

# Butler County Stream Team



A Unique and Effective Partnership



# Butler County Stream Team



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# Butler County Stream Team



What is Stream Team?  
Our accomplishments

Our challenges  
What lies in the future?



# What is the Stream Team?

- ◆ Volunteer community group that collects and analyzes water samples from streams and rivers in Butler County Ohio
  - ◆ Volunteer collection
  - ◆ Volunteer aided analysis



# Goals

- ◆ Provide the most accurate and reliable background data on Butler County streams possible using volunteers
- ◆ Engage the community and educate them about streams, human impacts on streams, and storm water flow issues
  - ◆ Promote common ownership of our environment
  - ◆ Bring the community together in joint efforts towards guarding our streams for future generations

# Features

- ◆ Second Saturday of every month
  - ◆ Recently changed to March through November
- ◆ 7 Chemical/biological parameters
  - ◆ Total Phosphorus, Nitrates, Bacteria, Conductivity, Total Dissolved Solids, pH, Turbidity
  - ◆ – soon to pilot macroinvertebrate assessment
- ◆ USEPA Level 2 data methods with written Project Study Plan and Quality Assurance Plan

# Jointly coordinated by:



Butler County Storm  
Water District

Butler Soil and Water  
Conservation District



Institute for the  
Environment and  
Sustainability  
(Miami University)

# History of Stream Team

- ◆ “Volunteer monitoring programs are continually changing and evolving as new monitoring activities are added, new volunteers sign up, funding sources change, and so on.”

USEPA Water Monitoring and Assessment page

<http://water.epa.gov/type/watersheds/monitoring/dir.cfm>

- ◆ Stream Team is no different

# Starting Objectives

- ◆ Help fulfill requirements of U.S. EPA National Pollutant Discharge Elimination System (NPDES) Phase II minimum control measures for Butler County Storm Water District
  - ◆ Public education and outreach
  - ◆ Public participation / involvement
- ◆ Collect water quality information at a Level 2 data quality standard as described in:
  - ◆ Chapter 3745-4 of the Ohio Administrative Code  
([www.epa.ohio.gov/dsw/rules/3745\\_4.aspx](http://www.epa.ohio.gov/dsw/rules/3745_4.aspx))
  - ◆ USEPA Water Quality Standards for Surface Waters  
([water.epa.gov/scitech/swguidance/standards/index.cfm](http://water.epa.gov/scitech/swguidance/standards/index.cfm))

# Starting Objectives – Building the Program

- ◆ Determining responsibilities of partners
- ◆ Determining appropriate methodology
- ◆ Acquiring appropriate equipment, staff, lab space
- ◆ Outreach to public for water samples and lab help

# Determining responsibilities of partners

- ◆ Meetings, meetings, meetings!
- ◆ Uncertainty – new territory

# Contributions of Partners - Butler Storm Water

- 💧 Consumable supplies for lab
  - 💧 Reagents, bottles, etc.
- 💧 Volunteer supplies and incentives
  - 💧 T-shirts, meals for get-togethers, coolers, yearly appreciation gift
- 💧 Outreach supplies
  - 💧 Magnets, county map booklets

# Contributions of Partners - Butler Soil and Water

- 💧 Educational outreach
  - 💧 Butler County Streams booklet
  - 💧 Water table at outreach events
- 💧 Increased audience for getting volunteers
  - 💧 Inclusion of Stream Team in newsletter with >2,000 subscribers
  - 💧 Networking with teachers

# Contributions of Partners – IES

- 💧 Lab
- 💧 Lab equipment
- 💧 Partial salary of support staff
- 💧 2 student lab manager assistantships
- 💧 Volunteer organization
- 💧 Data entry, verification, presentation to public – website, conference and resident/volunteer meetings

# What Do Partners Receive?

## Butler Storm Water

- ◆ Accomplishment of monitoring program for NPDES requirements
- ◆ Increased visibility with public
- ◆ Long-term level 2 data for Butler County streams

# What Do Partners Receive?

## Butler Soil and Water

- 💧 Increased educational opportunities
- 💧 Community outreach / benefits
- 💧 Analysis of samples from a stormwater retention renovation
- 💧 Free well water testing for residents

# What Do Partners Receive?

## IES

- ◆ Student assistants' experience as lab managers – skills and resume builder
- ◆ Data for student projects
- ◆ Community outreach / benefits
- ◆ Experience for all IES students in volunteer monitoring program

# Starting Objectives – Building the Program

- ◆ Determining responsibilities of partners
  - ◆ Meeting, meetings, meetings!
- ◆ **Determining appropriate methodology**
- ◆ Acquiring appropriate equipment, staff, lab space
- ◆ Outreach to public for water samples and lab help

# Determining appropriate methodology

- ◆ Researching approved methodology
- ◆ Choosing ones possible with volunteers
- ◆ Duplicate testing and analysis on multiple equipment

# Acquiring appropriate equipment, staff, lab space

## 💧 Equipment

- 💧 Grants, YSI used equipment, Miami labs, IES purchases

## 💧 Staff

- 💧 Finding time in busy schedules!

## 💧 Lab space

- 💧 More difficult than expected
- 💧 Started with non-permanent setting
  - 💧 Storage between sampling days
- 💧 Eventually a permanent space

# Outreach to public for water samples and lab help

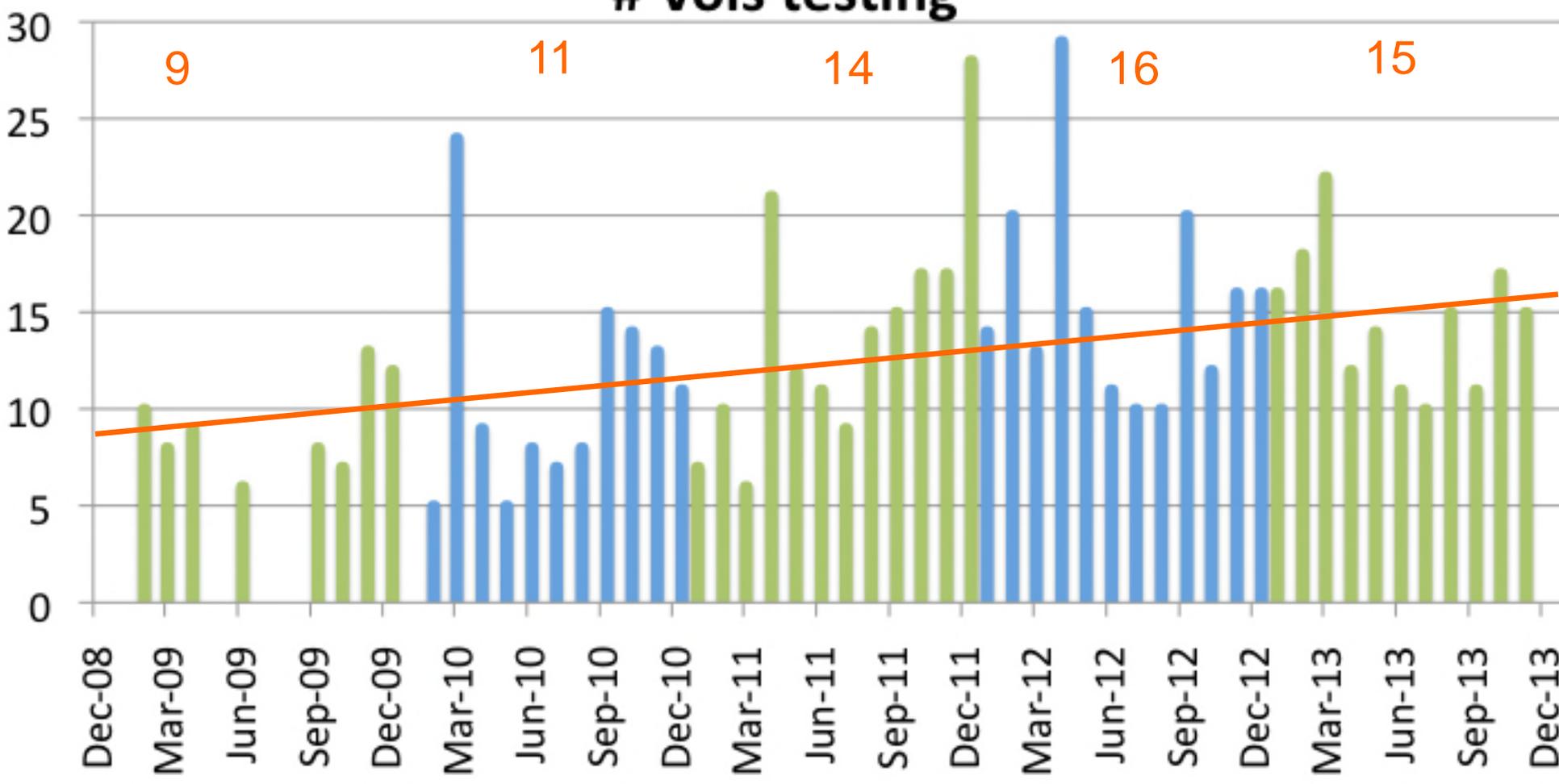
- 💧 Oxford Farmers Markets
- 💧 Great Miami River Days
- 💧 Partner newsletters
- 💧 Billboards
- 💧 Word of mouth
- 💧 Eventually a web site with data

# Accomplishments

- ◆ Robust volunteering community – 40+ / mo
- ◆ Approximately monthly outreach events
- ◆ Interactive web site
- ◆ Monthly newsletter
- ◆ 7 years of data on Butler County streams
- ◆ Level 2 quality data

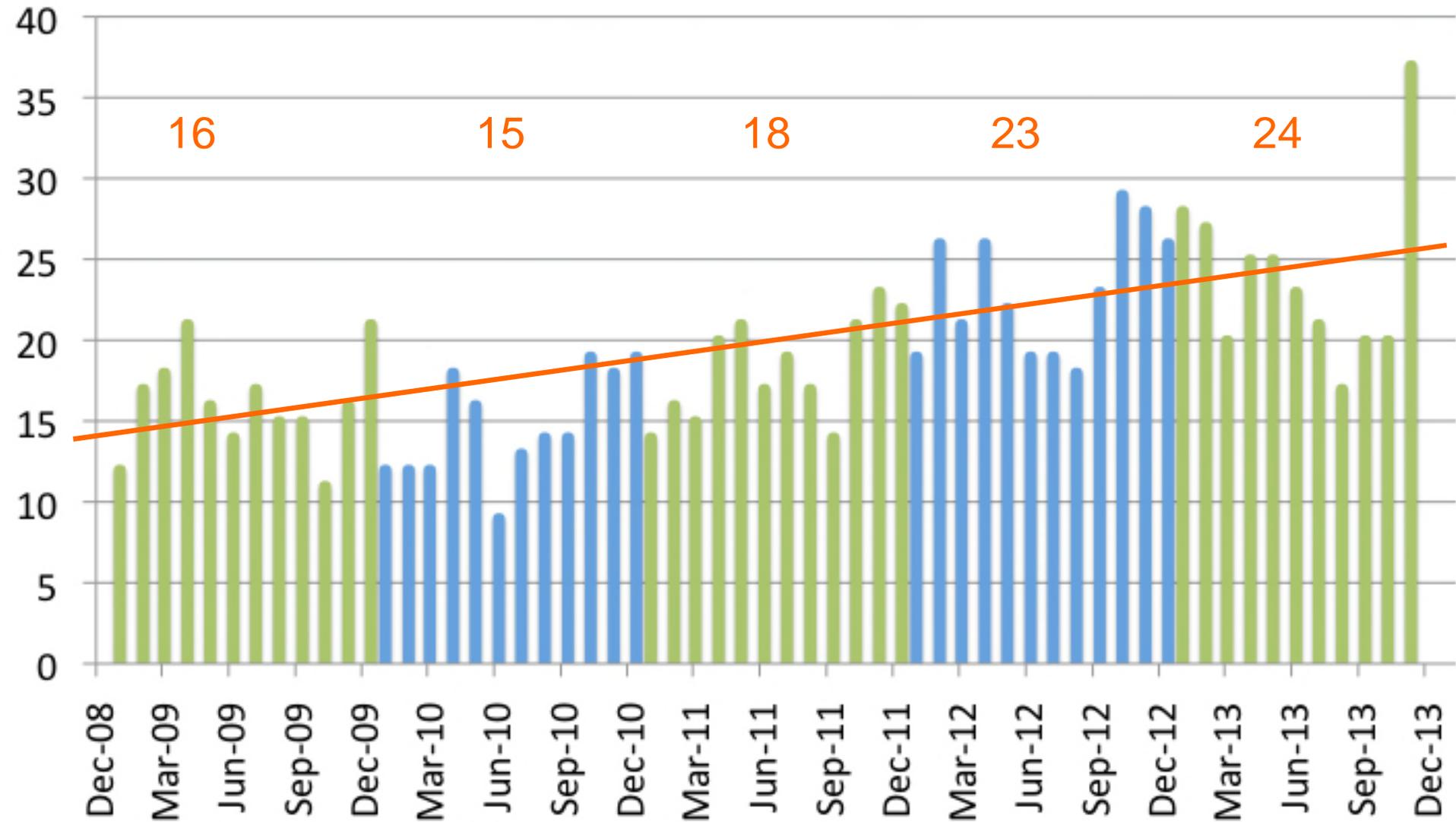
# Robust Volunteer Community

# Vols testing



# Robust Volunteer Community

# Vols sampling



# Accomplishments – Monthly Outreach Events

- 🟢 Canoeing – twice a year
- 🟢 Macro sampling training
- 🟢 Macro exploration for fun
- 🟢 Pot luck and sampling training
- 🟢 Rain garden demo
- 🟢 Earth Day events
- 🟢 Water treatment plant tour
- 🟢 Great Miami River Days
- 🟢 Open lab
- 🟢 Wetlands hike

# Accomplishments –

## Web Site – [butlercountystreamteam.org](http://butlercountystreamteam.org)



### Butler County Stream Team Volunteer Water Quality Monitoring

[Volunteer](#)

[Sample Locations](#)

[What We Test and Why](#)

[Data](#)

[Resources](#)

[Links](#)

## So Who, or What is, the Butler County Stream Team?

The Butler County Stream Team is a group of volunteers that collects, analyzes, and reports water quality data from many waterways in Butler County. We collect samples from streams and rivers in Butler County, Ohio and analyze them for these parameters: [nitrates](#), [total phosphorous](#), [bacteria](#), [conductivity](#), [total dissolved solids](#), [pH](#), [turbidity](#).

The Stream Team exists through the collaborative effort of Butler County resident volunteers, the [Institute for the Environment and Sustainability](#) at Miami University, the [Butler County Storm Water District](#), and the [Butler Soil and Water Conservation District](#).

Learn more about some of our volunteers on the [volunteer spotlight page](#).

The goal of the Butler County Stream Team is to educate residents about their local water quality issues, including storm water runoff and the pollution it brings to waterways in both rural and urban landscapes. A secondary goal is to use the data to look at trends and potential issues in the water quality of our county.

### Sampling Dates

...We have made the move to following the EPA's sampling calendar. Stream team will only be sampling the months of March - November each year. Our sampling date is the 2nd Saturday of each month, so our next date is:

April 12

May 10

June 14

### Upcoming Events

Donna, Lynn and Teresa are getting together to discuss dates for the ideas that you gave us for future volunteer get-togethers, classes, and more.

# Accomplishments – Interactive Web Site



## Butler County Stream Team Volunteer Water Quality Monitoring

[Logout](#)

### Locations

[Details](#) [Edit Site](#) [Sample Wizard](#) [Report](#) [Graphs](#) [Admin Tools](#) [Search](#)

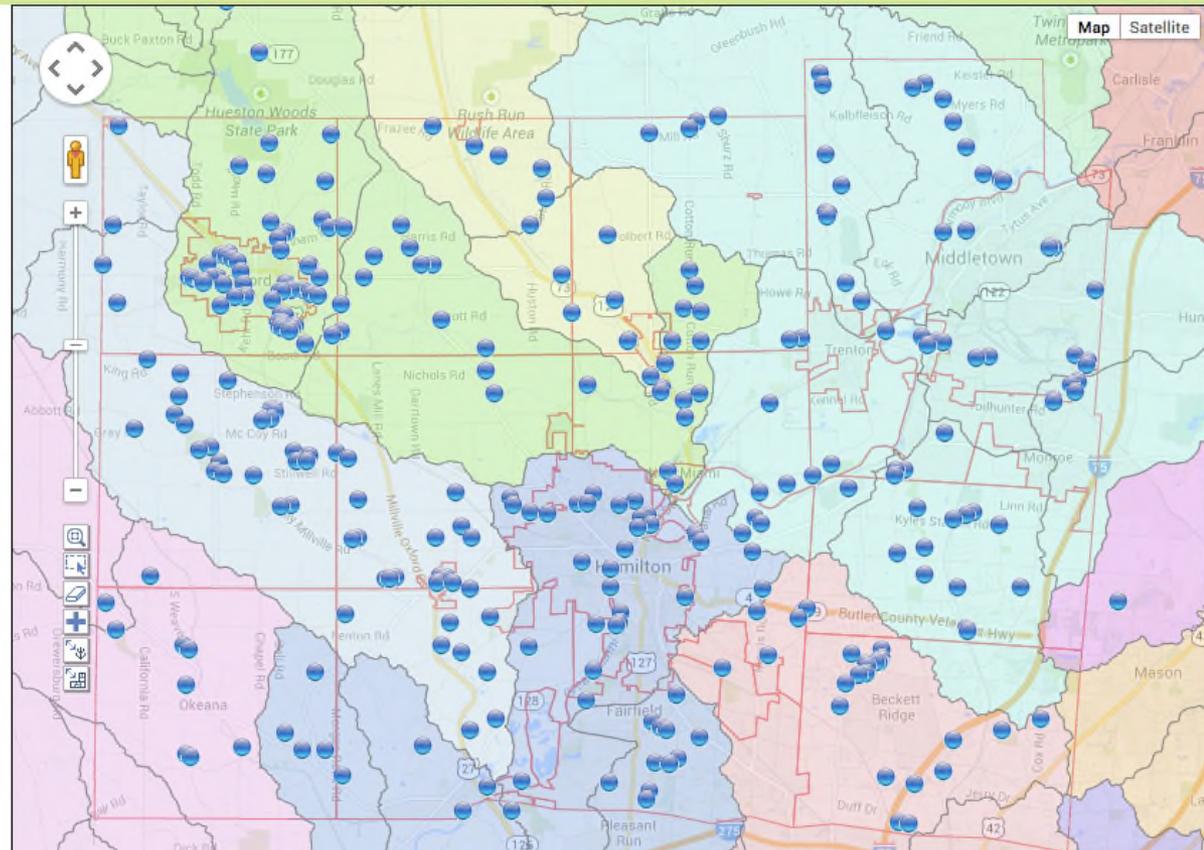
ID	Primary Watershed	Name
0		
10001	Cotton Run-Four Mile	4 Mile Creek at Lanes Mill Rd
10002	Cotton Run-Four Mile	Four Mile Creek4 Mile Creek at 177 bridge S of Darrtown
10003	Rush Run-Sevenmile	(Williams Run at Frazee Rd near Baker Rd
10004	Cotton Run-Four Mile	Scotts Run at 73
10005	Cotton Run-Four Mile	Darrs Run at 73
10006	Ninemile Creek-Sever	7 Mile Creek at St. Rt 73/Hamilton Eaton Rd
10007	Cotton Run-Four Mile	Coulter's Run at 4664 Katie Lane, Oxford
10008	Cotton Run-Four Mile	4 Mile Creek at 4467 Wallace Rd
10009	Ninemile Creek-Sever	7 Mile Creek at State Rd

Page 1 of 35 10 View 1 - 10 of 345

### Samples

[Details](#) [Add Sample](#) [Edit Sample](#) [Manage Bundles](#)

ID	Vol #	Description
Page 1 of 0 10 No records to view		



# Accomplishments – Monthly newsletter

## Butler County Stream Team April News - 2014



Volunteer Stream Monitoring in Southwest Ohio  
*Next Sampling Day - April 12<sup>th</sup>*

**\*\* Coolers are collected by 10:30 at most locations,  
by 10:00 at West Chester Presbyterian Church.**

### Spring / Summer Activities

One of the things we did at the Volunteer Appreciation Brunch was ask for ideas of activities our volunteers would like to do. Since then, the partners have met and decided on a line-up activities we can offer this spring and summer. We wanted to give you this list of dates early so you can put them on your calendar, so check below to see what sounds good to you!

The list was **quite** long ... so we don't have all the activities suggested scheduled for this year.

### Sampling Summary - March

Thanks everybody! Here's what we did last month:

# of samples analyzed	120
# sites too low to sample	3
# volunteers sampling	26
# volunteers in lab	21

WOW - 21 people came to lab last month! What a treat. We managed to get most people involved and sure do appreciate your efforts. If we didn't keep you busy,

# Accomplishments – Monthly newsletter

## **Coming up ...**

### **Butler Soil and Water's Annual Open House**

Join Lynn, Amy, and other district

### **One more 2013 Webinar at Butler Storm Water District**

The Butler Storm Water District has

### **November 20 - Stormwater Utilities: Reckoning the Cost Side of the Equation?**

Getting a good read on the actual

For more information click [here](#)

## **Wetland loss increasing**

### **According to NOAA and the US**

### **Fish and Wildlife Service**

The US Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration ([NOAA](#)) recently published a report on the nation's coastal wetlands in *[Status and Trends of Wetlands in the Coastal Watersheds of the Conterminous United States 2004 to 2009](#)*. The trend has many conservation organizations such as

## Volunteer Spotlight

Wow, what a summer!

Our summer activities ended with a bang last Saturday when a great group of 11 joined Lynn and Amy to canoe and kayak down the Great Miami River from Trenton to Hamilton. Below, they are heading out on their adventure!



They stopped along the way to train or retrain folks about how to correctly collect a sample.



It looks like they enjoyed some rapids.

# Accomplishments – Monthly newsletter

## River Reflections

Nothing can match the beauty of a stream in the snow! Here are some images that display this!



# Accomplishments – Monthly newsletter

## Invertebrate Spotlight Riffles, Beetles that is, in the Rill By Mary Cullum

In last month's newsletter (3/2014), Donna gave us a great primer on the Stream Team's pilot project of macroinvertebrate sampling we are launching this spring. She also provided links to two sites that do an excellent job of explaining the life cycles of these creatures and the role of macroinvertebrates in stream ecology. So here's another macroinvertebrate "creature feature" to get you thinking about them.

This month's feature macroinvertebrate is the riffle beetle. Riffle beetles belong to the largest and most diverse order of insects, Order Coleoptera. Riffle beetles themselves, are quite speciose - they are found on every continent except Antarctica, with about 1400 species worldwide. In North America, about 100 species in 27 genera have been found so far.



Riffle beetles are in the Family Elmidae.

# Accomplishments – 7 Years of Data

- ◆ 300+ sites sampled at least once
- ◆ > 7,800 samples analyzed
- ◆ Currently ~80 sites sampled every month
- ◆ Land use associated with each site
- ◆ Level 2 procedures at least since 2010 (except pH)

# Accomplishments – Level 2 Quality Data

- ◆ All Level 2 procedures and equipment
- ◆ Level 2 QDCs
- ◆ Written Project Study Plan
- ◆ Written Quality Assurance Plan
- ◆ Training of volunteers as Level 2 Samplers
- ◆ Supervision of volunteers in lab by Level 2 QDCs

# Accomplishments – Special Projects

- ◆ Emma Jones
  - ◆ Girls Scouts Silver Project
  - ◆ Activity booklet for groups, adopted a site
- ◆ Beckett Ridge Stormwater Retention Basin Renovation
  - ◆ From concrete channeled conventional basin to wetland – an innovative way to collect stormwater
  - ◆ Maybe a new control structure with flow monitor because we have been collecting data

# Challenges

- 💧 Definition of partner responsibilities
- 💧 Everyone's efforts part-time
- 💧 Reworking data to fit a database
- 💧 Working with students as lab managers
- 💧 Figuring out how our never-ending sampling fit with OEPA Credible Data Program
- 💧 Too much growth!

# Challenges –

## Definition of partner responsibilities

- ◆ Has evolved
- ◆ No written MOU – who's in charge?
- ◆ Too many things done by IES – now being split up
  - ◆ Volunteers and web site management – Butler Soil and Water
  - ◆ Administration – Butler Storm Water
  - ◆ Lab, data, presentations of data and newsletter - IES

# Challenges – Everyone's efforts part-time

- ◆ Enough said??

# Challenges – Students as lab managers

- 💧 Lots of turnover – some info not passed on
- 💧 Lots of time training and mentoring
- 💧 Lack of skills until second year in program
  - 💧 Web site management
  - 💧 GIS
  - 💧 Education / outreach

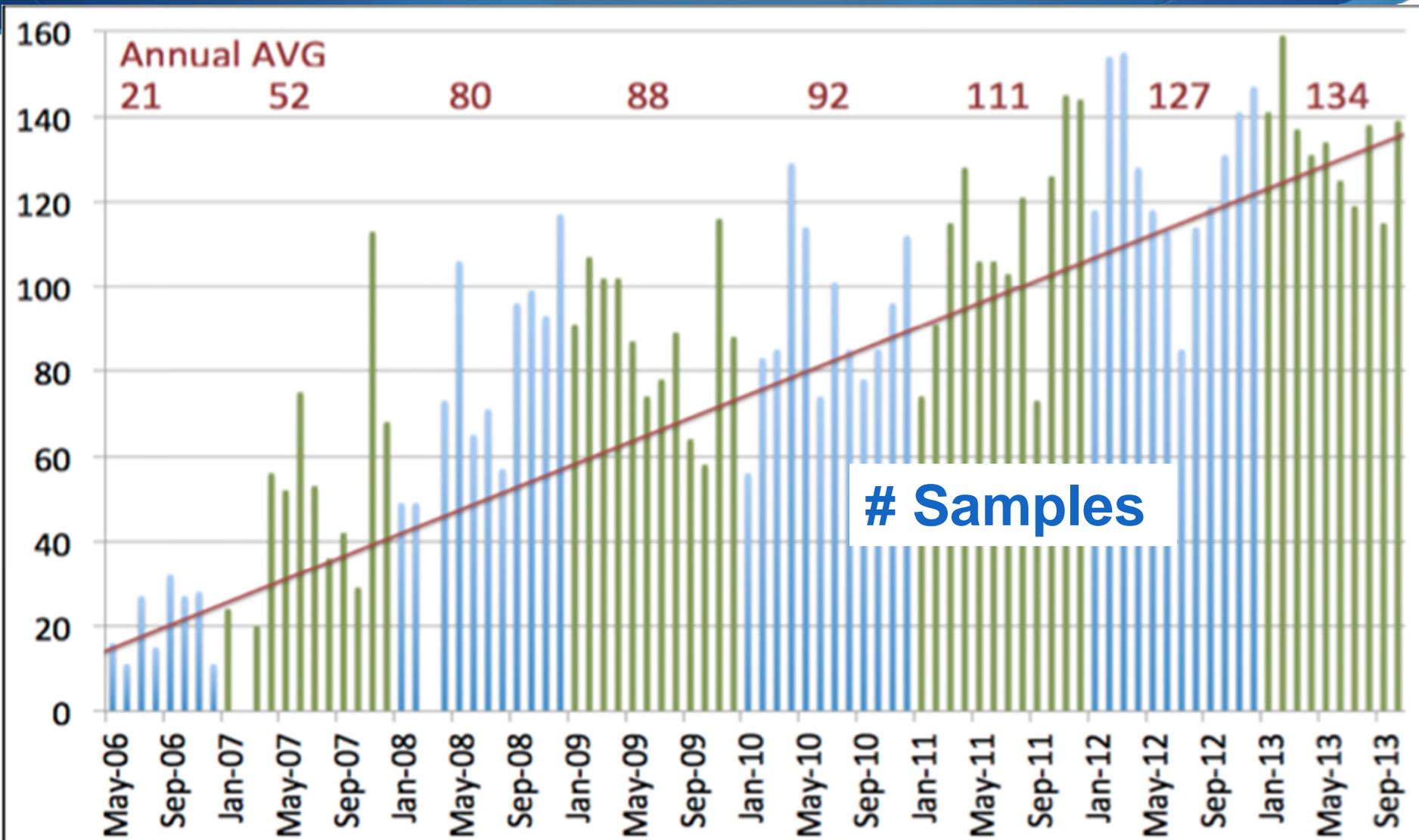
# Challenges – Reworking data to fit a database

- ◆ Begun in Excel when doing 25 samples/mo
  - ◆ Each parameter on different sheet
- ◆ For interactive web site needed a database
  - ◆ Unfamiliar with Access – rotating students
  - ◆ Unique sample ID (201410.001)

# Challenges – Credible Data Program

- ◆ We were not an ordinary program
- ◆ Issues with our program
  - ◆ No beginning and ending (12 months)
  - ◆ Too many samples => data entry a challenge
- ◆ Credible Data Program was evolving – just as we were!

# Challenges— Too successful?



# Challenges – Too successful?

- ◆ Created many issues
  - ◆ Graphs to display data on web site
  - ◆ Switch from any sample to consistent sites
  - ◆ Switch from building program to cutting back
    - ◆ Fewer sites – telling volunteers no?
  - ◆ Data entry to Credible Data Program
  - ◆ Over budget!

# Future of Stream Team

- ◆ 2014 restructuring
  - ◆ Reduced # sites
  - ◆ No sampling Dec to Feb
  - ◆ Volunteer Appreciation Brunch – February
  - ◆ Pilot of macro sampling
  - ◆ Written MOU in process

# Future Goals

- ◆ Consistent level 2 with state?
- ◆ Finding of problems in county streams
- ◆ Intense sampling of problem spots or areas of particular interest
- ◆ Coordination with precipitation and flow data