Fall 2010 Newsletter 2010-2

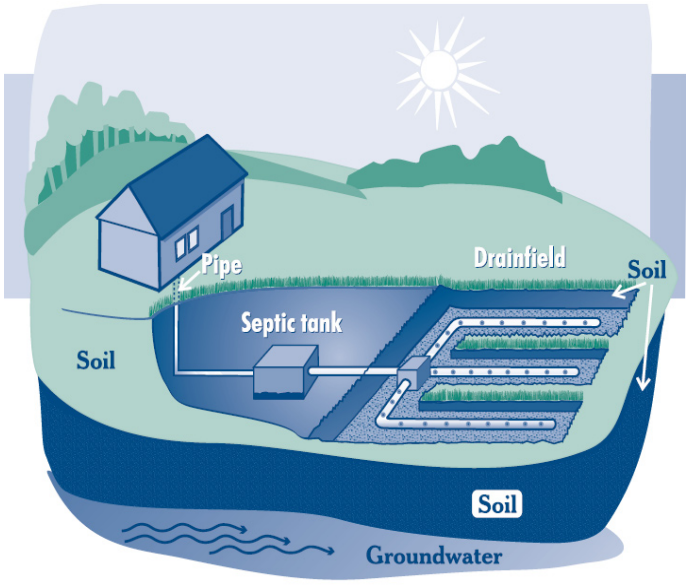
IOWATER

Volunteer Water Quality Monitoring

Iowa's Time of Transfer Septic System Inspection Program

by Dan Olson, Private Sewage Disposal Program, Iowa DNR

For the people in Iowa who are not served by a city sewer system, the responsibility to properly treat and dispose of their wastewater lies with the homeowner and their septic system. Approximately 100,000 septic systems in Iowa, or about one-third of the total, have failing or inadequate septic systems that do not properly protect the waters of the state from pollution. In 2008, the Iowa Legislature passed Senate File 261 to require a septic system inspection at the time of sale for properties without city sewer. The purpose of the law is to systematically eliminate illegal or failing septic systems across the state. Illegal septic systems produce large quantities of bacteria and organic pollutants that threaten the quality of Iowa waters.



Schematic of a typical septic system from A Homeowner's Guide to Septic Systems, 2005, U.S. Environmental Protection Agency, EPA-832-B-02-005, 18 *p.*

The law requires that every building served by a private sewage disposal system (septic system) have that system inspected prior to the deed transfer for the property. Inspections are done by Iowa Department of Natural Resources (DNR) certified inspectors. The certification process helps ensure uniform inspection procedures statewide. Counties cannot have different regulations regarding time of transfer inspections. During an inspection, an inspector will uncover the lids to the septic tank and also uncover a small portion of the seepage field or sand filter. The system will be tested for its ability to accept water and to gauge the overall condition of the system. The tank will be pumped and inspected. The main concern is that the system has a septic tank and some sort of working secondary treatment (e.g., seepage field, sand filter or other approved device). If the system has both of these and it functions the day of the inspection, the system will pass inspection. The septic system does not have to meet today's sizing requirements in these cases. If the system is creating a public health or environmental problem it will require repair or replacement. Systems with no secondary treatment (i.e., pipes to the ditch or a tile) automatically fail inspection. These types of systems are illegal and are not grandfathered.

(continued on page 3)

Long-term Monitoring proves crucial to identifying problems in Story County

IOWATER volunteer Erv Klaas has been doing monthly monitoring at two sites on Squaw Creek in Ames, Iowa, for IOWATER chemical/physical parameters since November 2001. The two sites are located about 1.5 miles apart.

In early 2004, Erv began *E. coli* bacteria monitoring. After 6 years of *E. coli* monitoring Erv had a good understanding of what was normal for his sites. So, when he sampled in September of 2009, he knew something was different with the downstream site. When he poured his water sample onto the three downstream bacteria plates, they would not solidify and turned a solid dark color. The plates from the upstream site, however, solidified and reacted similarly to past samples from that site.

Concerned about these results, Erv contacted IOWATER staff to tell them about the strange bacteria samples. IOWATER staff had never seen bacteria plates react like this, so they contacted the maker of the bacteria plates, Micrology Laboratories. Micrology Laboratories requested that Erv send in the downstream plates for further investigation and determined that the samples submitted by Erv were heavily contaminated with fecal bacteria. Staff at the laboratories subsequently determined that *E. coli* levels approached 9 million Colony Forming Units/100 milliliters (CFU/100 ml). The *E. coli* bacteria water quality standard for Iowa's surface waters is 235 CFU/100 ml.

Staff at the City of Ames Public Works Department were then contacted and informed of the elevated *E. coli* bacteria at the downstream site. Erv shared the results of his monthly monitoring at both sites to show the City of Ames staff that this was a highly unusual result for this site. The City of Ames staff agreed and investigated a storm pipe just above Erv's downstream site. The Ames crew found sewer odors and decided to do dye testing and use a camera to investigate the storm sewer line and a sanitary sewer line directly above. A crack and hole were found in the sanitary sewer line, and sewage was leaking into the storm line below and discharging to Squaw Creek.

The City of Ames quickly remedied the problem and Erv's subsequent monitoring suggested that bacterial levels had returned to normal. However, in late September 2010, Erv once again discovered elevated bacteria levels at his downstream site. Coincidentally, Jim Colbert, leader of the Skunk River Navy and IOWATER volunteer, was conducting a river cleanup on Squaw Creek with a group of students from Iowa State University during this same time period and discovered a broken sewer pipe that was discharging to Squaw Creek above Erv's site. Thanks to reports from volunteers and quick action by the city, this most recent sewer pipe breach has also been repaired.

If Erv had not been monitoring his sites regularly, these problems may have gone undetected. Erv's regular monitoring and knowledge of normal conditions for his sites, coupled with the City of Ames' willingness to investigate and address these issues, allowed these problems to be fixed.

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To transfer a property with a septic system, a seller needs to have an inspection and attach the inspection sheet to the groundwater hazards statement. The groundwater hazard statement is required for all property transfers in Iowa and identifies any potential environmental problems on the property. There are several exemptions to the inspection requirement that were written into the law. Those include father-to-son transfers, estate transfers, septic systems installed within two years, foreclosed properties, and buildings that will be demolished. Contact the DNR or your county sanitarian for more information about exemptions.

Untreated sewage from an illegal septic system. Photo by Iowa DNR.

Since the time of transfer septic system inspection program began July 1, 2009, nearly 7,000 inspections have been conducted, and 2,000 septic systems have been replaced. Counties have reported a 25% increase in the number of construction permits issued for septic systems. While every new program experiences growing pains, this program is certainly achieving its goals. Another DNR program, the Onsite Wastewater Assistance Program (OSWAP), provides low interest loans for septic systems to qualifying individuals. The buyer of an existing home in an unincorporated area can get a long-term, low interest rate loan to install a new septic system. For more information go to www.onsiteiowa.com.

Staff Comments...

Kids Say the Darndest Things……

One of the most enjoyable aspects of working with the IOWATER program is working with the youth of our state. Over the past year, IOWATER has grabbed onto the notion that kids need to experience our water resources to really understand them, and we've been involved in some cool new projects to help make this a reality.

In May, we worked with "Iowa River Call" and Johnson County Conservation to bring 4th graders from Hills Elementary School and Mark Twain Elementary School (Iowa City) to River Junction on the banks of the Iowa River to explore the river through poetry, songs, and observations of wildlife and water.
In July, we partnered with the DNR River Programs and Iowa Rivers Revival to get urban kids outdoors and to learn paddling skills and foster river awareness. For most of these kids, these experiences were the first time they have ever spent time near a stream – enjoying the calming influence of running water, getting a little muddy, and yes, trying out the port-a-potties. For the adults in the group, watching the sense of wonder and fascination on these kids' faces is truly priceless.

The success of these programs depends on the willingness of adults to volunteer their limited time to mentor and share their knowledge with these kids. We hope that you consider getting involved with these or other youth-oriented projects – the future of Iowa's water depends on it.

Mary Skopec
IOWATER Coordinator

Volunteer viewpoints
. . . in their own words.

Iowa Rivers Revival Gets Urban Youth onto the Water

article and photo by Robin Fortney

On three Saturdays during the summer of 2010, ten urban youngsters from Des Moines learned how to become River Rascals. Iowa Rivers Revival piloted the River Rascal program in 2009 with Children and Family Urban Ministries (CFUM) as a way to teach kids paddling skills and the importance of river safety, as well as inspire a conservation mind-set.

The 2010 program began with two classroom sessions that addressed watershed concepts, river values, river geography and river etiquette. The outdoor session was held at Chichauqua Bottoms Wildlife Area in Polk County and included a nature walk, netting invertebrates, paddling instruction, bird watching, and exploring the old Skunk River meanders via canoe. Rains came and plans to paddle a local river and participate in a river cleanup were scrapped due to high river levels. The last sessions were moved to still water venues. One session was held at Lake Ahquabi State Park. The kids participated in exercises to build their paddling skills, explored the lake perimeter via canoe, and participated in water monitoring with IOWATER staff. The final session was held at Big Creek State Park. The session included paddling along the lake edge, swimming, and several art and music activities with singer/songwriter/artist Chad Elliott, including inventing lyrics to a blues tune about being River Rascals.

At each session, the children were paired with experienced adult paddlers who encouraged the development of paddling skills and shared enthusiasm for outdoor fun and awareness. At each day's end, the kids wrote and drew pictures in their journals to help remember their experiences. With this outreach program, Iowa Rivers Revival seeks to encourage young river stewards to develop a lifelong connection with the outdoors and help mentor other young paddlers. As CFUM's Janelle Mueller noted, "You are making a difference in these kids' lives."

Robin Fortney is a board member for Iowa Rivers Revival, founder of Central Iowa Paddlers and a certified IOWATER volunteer. The youth were able to participate in this activity thanks to their leaders at CFUM, staff from DNR's IOWATER and River Programs, and experienced paddlers from central Iowa.

"You are making a difference in these kids' lives" **– Janelle Mueller**

Camp Stories from an Iowa River

article and photos by Crystal McCoomb

A hundred river miles traveled in a week on the Nishnabotna; we found tires, car models from the '50s, and lots of plastic stuck on tree limbs. College buddies, Jane Clare and I didn't have a lot of experience canoeing and hadn't ever paddled together. This was finally our chance, and we embraced it with gusto, if not grace, ready to see what things we could around each new bend and under the open sky.

Crystal (right) with Jane Clare.

Paddling upstream against the current for a piece of plastic stuck in some branches when the river is high isn't that easy to do. Doing it multiple times in a day or in an hour is even harder. We learned how to get things out of strainers (tree branches hanging in the water) by coming up around behind them in the water that is more still and then ferry back out into the current once we were finished.

After a few days of paddling together, Jane Clare and I decided to try canoeing with other people for a change. Both the older men we ended up with for the day told us we didn't have to paddle if we didn't want to, and we both asked ourselves, "Why didn't we think of doing this earlier?!" In this way we were both able to practice river cleaning with people who had participated in AWARE before and knew what they were doing. So, we happily floated down the river, little by little, picking up trash along the Nishnabotna for a cleaner tomorrow.

What I remember as Cicada Campsite, the wonder of the outdoors especially shone. Beside our pitched tent in between trees at least twenty cicadas were soaring and diving. Jane Clare crept to sit right in the middle of them, and we both watched as they continued to bob and weave like miniature airplane acrobats. Their wings, shining in the afternoon sunlight, buzzed right in front of our faces before stopping fast to grab mosquitoes above them.

This experience I will not soon forget, in seeing the countryside of America's Midwest up close with such a warm and kind group of people. Reveling in the natural sanctuary of God's creation, it was good not to only use and enjoy what has been given us, but learn how to be a better steward of it as well.

We'd like to hear from you, so **send us a note...**
about your IOWATER activities, thoughts, and ideas
...in your own words.

Wild Wetland QUIZ

1. What percentage of wetlands in Iowa has been drained?

- **a.** at least 30%
- **b.** at least 50%
- **c.** at least 70%
- **d**. at least 90%

2. It is possible to restore drained wetlands back to function as a normal wetland again. **True** or **False**

3. Wetlands found along Iowa's rivers provide several important functions. Which of the following is not one of them?

- **a**. Help to capture and hold excessive floodwaters received from the river.
- **b**. Slowly filter water that may percolate downward into aquifers.
- **c**. Add extra water to rivers which makes flooding worse.
- **d**. Provide important habitat for fish and wildlife.

4. Which of these plant species found in Iowa's wetlands is desirable and native?

- **a.** Reed Canary Grass
- **b**. Marsh Marigold
- **c**. Purple Loosestrife
- **d**. Eurasian Water Milfoil

5. Most of the salamander species found in Iowa breed in temporary ponds throughout the month of October. **True** or **False**

6. Waterfowl typically find the most food in which type of wetland during their fall and spring migrations?

- **a**. Permanent Wetlands
- **b**. Temporary/Seasonal Wetlands
- **c**. Fen Wetlands

7. Most of the fen wetlands found in Iowa are considered "rich" fens, meaning the pH of the water within them is usually around what range?

- **a**. 4.0–5.0
- **b**. 7.0–8.0
- **c**. 9.0–10.0

Answers on bottom of page 7.

Volunteers Muscle 9 Tons of Trash from Nishnabotna River

Many Iowans still gauge a day's work by the dirt found under their fingernails. For Project AWARE, which stands for A Watershed Awareness River Expedition, volunteers add the dirt from ears, toenails, and every crack and crevice in between, and it makes for one incredibly successful day.

This past July, 223 people participated in the eighth annual Project AWARE, traversing more than 100 miles of the West and East Nishnabotna rivers, removing more than 9 tons of trash along the way. By the end of the week, this flotilla of aquatic garbage men, women, and children had plenty of dirt – and river trash – by which to measure their work.

As a newbie to Project AWARE, Rose Danaher of Ames volunteered the entire week. "This was my very first AWARE and I can promise that I will be back for more – what a fantastic way to get involved!"

Project AWARE would like to extend a sincere and heartfelt thank-you to all those who volunteered to clean up the river and to all those who made it possible.

For more infomation about Project AWARE, its sponsors, and plans for the 2011 trip, scheduled for July 9–16, please visit www.iowaprojectaware.com.

"Project AWARE is the greatest working vacation experience around...good for your muscles and soul." – Barb Wolling

Project AWARE Wins National Award
2010 Soil and Water Conservation Society Merit Award

The Soil and Water Conservation Society honored Project AWARE with a Merit Award at a ceremony held on July 20 in St. Louis, Missouri. The Merit Award is given in recognition of an outstanding activity, product, or service by a group, business, corporation, or organization that promotes the conservation of soil, water, and related natural resources. **Congratulations Project AWARE volunteers!**

IOWATER *action!*

Press releases, events, & news articles involving* IOWATER *monitors – Many thanks to all of you for your continued efforts.

Story County – Congratulations to Lloyd and Gaylan Crim for receiving the 2009 Olav Smedal Conservation Award from the Ames Izaak Walton League. The award seeks to honor those who, by their actions or communications, have done the most to accurately present to the public of central Iowa excellence in conservation of natural resources and outdoor pursuits representing the highest standards of ethics and sportsmanship. Lloyd and Gaylan are longtime IOWATER volunteers, who also volunteer their time with the Iowa DNR Trumpeter Swan Restoration Program, Central Iowa Prairie Network, Story County Conservation Board, and the Squaw Creek Watershed Council. The Crims received the IOWATER Volunteer of the Year Award in 2005.

If we missed your happenings, please call or email Jackie Gautsch with an update.

Answers to Wild Wetland Quiz: 1. d; 2. True; 3. c; 4. b; 5. False (Most salamander species in Iowa breed in March or April); 6. b; 7. b

IOWATER

Iowa Department of Natural Resources
presents the

2011 RIVER of WORDS®

Iowa Environmental Poetry & Art Contest

for Student ages 5-19 in grades K-12

2010 IOWA WINNER – Grades K-3 ART
Franky by Coby Adams age 8 Dubuque, Iowa

DEADLINE for entries in the 2011 contest is DECEMBER 1, 2010

For more information and entry forms, visit our web site at **www.iowadnr.gov/row/**
Inquiries can be sent to riverofwords@**dnr.iowa.gov**