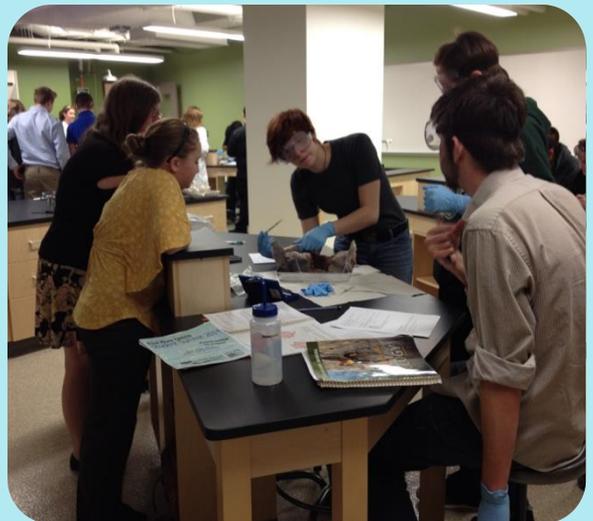




Flint River GREEN 2014 Annual Report



Letter from the Executive Director

Flint River Watershed Coalition

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Outreach and Events Manager

Edythe Westhoff

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This year, we celebrated 25 years of bringing Flint River GREEN to area classrooms. The longevity of the program speaks to the value of the program to area teachers, students, mentors, and volunteers in the program.

Getting our young people out of the classroom and to their local river or stream makes our invaluable freshwater resources a real, tangible thing. We see tremendous shifts in students' views of their natural environment, and more importantly, in their perceived ability to make a difference in protecting that resource.

GREEN volunteers all note the excitement they see on students' faces when they don that pair of waders, the determination as they work through a complex chemical test of the water, and the nervous excitement of getting up in front of their peers to discuss their results. This program impacts students on such a wide variety of measures, all while bringing them real world experiences they can carry with them throughout the rest of their middle, high school, and college educations.

As always, we simply couldn't bring this fantastic program to the students of the Flint River Watershed without the broad volunteer and financial support of our community. This report is distributed with our immense gratitude to everyone mentioned throughout its pages, who help ensure that year after year, our area students have access to an experience unlike any other.

Here's to 25 MORE years of Flint River GREEN!
Rebecca

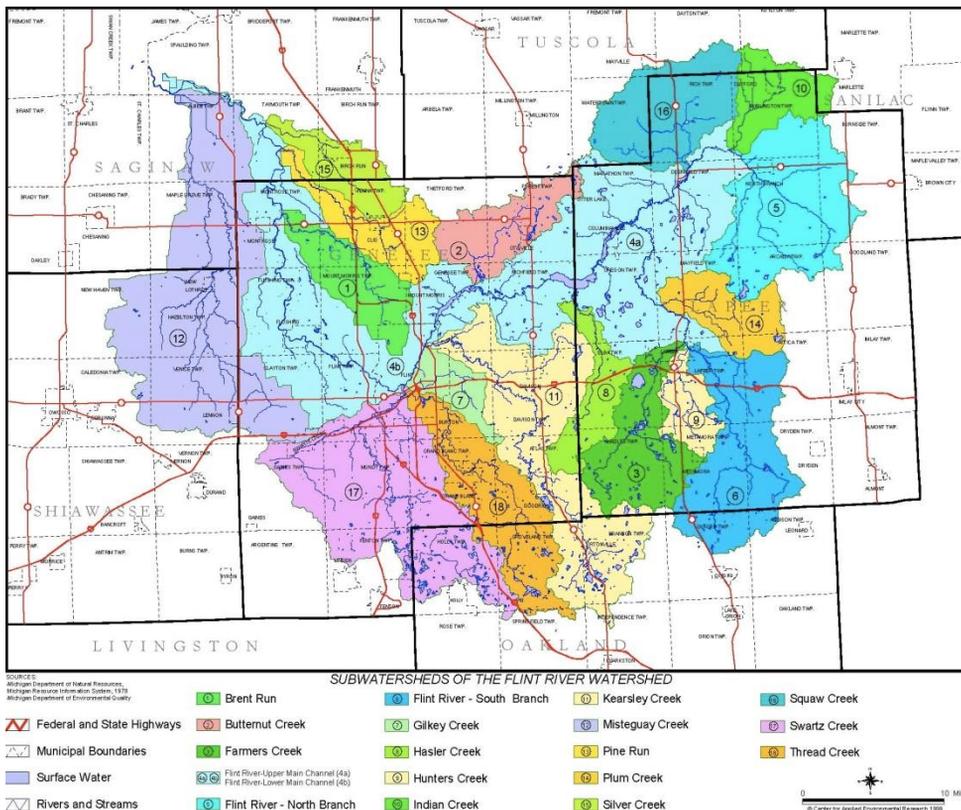
GREEN: An Overview and History

The Global Rivers Environmental Education Network (GREEN) is a nationally replicated program that offers a unique and hands on experience for students in the field of water quality testing. It was created in 1989 by University of Michigan professor, Dr. William Stapp, and assistant Mark Mitchell.

Students and their teachers collaborate with mentors from environmental professions to perform water quality tests on bodies of water within their watershed. They use their findings to develop action plans to improve or maintain the water in their area. They then share this information with their peers and community officials at the annual student summit. Teachers participate in a Professional Development Day to learn about GREEN and performing the various field tests.

Beginning in 1989, GREEN worked with Flint schools, and later expanded to include many high schools and middle schools within Genesee County. The success and value of GREEN later led to the inclusion of schools in Saginaw, Lapeer, and Oakland counties. GREEN continues to grow and is now incorporated into many teachers' annual curriculum. The 2014 season marks **25** years of GREEN!

The Flint River Watershed



The Flint River Watershed covers approximately 1,400 square miles across 7 counties, including Genesee, Lapeer, Saginaw, and Oakland. All of the land and tributaries that flow into the Flint River make up the Flint River Watershed that GREEN students learn about and protect.

GREEN Planning and Development



The GREEN Planning Committee meets monthly to prepare and plan for the upcoming GREEN season. This dedicated group brings together expertise, resources, and enthusiasm to the GREEN program. The planning committee oversees the preparations for the Student Summit and professional development days for teachers. They also introduce mentor and teacher pairings, seek funding sources and work with community partners to increase the scope of GREEN. This year there were two professional development days, both of which were graciously hosted by the Genesee Intermediate School District. The first training provided to new teacher that reviewed the program and test. Two days later a professional development training was held for all GREEN teachers and introduced a new interactive mapping tool created by the MSU Institute of Water Research and presented by Laura Young. The planning committee collaborates to improve and expand the program year to year. Its efforts that GREEN continuously provides the best experience possible to teachers and students.

Planning Committee

Darren Bagley

Irene Bashore

James Emmerling

Rebecca Fedewa

Lisa Hook

Tom Hutchings

Tom Jones

John Maksimchuk III

John Mildovan

Stephanie Nummer

Jan Sneddon

Edyth Westhoff



“The technology aspects included [this year] were amazing”
– 8th Grade GREEN Teacher

Participating GREEN Schools

Atherton High School

Teacher: Matt Hyslop

Beecher Middle School

Teacher: Don Hammond

Bendle High School

Teacher: Todd Barden

Brandon Middle School

Teacher: Dave Green

Carman-Ainsworth High School

Teacher: Julie Lawrence

Chatfield School—Lapeer

Teachers: Tracy Boyle,
Lori Raymond, Annette Young

Carter Middle School

Teachers: Chip McCallum,
Ryan Niemi

Davison Middle School

Teachers: Jody Kosiara,
Marc Pittenger (assisting)

Flushing High School

Teacher: Paul Taylor

Grand Blanc East Middle School

Teachers: Deb Lacki,
Crystal Sobeck, Patricia Nelson

Grand Blanc West Middle School

Teachers: Elizabeth Lemerond,
Victoria Skrisson

Kearsley Armstrong Middle School

Teacher: Cindy Sierra

Lakeville Middle School

Teachers: Matt Chapin, Ginny Gaudard,
Josh Henley

Linden Middle School

Teacher: Kim Cornell, Charlene Nester

Marshall-Greene Middle School

Teachers: Tammy Daenzer, Roger Rothe

Mt. Morris Junior High School

Teachers: Nick Carr, Bekah D'Haene,
Kim McCormick

North Branch High School

Teacher: Carrie Wenta

North Branch Middle School

Teacher: Julie Tumblin

Rolland –Warner Middle School

Teachers: Anne Prill, Chris Prill,
Wyatt Stevens

St. John Vianney Catholic School

Teacher: Janice Matlon

Swartz Creek Middle School

Teachers: Brandolyn Forbes, Paul Speck

Westwood Heights— Hamady High School

Teachers: Arletha Bryant, John Horton

Zemmer Middle School

Teacher: Lisa Bjork

GREEN Mentors

Darren Bagley
MSU Extension -
4-H Education

Aaron Bagwell
Quaker Chemical

Irene Bashore
General Motors

Eric Brubaker
City of Flint –
Water Pollution Control

Craig Buike
Quaker Chemical

Thad Domick
City of Flint –
Water Pollution Control

Rob Fenn
General Motors

Heather Griffin
UM-Flint Alumni

Tom Hutchings
City of Flint –
Water Pollution Control

Tom Jones
Genesee County
Drain Commission

John Maksimchuk III
General Motors

Rick McAvinchey
Forestry Specialist

John Moldovan
General Motors Retiree

Pat Schultz
General Motors

Angella Sigler
General Motors

LeAnn Slosar
General Motors

Dennis Weiler
General Motors

Jaime Welch
Flint River
Watershed Coalition

GREEN mentors offer assistance in both the classroom and at the testing site. Working closely with teachers, mentors speak with students about GREEN and introduce them to the tests they will perform. Mentors share knowledge about the test, the proper way to perform the tests, safety procedures and how to interpret results. These volunteers offer insight as to what may cause a result to be high or low, as well as help students develop action plans. Mentors are key to the success of GREEN. The knowledge they bring from their respective fields, as well as the hands-on assistance at the testing sites, further expose the students to the value of environmental stewardship and potential career paths in a science, technology, engineering, or mathematics field.



During Project GREEN I learned how much we can affect the local river - Atherton High School 10 grade Student

GREEN Testing Parameters and Watershed Facts

GREEN Students test for the Water Quality Index ratings (WQI). The WQI is the overall score the body of water receives after the field tests have been performed and the results have been tabulated.

Water Quality Index Ratings

- 100-90: Excellent Water Quality
- 89-70: Good Water Quality
- 69-50: Average Water Quality
- 49-25: Marginal Water Quality
- 24-0: Poor Water Quality

I learned how to do tests, the importance of keeping rivers clean, and how rivers are polluted.
- Armstrong Middle School
6th grade student



Water Quality Field Tests
Biochemical Oxygen Demand
Dissolved Oxygen
Fecal Coliform
Nitrates
pH
Temperature
Total Phosphates
Total Solids
Turbidity



A * in the WQI value denotes that the complete testing results were not available due to inclement weather on the testing day, calculation errors, or testing errors. Trial and error is part of the scientific process and allows students to learn about what may have contributed to these results. Flint River GREEN is a valuable and ongoing learning experience.

Water Quality Results for 2014

School	Site Location	Total WQI Value
Armstrong MS	Chipmunk Creek - back of Armstrong MS	79.72
Atherton HS	Thread Creek - near Bristol Rd and Genesee Rd	75.65
Beecher MS	Pond behind Beecher HS	58.9
Bendle HS	Thread Creek	82.02
Brandon MS	Unkown Location	*
Carman Ainsworth HS	Kearsley Creek - North of For-Mar	78.07
Carter MS	Pine Run - Clio City Park	76.76
Chatfield School	Farmer's Creek	68.37
Davison MS	Black Creek - Jack Abernathy Park	79.04
Flushing HS	Armstrong Creek - Dodge Rd	66.74
Grand Blanc East MS	Thread Creek - Moonstone Rd, Grand Blanc, MI	88.26
Grand Blanc West MS	Swartz Creek at Frost Gardens	85.71
LakeVille MS	Unkown Location	*
Linden MS	Linden MS	74.44
Marshall-Greene MS	Silver Creek Site # 17	74.4
Mt. Morris Jr. HS	Flint River near Stepping Stone Falls	82
North Branch HS	Unkown Location	*
North Branch MS	Gravel Creek at McNees Meats	79.4
Rolland-Warner MS	Farmer's Creek	70.21
St. John Vianney Catholic School	Flint River at Mott Park Golf Course	70.69
Swartz Creek MS	West Branch of Swartz Creek - between Swartz Creek MS and HS	76.58
Westwood Heights Hamady MS	Unkown Location	*
Zemmer MS	White Drain behind Zemmer MS	85.35



GREEN Student Summit



On May 16, 2014 GREEN mentors, community members, students, teachers, and volunteers gathered together at Kettering University for the annual Student Summit – the pinnacle of the GREEN season. Kettering University generously hosted the Flint River GREEN Student Summit for the 2014 season. This was all possible with the assistance of Julie Simmons at Kettering University.

Students presented their water testing results, action plans, and other information that gathered from their field testing and study days. Presentations and follow up inquiries from the audience were facilitated by emcees, Sue Kubic from the Genesee County Drain Commission and Irene Bashore from General Motors.

When students were not presenting, they took part in a variety of breakout sessions available. Community members and environmental professionals eager to share their knowledge with GREEN students led these breakout sessions.

Summit Breakout Sessions

Catching Big Fish on Little Bugs

Josh Henley, Andy Neeson, Chip McCallum:
Blackboard Outfitters

Chevy in the Hole: A Walking Tour

Ryan Londrigan: *AKT Peerless Environmental*

Creek Critters

Mike Haley: *FRWC Monitoring Volunteer*

Go Green, Help Keep Our Water Clean!

Laura Young: *MSU Institute of Water Research*

Incredible Edible Plants

Peter McCreedy: *Ecology Director, Chatfield School*

Kettering Biology, Chemistry, and Chemical Engineering Lab Tours

Faculty and Staff: *Kettering University*

Paddling the Flint River

Riley McLincha: *Watershed Enthusiast*

Rats in Your Drinking Water

Darren Bagley: *4-H Youth Development Coordinator, MSU Extension*

Who Wants to be an Environmentalist?

Jeff Johnson, Brian Schorr: *Genesee Conservation District*



GREEN Student Summit Survey Results

Flint River Project GREEN Summit Evaluation 2014

Pre/Post Evaluation

Before Project GREEN

Answer Options	1 (Strongly Disagree)	2 (Disagree)	3 (Agree)	4 (Strongly Agree)
The Flint River is clean and healthy.	47	81	47	17
I can make a difference in the health of the Flint Riv	22	43	67	56
I understand how a river may become polluted.	18	29	59	87
I want to do things to help the environment.	11	30	77	70
I know about jobs in the environment field.	30	68	67	23

After Project GREEN

Answer Options	1 (Strongly Disagree)	2 (Disagree)	3 (Agree)	4 (Strongly Agree)
The Flint River is clean and healthy.	12	26	107	46
I can make a difference in the health of the Flint Riv	9	13	56	111
I understand how a river may become polluted.	2	8	27	145
I want to do things to help the environment.	4	10	74	102
I know about jobs in the environment field.	5	24	92	67

During Project GREEN I learned about the practical and healthy value in eating and using natural and locally unprocessed foods.

- Armstrong Middle School
8th grade Student



Appreciations

The Flint River Watershed Coalition is very thankful for the many financial and in-kind supporters of Flint River GREEN. Such generosity makes it possible for GREEN to continue its mission to educate our young people about their watershed and their environment. Your support will have a lasting impact for generations to come.

Thank You!

City of Flint, Water Pollution Control Department

Earth Force

Flint River Watershed Coalition

Genesee County Drain Commissioner's Office, Surface Water Management

Genesee County Drain Commissioner's Office, Our Water Program

Genesee County Parks and Recreation Commission

Genesee Intermediate School District

Genesee Intermediate School District, Office of Education and Learning

General Motors Corporation

General Motors Foundation

Kettering University

Lapeer Intermediate School District

Michigan State University 4-H Youth Development





Flint River Watershed Coalition
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