

Flint River GREEN 2016 Annual Report



Letter from the Executive Director

Flint River Watershed Coalition

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In 2016 we completed our 27th year 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 word 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 many more years of Flint River GREEN!
Rebecca

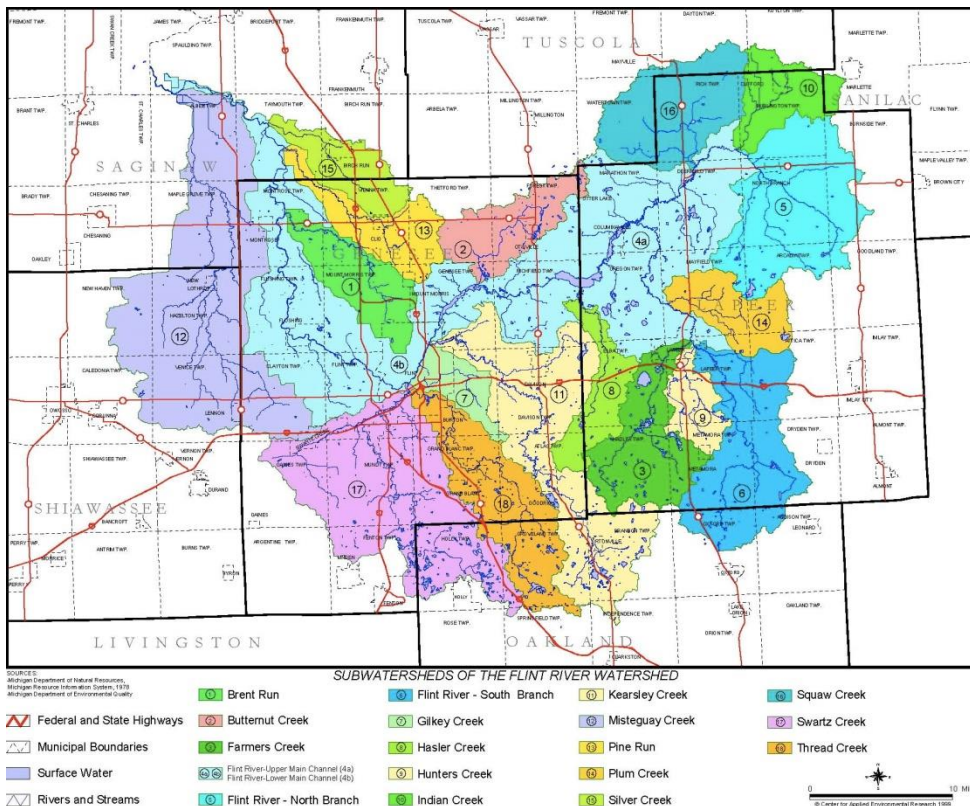
GREEN: An Overview and History

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 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

Planning Committee

Darren Bagley

James Emmerling

Rebecca Fedewa

Lisa Hook

Tom Hutchings

Tom Jones

John Maksimchuk III

Jaime Welch

Jan Sneddon

Edythe Westhoff

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, one of which was graciously hosted by the Genesee Intermediate School District. The first training was held in Flint for new teachers, giving an overview of the program and going step by step over each test performed. A month later a professional development training was held for all GREEN teachers, reviewing testing techniques and procedures, as well as taking a tour of the waste water treatment plant. The planning committee collaborates to improve and expand the program year to year. Its efforts ensure that GREEN continuously provides the best experience possible to teachers and students.



“During Project GREEN I learned that we have the power and control to help stop spreading pollution and make a difference.”

– 8th Grade Swartz Creek Student

Participating GREEN Schools

Atherton High School

Teacher: Matt Hyslop

Bendle High School

Teacher: Todd Barden

Brandon Middle School

Teacher: Dave Green

Carman-Ainsworth Middle School

Teacher: Melissa Warburton

Carter Middle School

Teachers: Chip McCallum,
Ryan Niemi

Chatfield School—Lapeer

Teachers: Tracy Boyle,
Lori Raymond, Annette Young

Davison Middle School

Teachers: Jody Kosiara,

Grand Blanc East Middle School

Teachers: Deb Lacki, Debra Wilson,
Crystal Sobeck, Patricia Nelson

Grand Blanc West Middle School

Teachers: Elizabeth Lemerond,
Victoria Skrisson

Grand Blanc High School

Teacher: Suzanne Powers

Hill-McCloy High School

Teacher: Jennifer Kahn

LakeVille Middle School

Teachers: Matt Chapin, Josh Henley

Lapeer High School

Teacher: Cheryl Butterfield

Linden Middle School

Teacher: Charlene Nester, Cori Mason

Marshall-Greene Middle School

Teachers: Tammy Daenzer, Roger Rothe

Mt. Morris Junior High School

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

North Branch High School

Teacher: Carrie Wenta

North Branch Middle School

Teacher: Julie Tumblin, Kaitlyn Wildey

Powers High School

Teacher: Julie Lawrence

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

Zemmer Middle School

Teachers: Anne Prill, Wyatt Stevens, Kelly
Gartell, Chris Ewald

GREEN Mentors

Darren Bagley
MSU Extension -
4-H Educator

Aaron Bagwell
Quaker Chemical

Eric Brubaker
City of Flint –
Water Pollution Control

Craig Buike
Quaker Chemical

Thad Domick
City of Flint –
Water Pollution Control

Marv Asbury
General Motors

Tom Hutchings
City of Flint –
Water Pollution Control

Tom Jones
Genesee County
Drain Commission

Melissa Kahn
Genesee County-
Water and Waste Services

John Maksimchuk III
General Motors

Diane Peplinsky
Burlington Township Clerk

Pat Schultz
General Motors

Angella Sigler
General Motors

LeAnn Slosar
General Motors

Alex Thibeault
General Motors

Jaime Welch
Flint River
Watershed Coalition

Brent Wilson
General Motors

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 that I can have fun and still help the environment.
– **8th Grade Linden 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

Water Quality Field Tests

Biochemical Oxygen Demand
Dissolved Oxygen
Fecal Coliform
Nitrates
pH
Temperature
Total Phosphates
Total Solids
Turbidity



I learned that I
can make a
difference in
my health and
others around
me by helping
clean up
pollution
– 7th Grade
Zemmer
Student



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 2015

School	Site Location	Total WQI Value
Atherton HS	Pierson Drain at Atherton HS	77.41
Bendle HS	Thread Creek	84.71
Brandon MS	Unkown Location	*
Carman Ainsworth HS	Kearsley Creek - North of For-Mar	76.07
Carter MS	Pine Run - Clio City Park	83
Chatfield School	Farmers Creek	66.90
Davison MS	Kearsley Creek – Davison	61.82
Grand Blanc East MS	Thread Creek at Perry Rd	73.10
Grand Blanc West MS	Swartz Creek at Frost Gardens	62.64
Grand Blanc HS	Swartz Creek at Thompson Rd	*
Hill-McCloy HS	Flint River at Barber Memorial Park	76.16
Lakeville MS	Unkown Location	*
Lapeer HS	Hunters Creek Lapeer	71.08
Linden MS	Linden Mill Pond (Shiawassee River)	69.65
Marshall-Greene MS	Silver Creek Site # 17	75.12
Mt. Morris Jr. HS	Flint River near Stepping Stone Falls	55.39
North Branch HS	Unkown Location	*
North Branch MS	Gravel Creek at McNees Meats	78.4
Powers Catholic HS	Unknown Location	*
St. John Vianney Catholic School	Flint River at Mott Park Golf Course	71.69
Swartz Creek MS	West Branch of Swartz Creek - between Swartz Creek MS and HS	75.58
Westwood Heights Hamady MS	Drain at Randy Wise	49.44
Zemmer MS	White Drain behind Zemmer MS	87.26



GREEN Student Summit

On May 15, 2015 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 once again generously hosted the Flint River GREEN Student Summit for the 2015 season. This was all made possible with the assistance of Julie Simmons at Kettering University.

Students presented their water testing results, action plans, and other information they gathered from their field testing and study days. Presentations and follow up inquiries from the audience were facilitated by emcee Tom Jones with the Genesee County Drain Commission.

When students were not presenting, they took part in a variety of breakout sessions led by community members and environmental professions eager to share their knowledge with GREEN students.

Summit Breakout Sessions

Catching Big Fish on Little Bugs

Chip McCallum: *Blackboard Outfitters*

Chevy Commons: A Walking Tour

Ryan Londrigan: *AKT Peerless Environmental*

Creek Critters

Mike Haley, Lisa VanOchten: *FRWC Monitoring Volunteers*

Environmental Dumpster Diving

Shane Kelley, Carl Thompson: *Genesee County Metropolitan Planning Commission*

Go Green, Help Keep Our Water Clean!

Laura Young: *MSU Institute of Water Research*

Incredible Edible Plants

Peter McCreedy: *Ecology Director, Chatfield School*

Kettering Bioethics, Biology, and Biochemistry Sessions

Dr. Michelle ammerman, Dr. Jim Cohen, Dr. Veronica Moorman,

Dr. Cheryl Samaniego: *Kettering University*

Rats in Your Drinking Water

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

The Scientist in Your Backyard

Heather Griffin: *For-Mar Nature Preserve & Arboretum*

Sewer CSI

Eric Brubaker, Thad Domick, Tom Hutchings: *Water Pollution Control Specialists, City of Flint*

Watershed in Jeopardy

Jeff Johnson, Brittney Ellis: *Genesee Conservation District*



GREEN Student Summit Survey Results

Before Project GREEN

Answer Options	1 (Strongly Disagree)	2 (Disagree)	3 (Agree)	4 (Strongly Agree)
The Flint River is clean and healthy.	41	44	42	6
I can make a difference in the health of the Flint Riv	7	36	60	30
I understand how a river may become polluted.	6	23	54	47
I want to do things to help the environment.	2	27	54	50
I know about jobs in the environment field.	30	39	46	34

After Project GREEN

Answer Options	1 (Strongly Disagree)	2 (Disagree)	3 (Agree)	4 (Strongly Agree)
The Flint River is clean and healthy.	11	25	74	28
I can make a difference in the health of the Flint Riv	4	4	49	79
I understand how a river may become polluted.	4	3	45	83
I want to do things to help the environment.	1	4	35	95
I know about jobs in the environment field.	3	20	58	54

During Project GREEN I learned there were a lot more thing to the environment than I thought there were
 – **8th Grade Linden MS Student**



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 Company

General Motors Foundation

Kettering University

Lapeer Intermediate School District

Michigan State University 4-H Youth Development





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