



Flint River GREEN 2009 Annual Report



From the Flint River Watershed Coalition

"Water is the basis of life and the blue arteries of the earth! Everything in the non-marine environment depends on freshwater to survive."

Sandra Postel, Global Water Policy Project
Grist Magazine; April 26, 2004

Over the years, more than 20,000 students have participated in the GREEN program. We could not have accomplished this without the dedication and participation of area schools, local funders, and our cadre of volunteer mentor and presenters.

GREEN has a real and significant impact on students. This program guides our kids through a fun outdoor learning program that brings hands-on use of real world water quality testing procedures to students while instilling a sense of pride and stewardship for our water resources.

We're very pleased that 2009 marks a year of growth for the GREEN program - for the first time, we're working beyond the borders of Genesee County. And in 2010, we're expanding the program even more. I hope you enjoy our 2009 GREEN Annual Report, and I look forward to working with you to protect, preserve, and improve the Flint River Watershed.



Rebecca Fedewa, Executive Director
Flint River Watershed Coalition

Note: Student photos were supplied by Brandon Schools and FRWC.



Flint River GREEN Overview

“During Flint River GREEN, I learned some animals I never would have suspected are connected to clean water sources.”

Student, 2009 Student Summit
Flint River GREEN Program

Since 1989, the Flint River Watershed Coalition, with our partners, has coordinated an applied curriculum for middle and high school students geared to have a positive impact on the environment, now and into the future. This integrative program was developed by University of Michigan professor Dr. William Stapp and one of his assistants, Mark Mitchell and named Global Rivers Environmental Education Network or “GREEN.” Students in the GREEN program conduct water quality tests based on the nine protocols selected by the National Sanitary Foundation. The summation of these tests results in a numerical water quality index (WQI) used to compare water quality from river to river, and year to year.

In the Flint River watershed, the GREEN program started with the Flint Community Schools and for many years was labeled “Project GREEN.” As this program grew and incorporated additional Genesee County school districts, students participation increased from approximately 100 students in 1989 to over 1,200 in 2004. To reflect this growth and Genesee County funders, the title was changed to “Genesee GREEN.” In 2009, this program hit a new milestone by expanding beyond Genesee County to include Brandon Middle School students from Oakland County. To reflect this and potential future growth, the program was aptly re-named “Flint River GREEN.”

The success of this program is a reflection of the value it brings to all its participants.

- Teachers gain a hands-on learning experience that compliments science curriculum.
- Students have the opportunity to present their data and recommendations to the community at the Student Summit.
- Students connect with their local watershed and with environmental professionals through the mentoring aspect of GREEN.

The community and the Genesee County Drain Commission benefit through the collaborative sharing of data.



Partnering to protect, preserve and improve the Flint River watershed.

Flint River GREEN Teachers

"A discovery is said to be an accident meeting a prepared mind."

Albert Szent-Gyorgy, Hungarian Biochemist
1937 Nobel Prize for Medicine

In Genesee County, the GREEN program began with five teachers from the Flint Community Schools. In 2009, the GREEN program hit two milestones with 39 teachers participating and breaking beyond the county border to include students from Brandon Community Schools.

Atherton High School
Matt Hyslop

Beecher Middle & High School
Don Hammond
Annette Zemon-Parker

Bentley High School
Cheryl Hobson

Brandon Middle School
Dave Green

Carman/Ainsworth High School
Julie Lawrence

Clio Carter Middle School
Chip McCallum
Ryan Nemi

Davison Middle School
Jodie Kosaris

Fenton A.G. Schmidt Middle School
Lynn Behr

Flint Northern Commencement Academy
Nadina Aversa

Flint Classical Academy
Jarrett Trombley

Flint-Holmes Found.Middle School
Chris Ochodnický

Flushing High School
Chad Anderson

Genesee High School
Matt Malenich

Goodrich Middle School
Brad Dawson
Cindy Rivet
Craig Salter

Kearsley Armstrong Middle School
Carrie Hall
Diana Bowman
Jennifer Hall

Lake Fenton High School
Joe Grigas
Ken Roy

LakeVille Middle School
Andrea Thelen
Josh Henley

Linden Middle School
Charlen Nester
Kim Bigelow-Cornell

Montrose Hill McCloy Middle & High School
Bob Masser
Jennifer Kahn
Tammy Belson

Mt. Morris Jr. High School
Bekah D'Haene

St. John Vianney Catholic School
Elizabeth Petrides

Swartz Creek Middle School
Amy Culver
Brandolyn Forbes
Dori Hill

The Valley School
Mike White

Westwood Heights Hamady High School
Tammy Wylie
Tom Chedister



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Flint River GREEN Mentors

"Nothing is softer or more flexible than water, yet nothing can resist it."

Lao Tzu, Chinese Taoist Philosopher, Founder of Taoism
600 BC-531 BC

Mentors play a valuable role helping teachers prepare their students for field work, the testing, and interpreting their results. In 2009, Flint River GREEN mentors included the following environmental professionals:

General Motors

| | | | |
|---------------|---------------|---------------|----------------|
| Irene Bashore | Craig Buike | Dan McComb | Rich Schomaker |
| Sue Bloch | Eric Hake | John Moldovan | Pat Schultz |
| John Bradburn | Stacey Helton | Jeff Parker | Jennifer Tegen |
| Eric Bradfish | Julie Lenz | Sharon Sawyer | Dennis Weiler |

City of Flint Water Pollution Control Division

| | | | |
|---------------|-------------|---------------|------------|
| Eric Brubaker | Thad Domick | Tom Hutchings | Dawn Welsh |
|---------------|-------------|---------------|------------|

Delphi Automotive Systems

| | |
|-----------|--------------|
| Al Putney | Pier Bollini |
|-----------|--------------|

Flint River Watershed Coalition

| | |
|----------------|-----------------|
| Rebecca Fedewa | Suzanne Lossing |
|----------------|-----------------|

Genesee County Drain Commission

| | |
|-----------|-------------|
| Tom Jones | Susan Kubic |
|-----------|-------------|

Other Organizations

Darren Bagley, Michigan State University, Extension Center
Bob Carlyon, Retired City of Flint
Erin Gallay, Earth Force
Heather Griffin, Flushing Twp. Nature Park
Eric Hall, Flint River Paddlers, FRWC
Dan Harrett, Retired; General Motors
Saed Isaac, Alumni; University of Michigan Flint
Sara McDonnell, University of Michigan; Center for Applied Environmental Research (CAER)
Nicole Raymond, Genesee Intermediate School District
Bill Welch, Retired, Genesee Intermediate School District



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Student Summit

“High quality water is more than the dream of the conservationists, more than a political slogan; high quality water, in the right quantity at the right place at the right time, is essential to health, recreation, and economic growth.”

Edmund S. Muskie, U.S. Senator
Speech, March 1, 1966

On May 15th, 2009, students presented their Flint River GREEN findings to the community during the Student Summit. The summit was hosted by Mott Community College (MCC) where students had the opportunity to attend a variety of educational sessions conducted by professionals from a variety of environmental fields. Our appreciation to the many organizations that helped support this summit.

| | |
|---------------------------------------|--|
| Energy Futures & Impacts on our Water | Lee Sprague, Clean Energy Campaign Manager |
| Paddling the Pewonigowink | Riley McLincha, Watershed Enthusiast |
| Biking & the Environment | Bruce Nieuwenhuis, President, Friends of the Flint River Trail |
| Green Power Strategy | Rob Threlkeld, Manage, GM Contracts & Green Initiative |
| Gilkey Creek Restoration | Erin Caudell, Program Specialist, Ruth Mott Foundation Applewood Estate |
| Rats in Your Drinking Water | Darren Bagley, MSU-E Extension Educator & 4-H Youth Dev. |
| Alien Invaders of the Great Lakes | Mary Bohling, MI Sea Grant |
| Muck on the Beaches in Saginaw Bay | Margaret Lansing & Elizabeth Klimas, NOAA Great Lakes |
| Great Lakes & the Regional Climate | Stephen Riley, USGS, Great Lakes Science Center |
| Recent & Future Water Legislation | Nathan Murphy, Environmental Policy Analyst, Senate Democratic Caucus |
| Connecting with Conservation | Sarah Kilgore, Education Director, Genesee Conservation District |
| Chet Wilson Geology Museum | Open Tour, hosted by MCC Science & Math Department |
| Bee a Keeper! | Jim Dodder, Genesee County Bee Keeper |
| Surfing the DEQ! Finding Resources | Pam Howd, Environmental Assistant Program, MI DEQ |
| Kayaking: Mild to Wild | Eric Hall, President, Flint River Paddlers |
| Owl Habitats | Layne Hillman, Naturalist, Seven Ponds Nature Center |
| Sewer CSI | Dawn Welsh, Tom Hutchings, Thad Domick, and Eric Brubaker, Water Pollution Control Specialists, City of Flint Waste Water Treatment Center |



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Testing Our Local Waterways

"Water is fundamental for life and health. The human right to water is indispensable for leading a healthy life in human dignity. It is a pre-requisite to the realization of all other human rights."

The United Nations Committee on Economic, Cultural and Social Rights
Environment News Service, November 27, 2002

| Testing Location: | Participating School | 2009 Q-Value Score | 1991-2009 *Average |
|--------------------------------------|-------------------------------|---------------------------|---------------------------|
| Thread Creek at Bristol Rd. | Atherton H.S. | 79 | 77 |
| I-475 Retention Stream & Drain | Beecher M.S. | ** | ** |
| Richfield Park | Bentley H.S. | 59 | 70 |
| Kearsley Creek behind M.S. | Brandon M.S. | ** | ** |
| Upstream of For-Mar Nature Center | Carman-Ainsworth H.S. | 70 | 72 |
| Pine Run at Clio Park | Carter M.S., Clio | 70 | 74 |
| Black Creek, Jack Abernathy Park | Davison M.S. | 62 | 62 |
| Fenton Mill Pond (Shiawassee River) | Fenton M.S. | 67 | 67 |
| Flint River W. of Johnson AAA School | Holmes Academy, Flint | 79 | 63 |
| Gilkey Creek behind Central H.S. | Whittier Classical, Flint | 49 | 68 |
| Mill Street Bridge | Flint Northern H.S. | 79 | 67 |
| Linden Rd. & Flushing Rd. | Flint Northern H.S. | 72 | 72 |
| Armstrong Creek at Dodge Road | Flushing H.S. | 73 | ** |
| Bear Swamp at Genesee Road | Genesee M.S. | 42 | ** |
| Thread Creek Burpee at Vassar Rd. | Goodrich M.S. | 85 | 85 |
| Crampton Drain / Chipmunk Creek | Armstrong M.S., Kearsley | 83 | 74 |
| Coe Drain Lake Outlet, N. of H.S. | Lakeville M.S. | ** | ** |
| Linden Mill Pond (Shiawassee River) | Linden M.S. | 88 | 89 |
| Seymour Rd. North of Farrand Rd. | Montrose H.S. | 82 | 74 |
| Barber Memorial Park, near M-57 | Montrose M.S. | 68 | 68 |
| Clio Rd. & Stanley Rd. in Mt. Morris | Mt. Morris Jr. H.S. | 58 | 58 |
| Mott Park | St. John Vianney, M.S. | 75 | 75 |
| Swartz Creek at Hill Rd. Bridge | Swartz Creek M.S. | 76 | 71 |
| Gilkey Creek, near Ballenger Hwy. | The Valley School | 69 | 69 |
| Clio Bike Path at Jennings Rd. | Westwood Heights, Hamady H.S. | 64 | 69 |

Q-Value Ratings:

100 – 90 Excellent Water Quality

89 – 70 Good Water Quality

69 – 50 Medium or Average Water Quality

49 – 25 Marginal Water Quality

24 - 0 Poor Water Quality

* Note: The average is calculated from reported scores between the years 1991 to 2009. Some sites are newer and therefore did not have many earlier scores reported. For individual scores, visit website: <http://www.geneseegreen.org/history.php> and select the "View Data" link.

** Values Not Available



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Flint River GREEN Sponsors

*“Clean water is not an expenditure of Federal funds;
clean water is an investment in the future of our country.”*

Bud Shuster, U.S. Representative
Quoted in *The Washington Post*, January 9, 1987

THANK YOU to our sponsors for bringing
Flint River GREEN to our classrooms.



City of Flint, Water Pollution Control Dept.

Donna's Donuts

Earth Force

Flint River Watershed Coalition

General Motors

Genesee County Drain Commission

Genesee Intermediate School District

The Raymond C. & Anne T. Johnson Family
Foundation

Michigan State University, Extension

Mott Community College, Science & Math Dept.

Royal Bank of Canada, Blue Water Project

Tetra Tech

University of Michigan, Flint; Center for Applied
Environmental Research



Flint River GREEN Advisory Team

*"Discovery consists of seeing what everybody has seen
and thinking what nobody has thought."*

Albert Szent-Gyorgy, Hungarian Biochemist
1937 Nobel Prize for Medicine

The Flint River GREEN Advisory Team brings valuable diversity and insight to help form the collaborative effort that is essential to provide the GREEN program to area schools.

Flint River Watershed Coalition:

Jack Minore, Board Chair

Rebecca Fedewa, Executive Director

Bill Welch, FRWC Education Committee

Darren Bagley, FRWC Education Committee Chairperson; MSU-
Extension Officer

Suzanne Lossing, Education & Outreach Coordinator

General Motors

John Moldovan

Stacey Helton

Genesee Intermediate School District

Larry Casler

Lisa Hook

Nicole Raymond

Earth Force

Alyssa Hawkins

Jan Sneddon

Erin Gallay



*Bottom photos were
taken at the Student
Summit at Mott C.C.*



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Learning About the Flint River

"Water is life's mater and matrix, mother and medium. There is not life without water."

Albert Szent-Gyorgy, Hungarian Biochemist
1937 Nobel Prize for Medicine



To learn more about partnering to help protect, preserve and improve the Flint River watershed, contact the Flint River Watershed Coalition.

Visit our website for information on upcoming events and other FRWC programs. www.FlintRiver.org

Flint River Watershed Coalition

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Flint, MI 48502
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Flint River between Ballenger Hwy. & downtown Flushing.

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