

IOWATER

Volunteer Water Quality Monitoring

Collaborating in Dubuque County with IOWATER Data

Over the past four years, the City of Dubuque, Dubuque Soil and Water Conservation District (SWCD), the University of Dubuque, and numerous local citizens have been collecting IOWATER data from the Catfish Creek watershed. The data collected have proven useful not only to citizens interested in the water quality of Catfish Creek, but also to local agencies working to maintain and improve conditions within the watershed and throughout the county.

IOWATER workshops were held to train City and SWCD staff, University of Dubuque students, as well as local citizen volunteers. Each group had different initial goals regarding how IOWATER data would be collected and used. However, the collective goal remained constant: work to protect Catfish Creek. "I'm not a chemist," said Dean Mattoon, stormwater compliance specialist for the City of Dubuque. "The IOWATER training and equipment give me the confidence to collect stream data that we can use here at the City." Mattoon has worked with student interns from the University of Dubuque, as well as Eric Schmechel, watershed coordinator for the Upper Catfish Creek Watershed Project, to incorporate IOWATER data with stream corridor data along all branches of the Catfish Creek watershed within the Dubuque city limits. In total, there are five branches of the creek. Within the past three years, the



Catfish Creek watershed (photo by Dean Mattoon)

group has successfully gathered data through use of the Rapid Assessment of Stream Corridor Along Length, or RASCAL protocol. RASCAL data marries global positioning system (GPS) data with descriptive attributes such as left- and right-bank conditions along a stream. By integrating IOWATER data with RASCAL data, the City can begin to identify trends over time and help set priorities for maintenance, improvement, or protection initiatives based on the collective data set. "The RASCAL data gets us generalizations for stream conditions here in town," said Mattoon. "But combined with the IOWATER data at every location, we can get a better picture of what things are like out there."

...from IOWATER's Coordinator

As I sit here writing this article, I am dreaming of warm temperatures, new leaves on trees, soft southern breezes, and yes, even a spring thunderstorm or two. Like you, I am itching to get outside and at my stream's edge to see what changes have occurred over the winter months.

While the stream has been frozen most of the winter, a recent video by our friends at the United States Geological Survey shows that spring thaws can have an impressive impact on rivers. In a once-in-a-lifetime experience, hydrologists with the USGS were on the Skunk River near Augusta, Iowa, taking a river flow measurement when they heard a mighty crack! What happened next was an amazing site to behold—the entire icecap on the Skunk River began to move and crash into the bridge and break into smaller chunks, which collected at the banks of the river. From the video, you can see that some of the chunks of ice were 9 to 12 inches thick, but the ice doesn't stand a chance when the river pushes it into the bridge. The USGS hydrologists took video of the entire event and have posted it on their video gallery at <http://gallery.usgs.gov/videos/353>.

Watching the power of the river is simply mesmerizing. The video is also a great reminder of how much we depend on the USGS to provide critical stream flow information to help predict potential floods. Thanks to all who help keep us safe!

Mary Skopec
IOWATER Coordinator

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2011 IOWATER Awards

NOMINATE

projects, groups, peers,
or yourself



This is your opportunity to recognize those working to improve Iowa's water quality.

Award Categories:

- Volunteer of the Year
- Professional of the Year
- Classroom of the Year
- Watershed Group of the Year
- Event of the Year

Deadline: June 3, 2011

Visit www.iowater.net for a nomination form.



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109 Trowbridge Hall
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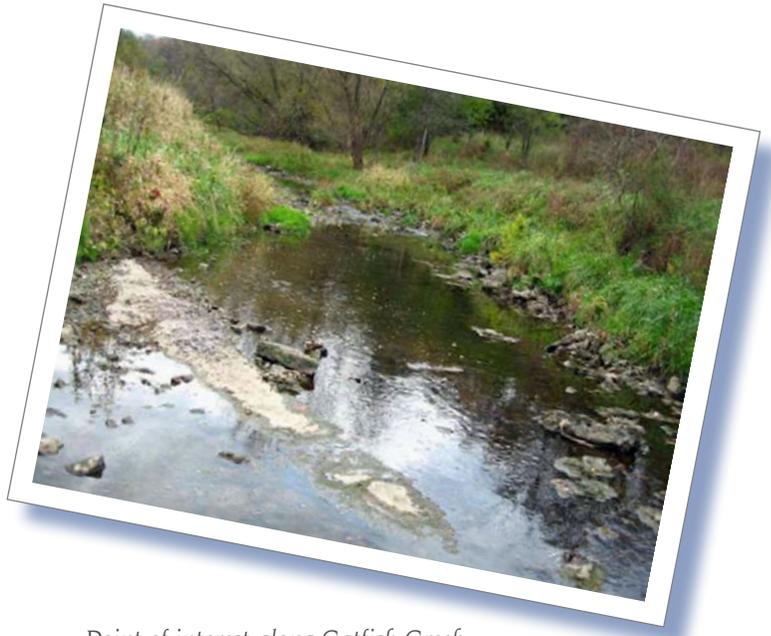
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IOWATER website: www.iowater.net

In 2008, the City of Dubuque launched its initial effort to align IOWATER data with the RASCAL data. The IOWATER field parameters for chemical, physical, and basic biological assessments were collected over a three-month period at twelve sites within the city limits. Ammonia test strips and a conductivity meter were added to the data set as well. Because Mattoon oversees the City's National Pollutant Discharge Elimination System (NPDES) permit for stormwater, he also has an interest in monitoring for other purposes, including illicit discharge detection and elimination. "In an ideal situation, we would be testing for fluorides, surfactants, and an ammonia to potassium ratio to determine whether a potential illicit flow is wash water or sanitary wastewater" said Mattoon. "But there isn't an easy, effective way to test these parameters in the field, so we do what we can through baseline data. We have tested sanitary and wash water, as well as local spring water for certain parameters, and we compare our results against these to help determine if the flow is illicit. It is hard here because there are so many springs."

Dubuque SWCD is also making use of IOWATER data by organizing volunteers for snapshot events and encouraging local citizens to adopt sites for ongoing monitoring. Students from the University of Dubuque are recruited for these events both within the city limits and in Dubuque County. "Our long-term goal is to have one gigantic watershed assessment for the entire Catfish Creek watershed," said Mattoon. Along with the Upper Catfish Creek sub-watershed, the City is interested in more assessment work on what is known locally as the "Bee Branch" Creek. Historically, this sub-watershed has experienced significant downstream flooding within the city due to increased urbanization upstream. Efforts are being made to adapt for the new land use and still account for water quality and habitat. University of Dubuque students and faculty are



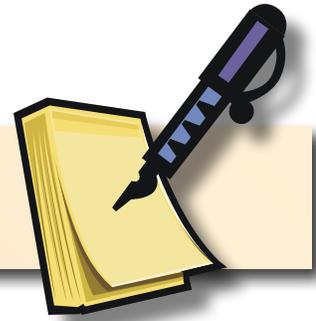
*Point of interest along Catfish Creek
(photo by Dean Mattoon)*

engaged in research to estimate and measure impacts of "daylighting" a portion of the stream that currently runs underground through a large piping system. "The original goal was to divert the water quickly and get it out of sight," said Mattoon. "Now we know there's not enough capacity for that system to hold what's coming from upstream when it rains. Plus, the habitat just isn't there. We're working to change that."

In 2011, the City of Dubuque will host yet another IOWATER introductory workshop, as well as an IOWATER bacteria workshop. Since 2009, Dubuque SWCD and the City established a 28-E agreement to co-fund monitoring efforts in the watershed. The SWCD has been collecting lab samples from the Catfish Creek watershed to test for *E. coli* bacteria. Bacteria results from snapshot events have caused local partners to become increasingly interested in gathering additional bacteria data. "We want local citizens to help gather additional data," said Schmechel. "Alone, we can only accomplish a small set of goals, but if we combine efforts—among the City, SWCD, Dubuque County, and citizen volunteers—we can cover a lot of ground and grow ourselves a pretty robust data set over time."

Volunteer viewpoints

... in their own words



Snapshot Sampling Results Lead to Further Investigation of Rock Island Sites

article and photos by Randy Heggen

In an effort to monitor water quality of streams and open channels, the City of Rock Island in the Quad Cities began participating in the IOWATER Scott County snapshot sampling program in May 2008. We chose 12 sites along wooded areas and commercial developments just before entering the Rock River, while other sites were located to monitor water we receive from neighboring communities. We felt that sampling the water upstream and downstream of our city could give us baseline information on water quality coming from other cities in the watershed as well as show the impact of our city on water quality.

On October 12, 2010, some of our IOWATER snapshot sampling results were elevated compared to previous results. A few days later a resident called to report "suds" in the stream during a recent rain event. A field investigation was conducted to locate the source of the suds. It was a challenge to follow the sanitary sewer line in the wooded area that meandered along the open channel. Approximately 1,200 feet into the wooded ravine some debris found in the stream confirmed our suspicion that a breach of the sanitary sewer line had taken place. We did find a section of exposed pipe due to 50 years of erosion carving into the ravine, putting the sewer line in a vulnerable state. Dye testing was necessary to find the actual point of the break allowing sewage to leak from the pipe. Our engineering staff

was informed of the problem and a contractor met with us to formulate a plan to gain access to the remote area to allow repairs. Several sections of pipe were replaced to repair the breach that had occurred. The ravine borders Black Hawk State Historic site. Our concerns included limiting the trees removed to gain access to the problem area. Steps were taken to restore and stabilize the steep slopes in the ravine. We currently monitor twice a year but plan to double sampling efforts in the future.

Our participation in the snapshot sampling events allowed us to establish a baseline for water quality and monitor potential problems.

The fact that sampling results pointed to a breach in a sanitary line was very helpful to us.



Top: Breach in sanitary sewer line
Bottom: Stream banks restored after breach fixed

Four Haiku

by Mark Heuer

Elemental

H to the two oh.
Water. Clear gold. From the sky.
Good for you and me.

Crop Science

Rain enters the soil.
Infiltrates, then percolates.
Water for the corn.

Erosion

Splashing on bare soil,
Rain in the spring leaves a mark.
Bruises heal slowly.

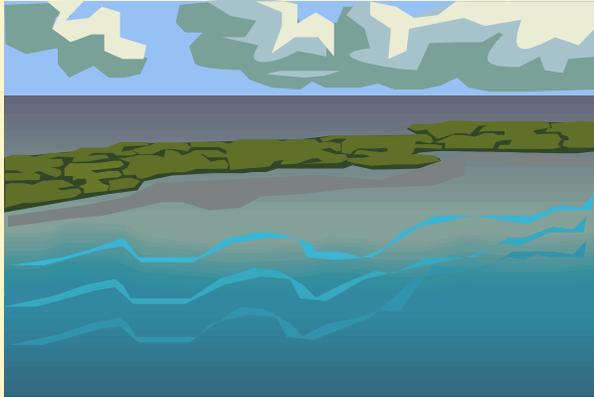
Trickle-Down Effect

Denied the pavement,
Water moves into the soil.
Hello, aquifer!

QUIZ

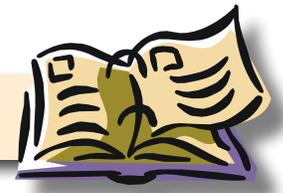
What do you know about lakes?

1. If you dive to the bottom of a deep lake in the summer, the temperature of the water will be
 - a. The same at the bottom as at the top
 - b. Colder at the bottom than at the top
 - c. Warmer at the bottom than at the top
 - d. None of the above
2. Lakes in Iowa were formed by
 - a. Glaciers
 - b. Putting dams on rivers or streams
 - c. Past river channels
 - d. All of the above
3. The Secchi disk was invented in 1865 by a scientific advisor to the Pope.
True or False
4. How many reservoirs in Iowa were built by the United States Army Corps of Engineers to control floods?
 - a. 2
 - b. 3
 - c. 4
 - d. 5
5. If all the public lakes in Iowa were put together, would the area be **bigger** or **smaller** than Story County?
6. What is the biggest pollution problem for lakes in Iowa?
 - a. High water temperatures
 - b. Toxic chemicals
 - c. Too many nutrients (nitrogen and phosphorus)
 - d. Too much trash
7. Which of the following is **not** an invasive species found in Iowa's lakes?
 - a. Round goby
 - b. Brittle naiad
 - c. Eurasian water milfoil
 - d. Zebra mussels
8. The normal range of pH levels in lakes monitored in Iowa is between 7 and 8.
True or False



Answers at the bottom of page 7.

IOWATER 2011 Workshop Schedule



Introductory Workshop

To register for a workshop, contact the appropriate facilitator listed below or download a registration form from the workshop section of the IOWATER website at www.iowater.net.

Location	Date and Time	Local Facilitator
Sac County Conservation Center, Sac City	April 8 5:30–9:30 p.m. April 9 8:00 a.m.–noon	Tom Duncan Sac County SWCD 404 Morningside Dr Sac City, IA 50583 712-665-2822 • tomd@hancockconcrete.com
Horseshoe Bend, Dickinson County	May 14 8:30–4:30 p.m.	Steve Anderson Dickinson County SWCD 2412 17th Street Spirit Lake, IA 51360 712-336-3782 • steven.r.anderson@ia.nacdnet.net
Swiss Valley Nature Center, Dubuque	May 23 5:30–9:30 p.m. May 24 5:30–9:30 p.m.	Dean Mattoon 50 W 13th Street Dubuque, IA 52001 563-589-4202 • dmattoon@cityofdubuque.org
Polk City Community Library	June 4 8:30 a.m.–4:30 p.m.	Sean McCoy Polk County SWCD 1513 N Ankeny Blvd, Ste 3 Ankeny, IA 50021 515-964-1883 • sean.mccoy@ia.nacdnet.net
Mitchell County Nature Center, Osage	June 18 8:00 p.m.–4:00 p.m.	Mary Jo Burkgren 18793 Hwy 9 Osage, IA 50461 641-832-7246 • maryjo@osage.net
North Liberty Community Center	June 25 8:30 a.m.–4:30 p.m.	Dave Rattliff PO Box 2642 Iowa City, IA 52240 319-430-3586 • oldmanscreek@qwestoffice.net
Gilbertson Nature Center, Elgin	August 13 8:30 a.m.–4:30 p.m.	Paul Berland Northeast Iowa RC&D 101 E Greene Postville, IA 52162 563-864-7112 • pberland@northeastiowacrd.org
Prairie Winds RC&D, Garner	August 20 8:30 a.m.–4:30 p.m.	Mark Schutt Prairie Winds RC&D 255 Hwy 69, Ste 2 Garner, IA 50438 641-923-3606 • mark.schutt@ia.usda.gov
Izaak Walton League, Vinton	October 1 8:30 a.m.–4:30 p.m.	Mike Schmitz 5100 Spencer Dr SW Cedar Rapids, IA 52404 319-396-8831 • ike-mike@msn.com

Bacteria Workshop

To participate, you must be a certified IOWATER monitor.

Location	Date and Time	For More Information and To Register
Prairie Winds RC&D 255 Highway 69 Garner, IA 50438	March 26 8:30 a.m.–12:30 p.m.	Visit the IOWATER website at www.iowater.net .

Quiz Answers: 1. b; 2. d; 3. True; The inventor of the Secchi disk was Fr. Pietro Angelo Secchi who was asked to measure the transparency in the Mediterranean Sea; 4. c; 5. smaller; 6. c; 7. a; 8. False; The normal range is between 8.2 and 8.8.

IOWATER

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QUIZ
What do you know
about lakes?

Project **AWARE**

Volunteer River Cleanup
Turkey River Watershed
July 9–16, 2011

Volunteer for a day, a week,
or anytime in between!

www.iowaprojectaware.com

