long-term health of the system. The ultimate goal is to expand and strengthen the monitoring program to the point that comprehensive stream habitat data for the Flint River Watershed may be adequately collected.

Appendix A, continued.

2010 Start-Up Grants:

Grant #: VSM2010-4

Grantee: Cannon Township

Title: Bear Creek Stream Study Start-Up

Watershed(s): Bear Creek (Grand River)

Funding Amount: \$1,054.25

Project Duration: 2010-2011 (open)

Final Report: Not yet submitted by grantee

The Bear Creek Adopt-a-Stream group, run by Cannon Township, is using this funding to develop macroinvertebrate and habitat monitoring plans that will bolster their program that currently monitors some simple chemical and physical parameters. Main goals are to collect stream data and use it in useful ways, such as making better planning decisions, prioritize stream projects, and update the Bear Creek Watershed Management Plan.

Grant #: VSM2010-5

Grantee: Midland County Adopt-a-Stream

Title: Midland Conservation District

Watershed(s): Sturgeon Creek

Funding Amount: \$866.37

Project Duration: 2010-2011 (open)

Final Report: Not yet submitted by grantee

This funding is meant to foster Midland Conservation District as the leader of change for habitat restoration and improvement in Midland County. The funding will assist the group make monitoring goals and start to build a program. The long-term goals of the group are to establish baseline data that can be used by environmental governing bodies, and introducing the general public to watershed quality. Individuals will learn about their local watershed quality, how it compares with other watersheds, and learn about how development impacts watershed quality. The program intends to foster environmental stewardship by teaching skills and cultivating responsibility of individuals.

Grant #: VSM2010-6

Grantee: Gogebic Conservation District

Title: Presque Isle Watershed Volunteer Stream Monitoring Start-Up Program

Watershed(s): Presque Isle (Black River)

Funding Amount: \$2,000

Project Duration: 2010-2011 (open)

Final Report: Not yet submitted by grantee

The goal of this project is to develop macroinvertebrate and habitat monitoring plans for the Black River. The groups will assemble a "steering committee" of interested individuals, organizations, and agencies (federal/state/local), promote public awareness and understanding, engage and utilize community volunteers and identify local stewards; and define strategies that identify and assess current and emerging water quality and aquatic habitat problems.

Appendix A, continued.

Grant #: VSM2010-7

Grantee: Muskegon River Watershed Assembly

Title: Hersey River Watershed Monitoring Program

Watershed(s): Hersey River (Muskegon)

Funding Amount: \$3,000

Project Duration: 2010-2011 (open)

Final Report: Not yet submitted by grantee

The goal of this project is to develop macroinvertebrate and habitat monitoring plans for the Hersey River. The Hersey River Watershed Team plans to develop a sustainable volunteer watershed monitoring program that involves the local adult community with an objective of understanding the Hersey River and its surrounding watershed and promoting stewardship of this important natural resource.

VSMP Projects Completed or Ongoing during the 2009-2010 Program Year

2009 Grants

Grant #: VSM2009-1

Grantee: Muskegon County Conservation District

Title: Duck Creek Stream Monitoring Program

Watershed(s): Duck Creek (Michigan)

Funding Amount: \$6,231

Project Duration: 2009-2010 (project completed)

Final Report: Available on MiCorps website

The 11,500-acre Duck Creek watershed lies entirely within Muskegon County and is the only watershed in the county that is designated a high-quality watershed with no TMDL listing. However, preliminary monitoring has shown an increase in water temperature and sedimentation; increases in nutrients, nuisance algal blooms, and occurrences of exotic species; and general degradation of fish and wildlife habitat. The Muskegon Conservation District and Duck Creek Watershed Assembly are striving to halt this decline and avoid an eventual TMDL listing. By identifying the sources and proactively addressing the causes of these preliminary findings, the project team hopes to preempt any major water quality issues and the associated costs (and inherent inadequacies) of mitigation.

Grant #: VSM2009-3

Grantee: Superior Watershed Partnership

Title: Millecoquins River Watershed Volunteer Stream Monitoring Program

Watershed(s): Millecoquins River (Michigan)

Funding Amount: \$9,288

Project Duration: 2009-2011 (open)

Final Report: Not yet submitted by grantee

The Millecoquins River watershed has experienced impacts from historic and recent land uses such as logging, agriculture (cattle), and increasing development and recreational pressures. Recent evaluations of tributaries of the Millecoquins River watershed by the Michigan DEQ indicate increasing water temperatures and changes in the fish community to more of a warm water fishery rather than a coldwater fishery as they are designated. In addition, changes have also been observed by local landowners. Goals of the project include fostering landowner and citizen awareness, stewardship and surveillance of the watershed; producing quality-assured data that can be used by

Appendix A, continued.

DEQ biologists as a screening tool; making results available to interested parties; and utilizing these data to document water quality changes over time and existing and potential sources of impact.

Grant #: VSM2009-4

Grantee: Clinton River Watershed Council

Title: Adopt-a-Stream Improvement and Expansion Project

Watershed(s): Clinton River (Michigan)

Funding Amount: \$1,995

Project Duration: 2009-2010 (project completed)

Final Report: Available on website

Data collected from three proposed new sites will add to the Clinton River Watershed Council's (CRWC) current Adopt-a-Stream program efforts to develop and maintain a long-term assessment of stream health throughout the watershed. The North Branch historically has not received much attention from CRWC's Adopt-a-Stream program due to limited funding and lack of volunteers. With additional funding, hopes of these site establishments will further the measurable data and allow for a more detailed assessment of the overall condition of the watershed, including identification of macroinvertebrates to the Family level.

Grant #: VSM2009-6

Grantee: Jackson County Conservation District

Title: Upper Grand River Watershed Adopt-a-Stream Program

Watershed(s): Upper Grand River (Michigan)

Funding Amount: \$20,979

Project Duration: 2009-2011 (open)

Final Report: Not yet submitted by grantee

The Upper Grand River Watershed Adopt-A-Stream Program, initiated in 2007, began as a partnership among the Jackson County Conservation District, Dahlem Environmental Education Center, and Upper Grand River Watershed Alliance. The Adopt-A-Stream Program helps achieve the public education and involvement goals of the Jackson Phase II communities and the Upper Grand River Watershed Management Plan by using trained adult volunteers to collect and identify benthic macroinvertebrates, conduct stream habitat assessments, and take other water quality measurements following the methods outlined in the MDEQ-approved Quality Assurance Project Plan. With funding under this grant, the partner organizations are working to further develop and strengthen the Upper Grand River Watershed Adopt-A-Stream program into a sustainable and watershed-wide monitoring program.

2009 Start-Up Grants:

Grant #: VSM2009-7

Grantee: Michigan Council of Trout Unlimited / Kalamazoo Valley Chapter

Title: MCTU / KVCTU Stream Monitoring Project

Watershed(s): Kalamazoo River (Michigan)

Funding Amount: \$1,940

Project Duration: 2009-2010 (project completed)

Final Report: Available upon request

The Michigan Council and Kalamazoo Valley Chapter of Trout Unlimited are teaming up to monitor macroinvertebrates and water quality in Spring Brook and Dickinson Creek within the Kalamazoo River watershed. During 2009, the project team will be developing a program that they plan to

Appendix A, continued.

implement in 2010. The program developed under this grant will also serve as a template for other chapters of Trout Unlimited in Michigan. The long term goal of this program is to increase monitoring of the state's coldwater streams by Trout Unlimited. There are several very active and motivated volunteers in the Kalamazoo Valley Chapter who will be assisting the Michigan Council of Trout Unlimited in designing and implementing this monitoring program.

Grant #: VSM2009-8

Grantee: Branch County Conservation District

Title: Coldwater River Watershed Monitoring Project

Watershed(s): Coldwater River (Michigan)

Funding Amount: \$2,000

Project Duration: 2009-2010 (project completed)

Final Report: Available upon request

The grant funding will be used to develop a Coldwater River Watershed volunteer-based monitoring plan that can potentially receive full funding in the near future. This will include establishing a Project Oversight Committee, identifying key parameters and locations to be monitored, cataloging existing and needed equipment for long-term monitoring, and identifying potential partners for long-term support of the program. In addition, the project team plans to develop a public outreach strategy for local media releases and announcements related to their ongoing work.

2008 Grants

Grant #: VSM2008-01

Grantee: Friends of the St. Clair River Watershed

Title: Friends of the St. Clair River Watershed Stream Leaders

Watershed(s): St. Clair River watershed

Funding Amount: \$13,297

Project Duration: 2008-2011 (open)

Final Report: Not yet submitted by grantee

The Friends of the St. Clair River Watershed have proposed to assess habitat and conduct macroinvertebrate monitoring in the St. Clair River Watershed.

Grant #: VSM2008-02

Grantee: The Nature Conservancy

Title: Shiawassee River Watershed Benthic Macroinvertebrate Monitoring Program

Watershed(s): Shiawassee River watershed

Funding Amount: \$13,297

Project Duration: 2008-2010 (project completed)

Final Report: Available on website

The Nature Conservancy is working in partnership with the Livingston County Drain Commissioner's Office to conduct assess habitat and conduct macroinvertebrate monitoring in the Shiawassee River watershed in Shiawassee and Livingston Counties.

Appendix A, continued.

Grant #: VSM2008-03

Grantee: Pine River/Van Etten Lake (PRVEL) Coalition

Title: Pine River/Van Etten Lake Monitoring

Watershed(s): Pine River/Van Etten Lake watershed

Funding Amount: \$7,420

Project Duration: 2008-2010 (project completed)

Final Report: Available on website

The overall goal of this project is to establish baseline benthic macro invertebrate data and to monitor the health of our watershed as we go forward in the future. It is desired to ensure that the river and associated feeder streams do not significantly degrade further in their ability to sustain a cold water fishery. This project will also help to show any changes in the stream condition, as told through the macro invertebrate populations.

Grant #: VSM2008-04

Grantee: Marguerite Gahagan Nature Preserve

Title: Upper AuSable River Watershed Water Quality Monitoring Project

Watershed(s): Upper AuSable River Watershed

Funding Amount: \$13,297

Project Duration: 2008-2011 (open)

Final Report: Not yet submitted by grantee

The primary goal of this project is to produce quality-assured data on the water quality of the watershed to establish baseline data for the AuSable River. Specifically, site monitoring will include benthic macroinvertebrate specimen collection and identification to the family level, habitat assessment, and the monitoring of dissolved oxygen and pH levels. Success of this project will be measured by the production of verifiable data that is of use to the Michigan Department of Environmental Quality and others who make stewardship decisions within the AuSable River watershed.

Appendix B.

The following 224 lakes were registered for the 2010 season of the CLMP.

Lake	County
Badger	Alcona
Bear	Alcona
Maynard	Alcona
Vaughn	Alcona
Hubbard	Alcona
Cedar	Alcona/Iosco
Deer	Alger
Eagle	Allegan
Goshorn	Allegan
Hutchins	Allegan
Osterhout	Allegan
Wetmore	Allegan
Beaver	Alpena
Bellaire	Antrim
Calm	Antrim
Torch (North)	Antrim
Torch (South)	Antrim
Barlow	Barry
Cobb	Barry
Duncan	Barry
Fair	Barry
Payne	Barry
Upper Crooked	Barry
Little Long	Barry/Kalamazoo
Ann	Benzie
Big Platte	Benzie
Crystal	Benzie
Sanford	Benzie
Little Paw Paw	Berrien
Coldwater	Branch
Randall	Branch
Duck	Calhoun
Lower Brace	Calhoun
Upper Brace	Calhoun
Birch	Cass
Birch (Temple)	Cass
Christiana	Cass
Diamond	Cass
Eagle	Cass
Magician	Cass
Puterbaugh	Cass
Shavehead	Cass
Twin (North-Big)	Cass

Lake	County
Twin (South-Little)	Cass
Wildwood	Cheboygan
Arnold	Clare
George	Clare
Lily	Clare
Shingle	Clare
Windover	Clare
Round	Clinton
Margrethe	Crawford
Antoine	Dickinson
Hamilton	Dickinson
Byram	Genesee
Fenton	Genesee
Shinangaug	Genesee
Silver	Genesee
Marl	Genesee/Liv.
Beatons	Geogebic
Hunter	Gladwin
Lancelot	Gladwin
Lancer	Gladwin
Dinner	Gogebic
Long	Gogebic
Moon	Gogebic
Arbutus	Grand Traverse
Island	Grand Traverse
Spider	Grand Traverse
Diane	Hillsdale
Lansing	Ingham
Chain	Iosco
Long	Iosco
Loon Lake	Iosco
Van Etten	Iosco
Mary	Iron
Perch	Iron
Isabella	Isabella
Big Portage	Jackson
Brown	Jackson
Clark	Jackson
Clear	Jackson
Farwell	Jackson
Mirror	Jackson
Mud	Jackson
Pleasant	Jackson

Lake	County
Sweezey	Jackson
Vineyard	Jackson
Wamplers	Jackson/Lenawee
Barton	Kalamazoo
Crooked	Kalamazoo
Gourdneck	Kalamazoo
Gull	Kalamazoo
Indian	Kalamazoo
Sherman	Kalamazoo
Woods	Kalamazoo
Bass	Kalkaska
Bear	Kalkaska
Big Twin	Kalkaska
Blue (Big)	Kalkaska
Crooked	Kalkaska
Cub	Kalkaska
Eagle	Kalkaska
Indian	Kalkaska
Little Twin	Kalkaska
North Blue	Kalkaska
Papoose	Kalkaska
Pickerel	Kalkaska
Squaw	Kalkaska
Starvation	Kalkaska
Big Pine Island	Kent
Bostwick	Kent
Emerald	Kent
Freska	Kent
High	Kent
Maston	Kent
Murray	Kent
Muskellunge	Kent
Reeds	Kent
Thornapple Riv (Cas.Imp)	Kent
Gratiot	Keweenaw
Harper	Lake
Wolf	Lake
Nepessing	Lapeer
Brooks	Leelanau
Fisher (Big)	Leelanau
Glen (Big)	Leelanau
Little Glen	Leelanau
Devils	Lenawee

Appendix B, continued.

Lake	County
Evans	Lenawee
Round	Lenawee
Sand	Lenawee
Portage	Liv/Wash
Baseline	Livingston/Wash
Chemung	Livingston
Earl	Livingston
Gallagher	Livingston
Hamburg	Livingston
Ore	Livingston
Round	Livingston
Silver (Green Oak)	Livingston
Strawberry	Livingston
Triangle	Livingston
Brevoort	Mackinaw
Bear	Manistee
Independence	Marquette
Blue (Chancellor)	Mason
Hamlin (Lower)	Mason
Hamlin (Upper)	Mason
North Oxbow	Mason
Blue	Mecosta
Canadian (Main)	Mecosta
Canadian (West)	Mecosta
Horsehead	Mecosta
Mecosta	Mecosta
Pretty	Mecosta
Round	Mecosta
School Section	Mecosta
Sanford	Midland
Balwin	Montcalm
Clifford	Montcalm
Crystal	Montcalm
Derby	Montcalm
Muskellunge	Montcalm
Twin (East)	Montmorency
Twin (West)	Montmorency
Bill's (Reinhardt)	Newaygo
Bill's (Waits)	Newaygo
Emerald	Newaygo
Fremont	Newaygo
Hess	Newaygo
Kimball	Newaygo

Lake	County
Pickereel	Newaygo
Sylvan	Newaygo
Webinguaw	Newaygo
Cranberry	Oakland
Deer	Oakland
Hawk	Oakland
Kirkwood	Oakland
Lakeville	Oakland
Long	Oakland
Middle Straits	Oakland
North Buckhorn	Oakland
Orion	Oakland
Oxbow	Oakland
Parke	Oakland
Taylor	Oakland
Crystal	Oceana
Pentwater	Oceana
Stony	Oceana
Clear	Ogemaw
Rifle	Ogemaw
Big	Osceola
Center	Osceola
Hicks	Osceola
Indian	Osceola
Five (Two)	Otsego
Five(Three)	Otsego
Little Bradford	Otsego
Opal	Otsego
Perch	Otsego
Viking	Otsego
Bradford (Big)	Otsego/Crawford
Crockery	Ottawa
Higgins	Roscommon
Houghton	Roscommon
Clear	St. Joseph
Corey	St. Joseph
Klinger	St. Joseph
Perrin	St. Joseph
Portage	St. Joseph
Templene	St. Joseph
Wahbememe	St. Joseph
Cedar	Van Buren
Crooked (Big)	Van Buren

Lake	County
Crooked (Little)	Van Buren
Fish	Van Buren
Gravel	Van Buren
Keeler	Van Buren
Silver	Van Buren
Blue Herron	Wayne
Okanoka	Wayne
Pleasant	Wexford
Stoneledge	Wexford

Appendix C

The following data are a summary of the measurements taken during the 2010 CLMP field season.

Secchi Disk Transparency

- 197 lakes (215 basins) were sampled.
- Total number of measurements = 3,049
- Transparency data summary:
 - Transparency range: 1-46 feet
 - Mean: 12.8 feet
 - Median: 11 feet
 - TSI_{SD}*: 27-65 (average: 41.7)

*For more information on TSI measurements, please see the CLMP annual reports at:
<http://www.micorps.net/lakereports.html>

Spring Total Phosphorus

- 152 lakes were sampled
- Data summary:
 - range: <5-125 ug/l
 - mean: 14.1 ug/l
 - median: 11.0 ug/l
- 25 QA/QC samples were taken.
 - 18 replicate samples
 - 4 side-by-side samples
 - 1 side-by-side replicates
 - 1 field blanks
 - 1 equipment blanks

Summer Total Phosphorus

- 178 lakes were sampled
- Data summary:
 - range: <5-90 ug/l
 - mean: 14.5 ug/l
 - median: 11 ug/l
 - TSI_{TP}: <27 - 69 (39.4 average)
- 31 QA/QC samples
 - 23 replicate samples
 - 4 side-by-side samples
 - 2 field blanks
 - 2 equipment blanks

Appendix C, continued.

Chlorophyll a

- 609 chlorophyll a samples were collected/analyzed
- 125 lakes (128 basins) sampled:
 - range: <1-160.0 ug/l
 - mean: 4.8 ug/l
 - median: 2.8 ug/l
 - TSI_{CHL}: <31-63 (average: 43)
- 62 QA/QC samples
 - 13 replicate samples
 - 7 side-by-side samples (SOP field filtered)
 - 7 side-by-side sample reps (SOP field filtered)

Dissolved Oxygen/Temperature

- 44 lakes (46 basins) were sampled throughout the summer.
- A total of 421 oxygen/temperature profiles were taken.
- Between 5-27 measurements were made for each profile.
- In total, 4834 oxygen/temperature measurements were taken in 2010.

Aquatic Plant ID and Mapping

1 lake enrolled

Exotic Aquatic Plant Watch

21 lakes enrolled

Appendix D.

Projects Selected for Funding under the Michigan Volunteer River, Stream, and Creek Cleanup Program (VRSCCP)

2010 Grants

Grant #: VRSCCP2010-01

Grantee: City of Battle Creek

Title: Global Citizens River Conservation Day

Watershed(s): Kalamazoo River

Funding Amount: \$1,500

Final Report: Available upon request; will be submitted to DNRE at end of 2010 grant cycle

To promote the protection of the water resources within the Kalamazoo River watershed through the removal of trash and tires.

Grant #: VRSCCP2010-02

Grantee: City of Charlotte

Title: 6th Annual River Cleanup

Watershed(s): Butternut Creek, Battle Creek River

Funding Amount: \$739.61

Final Report: Available upon request; will be submitted to DNRE at end of 2010 grant cycle

To clean up and improve approximately 2.5 miles along Butternut Creek and Battle Creek River within the City of Charlotte.

Grant #: VRSCCP2010-03

Grantee: Grand Traverse Conservation District

Title: Boardman River Clean Sweep 2010

Watershed(s): Boardman River

Funding Amount: \$1,513

Final Report: Available upon request; will be submitted to DNRE at end of 2010 grant cycle

To conduct the 6th annual community-wide cleanup of the Boardman River in conjunction with the National River Cleanup Week and the National Cherry Festival.

Grant #: VRSCCP2010-04

Grantee: Chesaning Area Parks and Recreation Commission

Title: Annual Shiawassee River Clean-Up

Watershed(s): Shiawassee River

Funding Amount: \$1,700

Final Report: Available upon request; will be submitted to DNRE at end of 2010 grant cycle

To clean up approximately 4.5 miles of the Shiawassee River in Chesaning Township, Saginaw County, by removing trash and debris from the water and along the river banks.

Appendix D, continued.

Grant #: VRSCCP2010-05

Grantee: Muskegon Conservation District

Title: Muskegon River (Milliron Road) Cleanup Project

Watershed(s): Muskegon River

Funding Amount: \$970

Final Report: Available upon request; will be submitted to DNRE at end of 2010 grant cycle

To clean trash and other debris to improve the water quality along a 2-mile stretch of river near Muskegon, Michigan.

Grant #: VRSCCP2010-06

Grantee: Saginaw Conservation District

Title: 2nd Annual Cass River Clean-Up

Watershed(s): Cass River

Funding Amount: \$943

Final Report: Available upon request; will be submitted to DNRE at end of 2010 grant cycle

To clean a 3-4 mile section of the river from the Frankenmuth Dam to Dixie Highway to better showcase the river trail and attract new visitors to the area.

Grant #: VRSCCP2010-07

Grantee: Shiawassee County Health Department Environmental Health Division

Title: 13th Annual Shiawassee River Cleanup

Watershed(s): Shiawassee River

Funding Amount: \$1,800

Final Report: Available upon request; will be submitted to DNRE at end of 2010 grant cycle

To remove trash and debris from the river along 8 miles of stream, targeting rural areas and urban concentrations for tire collection.

Grant #: VRSCCP2010-08

Grantee: Missaukee Conservation District

Title: Missaukee/Muskegon Cleanup

Watershed(s): Muskegon River

Funding Amount: \$2,145

Final Report: Available upon request; will be submitted to DNRE at end of 2010 grant cycle

To clean up two sections of the Muskegon River by removing trash and debris from the water and along the banks.

Grant #: VRSCCP2010-09

Grantee: Barry Conservation District

Title: 15th Annual Thornapple River Cleanup

Watershed(s): Thornapple River

Funding Amount: \$1,825

Final Report: Available upon request; will be submitted to DNRE at end of 2010 grant cycle

To remove all safely accessible trash from 80 river miles while recruiting volunteers from at least five watershed communities.

Appendix D, continued.

Grant #: VRSCCP2010-10

Grantee: City of Ann Arbor

Title: Ann Arbor Canoe Liveries Keep the River Clean

Watershed(s): Huron River

Funding Amount: \$3,204

Final Report: Available upon request; will be submitted to DNRE at end of 2010 grant cycle

To keep the Ann Arbor area section of the Huron River clean throughout the warm weather season while building knowledge and understanding of the river and its ecosystem among groups of volunteers who will become stewards of the river in years to come.

Grant #: VRSCCP2010-11

Grantee: Van Buren Conservation District

Title: Community Creek Cleanup in the Paw Paw and Black Watersheds

Watershed(s): Paw Paw River, Black River

Funding Amount: \$3,715

Final Report: Available upon request; will be submitted to DNRE at end of 2010 grant cycle

To improve the water quality and vitality of local creeks, stream banks and the health and biodiversity of critical wildlife populations and habitats by removing anthropogenic sources of trash and debris.

Grant #: VRSCCP2010-12

Grantee: Macomb County Public Works Office

Title: Conservation Easement River Cleanup in the North Branch Subwatershed

Watershed(s): Clinton River

Funding Amount: \$1,281

Final Report: Available upon request; will be submitted to DNRE at end of 2010 grant cycle

To clean up along one major river site in the conservation easement along the North Branch of the Clinton River, in preparation for public use through recreation, nature trails and an outdoor education area.

Appendix E.

Results from an optional user survey in the Michigan Data Exchange.

Affiliation	Organization	Data Use
Academia	American Military University	School research on water monitoring programs.
Academia	Annis Water Resources Institute - Grand Valley State	We are looking for ways to coordinate the collection, analysis, and dissemination of water quality data throughout the west Michigan region.
Academia	Annis Water Resources Institute - Grand Valley State	Write a watershed management plan.
Academia	Eastern Michigan University	I am a graduate student in the Master of Science in GIS program. I am doing a project that may lead to my masters project in tracking water quality change over time for Orchard lake in Oakland County.
Academia	MATC Student	Homework assignment
Academia	Miami Ohio University	Research purposes.
Academia	Michigan State University	Today, I'm summarizing available data to see how it may be used to augment ongoing and future limnological research here at MSU.
Academia	Michigan State University	I am using the data in a study to help refine remote sensing detecting of algae in lakes.
Academia	Michigan State University	Looking for phosphorus data on Gull Lake for research.
Academia	Michigan State University	Class project
Academia	Michigan State University	Working on a restoration project
Academia	Montclair State University	Calibrate remote sensing assessments
Academia	MSU Fisheries and Wildlife	I might use the Secchi depth data to relate to local environmental policy
Academia	Northwestern Michigan College	Browsing
Academia	Princeton University	For my coursework
Academia	Student at St Cloud State	For a school project
Academia	University of Cantabria	I'm just interested in the biochemical cycles of the lake
Academia	University of Washington	
Academia	University of Wisconsin	Investigating the Distribution of Aquatic Invasive Species in Northern Wisconsin and the Upper Peninsula of Michigan
Academia	University of Wisconsin-Marinette	Personal interest
Academia	UW-Marinette	Instruction
Academia		Class on Sustainable Design
Business	ECT	Management Plan
Business	Environmental Legal Service, P.C.	General interest
Business	EnviroScience Inc.	Get a better understanding of lake trophic states
Business	Patriot Realty	lake information for sales
Business	Prein&Newhof	To study water quality for wastewater collection system planning
Business	Progressive AE	For submittal to MDNRE for lake management plan
Business	Prudential Preferred	A client asked for it.
Business	SuperMax Natural Fertilizer	A conscious company's efforts to help educate lake citizens and their lawn service providers in staying in compliance with lake laws and best practices, in curbing non-point runoff of possibly harmful chemicals, including phosphates into the lake(s)

Business	Tetra Tech	To acquire an understanding for the normal levels of dissolved trace metal concentrations in Upper Peninsula Michigan water.
Federal Agency	USFS	I'm curious about your total phosphorus data for local lakes.
Federal Agency	USGS	Predictive models
Federal Agency	USGS	Modeling
Federal Agency	USGS	Modeling
Individual		looking to see what data may have been gathered on Hunter lake in alcona county
Individual		To monitor history of the water quality in Diamond Lake, Cass Cty.
Individual		Establish a reference and long term history of the lake quality.
Individual		Purchasing lake property
Individual		Checking clean water for recreation
Individual		Trying to find a comprehensive, searchable database of inland lakes in Michigan
Individual		To decide whether to purchase a home.
Individual		Looking for background information on water.
Lake Association	Bear Lake Watershed Alliance	Monitor Bear Lake and compare to other lakes.
Lake Association	Big Pine Lake Assoc	I am the CLMP Volunteer
Lake Association	Blue Lake Association	Manage Blue Lake
Lake Association	Browns Lake Improvement & Protection Association	For a meeting of our board.
Lake Association	Crockery Lake Association	Water quality and weeds.
Lake Association	Crystal Lake Association	Review data of lakes similar to ours
Lake Association	Deer Lake Association	report at a meeting
Lake Association	Duncan Lake Association	Review for what I have entered to date
Lake Association	Eagle Lake Improvement Association, INC	Chart CLMP data for display and analysis
Lake Association	Farwell Lake Riparian Association	Information for membership
Lake Association	Glen Lake Assoc	
Lake Association	Greater Lake Shinanguag Association	Chemical control Water quality
Lake Association	Gull Lake Quality Organization	It is part of our organizations lake monitoring program.
Lake Association	Hamlin Lake Preservation Society	Monitoring water quality. Reporting results and conclusions to lake association members.
Lake Association	Indian Lake Association of Vicksburg, Inc.	View historical data
Lake Association	Indian Lake Association of Vicksburg, Inc.	Review of historical data for reporting to association membership.
Lake Association	Lake Orion Lake Association	We are using the data for tracking purposes, but could use some specific lake insights on how our compares with others from a current and trend standpoint.
Lake Association	Little Pine Island Lake Association	To assist in maintaining the quality of Little Pine Island Lake

Lake Association	Ore Lake Preservation Assoc.	CLMP monitor
Lake Association	PST Lake Association	
Lake Association	Rifle Lake Property Owners Association	CLMP volunteer
Lake Association	Sherman Lake Residents Association	Review data entry
Lake Association	Stony Lake (Oceana Co.) Property Owners	Historic record of lake quality.
Lake Association	Three Lakes Association	We are using the data to encourage a PhD student's research on the role of calcium carbonate precipitation on the dynamics of water clarity.
Lake Association	Van Etten lake Association	To prepare a report
NGO	Flint River Watershed Coalition	Reporting Benthic Monitoring scores and habitat information.
NGO	Huron River Watershed Council	Monitor status of lakes in the watershed.
NGO	Huron River Watershed Council	to assist watershed residents with water quality problems
NGO	Marinette County Land and Water Conservation	Baseline to measure against potential future water quality changes.
NGO	Michigan Trout Unlimited	Background information
NGO	Rapid River cleanup	help in the dredging or placement of sand traps in RAPID RIVER.
NGO	Schremes Trout Unlimited	Assessment pf cold water resources
NGO	Sierra Club Michigan Chapter	Comparing Menominee County data to other stream data in U.P.
NGO	West Michigan Environmental Action Council	Comparison to present conditions
State Agency	MDEQ	watershed planning
State Agency	MDNRE	looking for lake data
State Agency	MDNRE	To plan biosurveys
State Agency	MDNRE	search lake data
State Agency	MDNRE	Shoreline assessment
State Agency	MDNRE	Lake shoreline assessment
State Agency	MDNRE	
State Agency	MDNRE	NDPES-related
State Agency	MI CNRE	Watershed survey planning
State Agency	Utah Division of Water Quality	We are forming our own volunteer monitoring program and are using your program as an example!