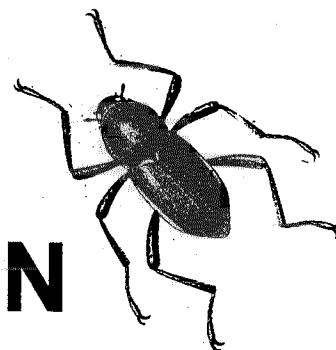




THE IOWA CITIZEN MONITOR



VOLUME 2, NO. 1

Winter 2001

The Building of Credibility

Rich Leopold – IOWATER Coordinator

The IOWATER program is growing fast and going through the excitement and pains of adolescence. As this effort matures, with much diligent attention to the details, the credibility and integrity of our program and the people involved is becoming apparent.

Last year at this time, the IOWATER Advisory Committee was struggling with focus and the overall direction of the program. Many people from many different agencies and groups, those folks we describe as having the "fire in the belly," took the time and energy to build a firm foundation of mission and common goals under the IOWATER program. Our current success is based on this work.

Next came this last summer's Watershed Tour 2000 – IOWATER's 18 workshops across the state training more than 500 Iowans at Level 1 monitoring. Using local word of mouth and grassroots efforts from existing groups and individuals, these trainings met with incredible success. We witnessed competent, dedicated, and serious volunteers and professionals give of their time and energy to attend the training.

IOWATER's next stage of development is what I would call "the rubber hitting the road" stage. Within a few short months, we have registered over 350 monitoring sites with over 1,000 assessments being filed on our Internet database! It's really happening!

This brings us to the present. Think back to the time when as you matured into an adult (longer ago for some of us than others) the struggles and sometimes assertiveness that was necessary to be recognized as a real and valuable person? Perhaps this is a fitting metaphor for IOWATER's current stage of development.

Many state and federal agency personnel are beginning to notice IOWATER. Comments I hear include words like "highly motivated" and "organized." Most upper level decision makers are very supportive of what is happening, while others (a small minority) need more convincing.

(Continued on following page)



Activities this winter are focusing on credibility and sustainability. Here's a sampling of what we're up to:

Credibility

- Education of upper level policy makers within state government as to what IOWATER is and isn't. Included is our soliciting input from these folks on how to make our program a better tool for their work.
- Informing state legislators and the Governor of our progress and concerns.
- Developing a formalized Quality Assurance Project Plan (QAPP) with the Iowa Dept. of Natural Resources and the U.S. Environmental Protection Agency (EPA).
- Evaluation of all IOWATER materials and methods and making necessary changes (i.e., be on the lookout for a new phosphate test this spring!)

Sustainability

- Arranging next season's Level 1 trainings statewide and development of Level 2 methods and materials.
- Hiring of one additional full-time and two part-time staff.
- Formation of IOWATER as a separate non-profit organization with multiple stakeholders and funding sources.
- Forming ties within the national volunteer monitoring framework, including the newly formed Central States Volunteer Monitoring Network.

These points will make up my winter's work! As I hope is evident, your actions are being noticed and your voices are being heard! I encourage you to continue to enter your data, be credible in your activities as they relate to IOWATER, and don't forget to enjoy the natural world you are striving to protect. In the words of Edward Abbey:

***"Do not burn yourselves out.
Be as I am –***

***a reluctant enthusiast,
a part-time crusader,
a halfhearted fanatic.***

***Save the other half of yourselves
and your lives for pleasure and
adventure."***

Peace be to you and yours this holiday!



What are the Professionals Monitoring?

You can now answer this question for yourselves! A new web page for Iowa's Ambient Monitoring Program is up and running at www.igsb.uiowa.edu/water/. The site includes information on the State of Iowa's stream, beach, lake, biological, and city monitoring, along with maps of monitoring locations. Graphs of current data and historical data are available as well.

Results from our IOWATER sites compared to state monitored sites (16 of them monitored since 1986), are available on the website on the link to Water Quality Data. This link will actively compare our data for nitrate, dissolved oxygen, phosphate, pH, and water temperature. In the near future, these will included parameters that will be measured as part of Level 2 IOWATER training, including fecal coliform bacteria and ammonia-nitrogen.

Also in the near future, all of the data from the ambient monitoring program will be available through this site in a publicly accessible database.

IOWATER *Action!*

Monitors in the Water

Recent recruitment events and/or press releases organized by IOWATER monitors have taken place in:

- Bremer County - thanks to Tammy Turner of the Bremer County Conservation Board.
- Jones County – thanks to Jerry Willer and the rest of the Mineral Creek Watershed IOWATER volunteers.
- Des Moines County – thanks to Emily Cook and Philip Hayes of the Flint Creek Water Quality Testing Group - Flint Creek Advisory Board.
- Jasper County – thanks to Mark Wagner of the Jasper County Conservation Board and Keri Batterson of the Rock Creek Watershed Project (Jasper SWCD).
- Scott County – thanks to the Environmental Club from West High School in Davenport, their instructor Gary Abbas, and Jennifer Anderson of the Mud Creek Watershed Project (Muscatine SWCD).
- Mahaska County – thanks to Pete Eyheralde of the Mahaska County Conservation Board and the Mahaska Cty. Izaak Walton League.
- Taylor County – thanks to Karen Hensley of the Taylor County Chapter of Iowa's for Quality of Life.
- Boone County - thanks (again!) to Barbara Krumhardt (Boone SWCD).

If we are missing "happenings" you would like to see in this newsletter, let us know using the contact information on the return address portion of this newsletter!



IOWATER Level 2 Nearing Reality

Most of the homework establishing IOWATER Level 2 has been done!

Level 2 Basic Training. This 8-hour training session will include monitoring design, intro to Quality Assurance Project Plans (QAPP), restoration techniques, and data interpretation. Additional parameters will include ammonia, chloride, and E. Coli bacteria.

Level 2 Modules. Once an individual completes a Level 1 Workshop, they may take any or all of the advanced 4-hour training modules. The modules that will be offered in 2001 are Benthic Macroinvertebrate Indexing, Standing Waters Monitoring (Lakes, Ponds, and Wetlands), and Soil Monitoring. Technical workgroups are working on methods, materials and training schedules for this season.

Level 2 Certification. An IOWATER Citizen Monitor will be certified as Level 2 trained upon completion of Level 2 Basic Training and at least one Level 2 Module.

All Level 1 Citizen Monitors will be receiving a mailing by mid-late January as to dates and locations of all Level 2 trainings. This information will also be available in the spring 2001 edition of the Iowa Citizen Monitor. Stay tuned for more info!

Guest Editorial

Lofty Goals Achieved!

(by down-to-earth humans)

*Jenny Garvin – WQT Publicity,
Maquoketa River Water Quality Team*

The Maquoketa River Water Quality Team (WQT), sponsored by the Lake Delhi Recreation Association, has had an incredible year-and-a-half of productive life. Working to improve the water quality of the Maquoketa River and Lake Delhi in northeast Iowa, this group of volunteers from the lake and farm community has directed a spotlight on human and animal impact on our watershed, brought various Lake Delhi groups together for celebration and the sharing of information, and has rolled up their sleeves and gotten dirty!

Early on the WQT partnered with the Natural Resources Conservation Service, the Delaware County Soil & Water Conservation District, Iowa Dept. of Natural Resources (Iowa DNR), University of Northern Iowa, Iowa Waste Reduction Center, Maquoketa River Alliance, Limestone Bluffs Resource Conservation & Development (RC&D) and United States Geological Survey (USGS) to develop the Lake Delhi Restoration Project. Grant funds were received from the Recreation Infrastructure Fund. Objectives include:

- Conduct a diagnostic feasibility study (dredge study) of Lake Delhi
- Provide cost-share for erosion control and conservation measures on farmlands that drain directly into the lake
- Establish an IOWATER volunteer monitoring program for Lake Delhi and the surrounding watershed
- Provide information and education to lake residents, farmers, and all citizens in the watershed on good management practices on their own property.

The IOWATER Volunteer Monitors took on one of the dirty jobs. From May through October, a dedicated team tested nine sites twice a month for phosphorus, oxygen, turbidity, pH, phosphate, nitrate, nitrite, ammonia, air and water temperatures, and stream flow, while recording conditions such as rain, smell of the site (if any), and wind conditions. This may sound simple, but volunteers were challenged at times by obstacles which included weeds and bushes grown over the path to the stream, a bull in a pasture who didn't care for company, trying not to drop test equipment overboard at a lake test site, and trying to figure out how to hold an umbrella in pouring rain while testing!



This dedicated team was not disheartened. Their test readings have become a database vital to the health of our lake and its tributaries. We also have volunteers who were trained by USGS to collect sediment samples at a USGS gauging station, and a volunteer who collected bacteria samples at two popular swimming areas of Lake Delhi this past year.

A bonus reward for the monitors was an awards party at the end of this year's testing cycle. Certificates of Achievement were presented to all volunteers. Various awards include a Clipboard Award going to the team having completed the most data sheets, an IOWATER Award, The Monitor of the Year Award, The Muddy Foot Award, The Fecal Finder Award, and the Strong Arm Award recognizing the difficulty of collecting sediment samples from the USGS Manchester gauging station! The dirtiest job the WQT took on was the spring cleanup of the Turtle Creek road ditch. This huge crevice next to one of our most beautiful lanes around the Lake had over the years become clogged with old washers, parts of vehicles, and just plain junk. While snow cover in winter dimmed this affront to the eyes, the WQT knew drainage from snowmelt and rain could carry pollutants to Lake Delhi. One hundred volunteers, including 25 Boy Scouts, and many pieces of heavy equipment gathered together at the ditch and removed over 25 tons of metal in one day! This was not only dirty work; it was dangerous digging out rusty stuff from the undergrowth. Fortunately, no injuries were recorded. And you should see the pristine ditch now! Shrubs have been planted and the ditch's banks have been seeded to stop erosion.

The WQT also conceived and hosted the first annual (we hope) Lake Delhi Appreciation Week during the first week of July 2000. It included fireworks, pontoon tours for county agency staff helping them become more familiar with one of Delaware County's greatest assets, and a Lake Festival and Hog Roast at the Pavilion in Turtle Creek Park. This all day celebration included information booths by the Lake Delhi Fish Club, Iowa DNR (stream flow demonstration), Limestone Bluffs RC&D, Delaware County Sanitarian (septic system information), WQT

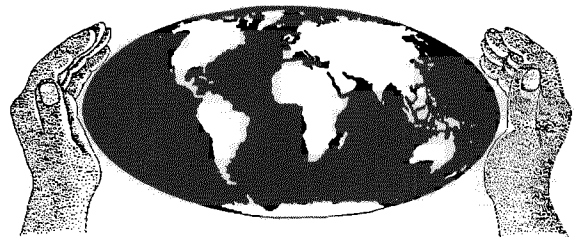
monitoring information, environmental posters by West Delaware school students, and the donation of wonderful folk music by the Cedar Falls group, Strange Rider. This proved an inspiring event for all!

In the works is the guidebook "Living On Lake Delhi" for lakeside property owners. Information will cover wells, septic systems, shoreline and construction site erosion, household hazardous waste and lawn care. Lake organizations and groups will be listed with contact names and numbers. If you think this is easy to put together, roll up your shirtsleeves and join us!

Patting ourselves on the back has been short-lived as we look to 2001. Our future goals and objectives include:

- Hiring a full-time coordinator for the Lake Delhi Restoration Project.
- Increasing membership on the monitoring teams...train new members
- Publishing and distributing "Living on Lake Delhi"
- Contacting and working with watershed land owners
- Maintaining cooperative activities with all project partners
- Publicizing our story
- Fundraising

All lofty goals. But with down-to-earth human involvement, the results will be a watershed worthy of the fish and wildlife it supports as well as the humans who partake of its beauty and enjoyment.



IOWATER Level 1 Workshops

...to learn, share and prepare...for ACTION!

What goes on at an IOWATER workshop? A variety of sessions, indoors and in the stream, will contain agenda items such as Water Quality in Iowa (The State of the Water Address), Stream Assessment Techniques, Credibility and Communications, Watershed Mapping, and Surfing the IOWATER Internet Site.

All workshops are open to any individual or group that is interested. Upon completion of the workshop, you will be a certified Level 1 IOWATER Citizen Monitor. The workshop is based on ten hours training, set-up comfortably over two days, exact times of which may vary depending on location. Contact the listed individuals for actual times. Workshop registration fee is \$25, which covers all program fees, meals, and testing equipment. This equipment includes: ♦CHEMetrics Dissolved Oxygen Kit and Phosphate Kit ♦Hach Test Strips – Nitrate-N and pH ♦Transparency Tube ♦Benthic Dip Net, Tub and Forceps ♦Aquatic Thermometer ♦Open Reel Measuring Tape ♦Laminated Benthic Guides ♦Streamkeeper's Field Guide ♦And more!

To register for any of the IOWATER workshops listed below, or for more specific registration information, please contact the individuals listed for the workshop you are interested in.

IOWATER 2001 Level 1 Workshops

	Date	City/Town	Contact	Phone	E-mail
Al	May 4/5	Montezuma	Renny Crawford	(515) 623-2547	powcocon@netins.net
Kathy	June 1/2	Montrose	Holly Sanders	(319) 463-7673	heronben@interl.net
Erika	June 5/6	Rock Rapids	Rochelle Ebel	(712) 472-2217	lyonccb@rconnect.com
Erika	June 8/9	Missouri Valley	Pam Cates	(712) 647-2785	mcates77@aol.com
Kathy	June 15/16	Center Junction	Michelle Olson	(319) 487-3541	jccb@netins.net
Erika	June 22/23	Perry	Chris Adkins	(515) 465-3577	adkins@iowalink.com
Kathy	June 29/30	Clarinda	Kevin McCall	(712) 542-5484	kevin.mccall@ia.usda.gov
Kathy	July 12/13	Manchester	Rick Lawrence	(319) 652-5104	rick.lawrence@ia.usda.gov
Erika	July 20/21	Storm Lake	Julie Sievers	(712) 262-4177	julie.sievers@dnr.state.ia.us
Kathy	July 25/26	Waukon	Lynn Ellefson	(319) 568-2246	lynn.ellefson@ia.usda.gov
Erika	August 7/8	Mason City	Todd Von Ehwegen	(515) 423-5309	tvonehw@co.cerro-gordo.ia.us

IOWATER – Making Waves of Difference Across Iowa – JOIN US!



1st Annual Water Monitoring Conference

Update on Iowa's Ambient Monitoring Program

March 29, 2001
Scheman Building
Iowa State University
Ames, Iowa

This conference will describe Iowa's ambient water monitoring program, summarize data being collected, and highlight significant achievements in the program. At this conference, you will learn about:

- **Program Overview** - Since 1999, support for Iowa's ambient monitoring program has increased dramatically. The monitoring will be described for both surface and groundwater resources.
- **Stream monitoring** - 60 interior stream sites were monitored monthly for chemical and physical properties. Learn the results from the monitoring and how the monitoring plan will change for 2001.
- **Lake monitoring** - 130 lakes were each sampled three times in 2000. Find out which lakes are being monitored, what parameters are being monitored, and what has been learned about the water quality of Iowa's lakes.
- **Beach monitoring** - 31 beaches were monitored weekly during the spring and summer of 2000 for bacteria. What were the results and what lessons have we learned?
- **Biological monitoring** - 40 potentially impaired streams, 20 reference streams, and 16 long-term monitoring sites were sampled for fish and benthic macroinvertebrates. Find out how biological organisms are being used to evaluate water quality across Iowa.
- **City monitoring** - Upstream and downstream sites at 10 cities were monitored. What impact does the urban environment have on streams?
- **IOWATER (Iowa's volunteer monitoring program)** - More than 500 volunteers participated in IOWATER in 2000. Learn about the data being collected and its accessibility on the Internet.
- **Public Database** - All data collected for the monitoring program will be available via the Internet. Find out how you can access and use the data.
- **Historical Trends** - 16 stream sites have been monitored monthly since 1986. What trends do the data show and what are typical concentrations in Iowa streams for the common parameters?

For more information, contact Lynette Seigley at (319)335-1598 (lseigley@igsb.uiowa.edu) or visit the conference web page at www.igsb.uiowa.edu/water2001.htm.

IOWATER Data

How Good Is It...Really?

Lynette Seigley – Research Geologist

There are now more than 1,000 data records in the IOWATER database, but how good is the data? It's now time to start comparing the IOWATER data to professionally collected data from the ambient network of stream sites.

During 2000, professionals monitored 60 Iowa ambient stream sites on a monthly basis. IOWATER data was compared to data collected from these sites for dissolved oxygen, pH, water temperature, nitrate+nitrite-N, and phosphate (see figures on opposing page). Keep in mind that IOWATER data is not from the same sites each month and IOWATER sites tend to be on smaller streams.

Box Plots

These "box plots" show data for the months of May through September 2000. A box plot is used to show the variability in data. The size of the box indicates the spread (or range) of the data with the longer the box, the greater the range. With box plots, you are looking for good agreement in the median values between the data sets.

Dissolved Oxygen (DO)

The DO measurements from IOWATER compare well to the ambient network sites. Since our DO kits can only measure 12+ mg/L as the highest value and the ambient sites use a DO meter that can measure higher concentrations, IOWATER's upper range of data is slightly constricted. Even considering this, our DO results are thumbs up!

pH

Most pH readings from the IOWATER database fall in the 8 to 9 range. Boxes for the IOWATER pH results are larger

than those for the 60 sites because the increments on our pH test strips are whole numbers (i.e., 5, 6, 7, 8, 9), while on the 60 ambient sites, a pH meter is used that can measure tenths of a pH level. The median pH levels for the 60 ambient sites range from 8.1 to 8.5.

Water Temperature

IOWATER water temperatures compare well and the trend similar to that seen in the 60 ambient sites. The water temperatures increased from May to August and declined in September. Differences between the two data sets may be a result of stream size.

Nitrate-N and Nitrite-N

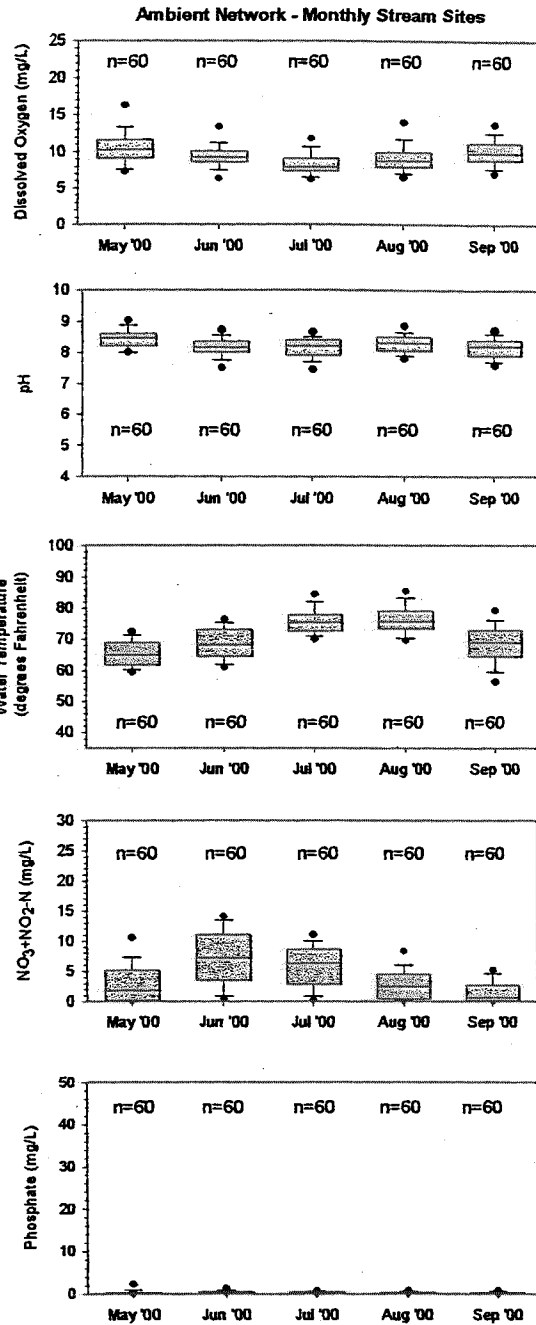
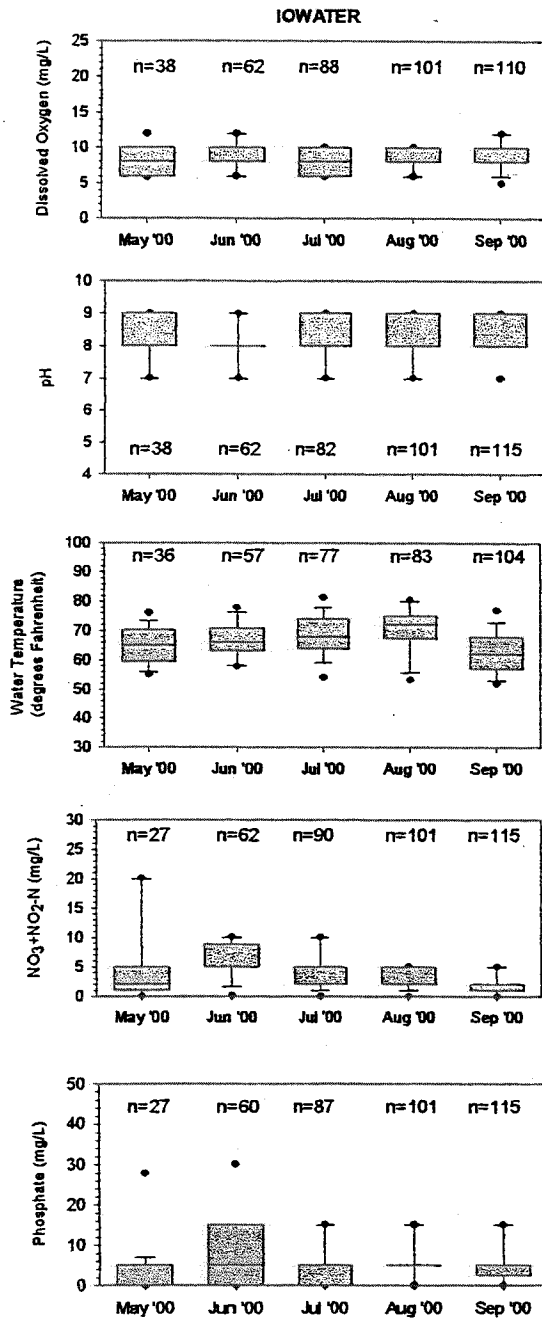
The nitrate+nitrite as N ($\text{NO}_3 + \text{NO}_2\text{-N}$) data from the 60 ambient sites show an increase in concentration from May to June followed by a decline the remainder of the summer. The IOWATER data shows the same trend.

Phosphate

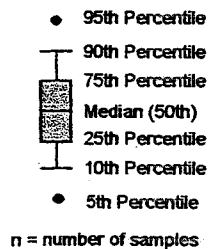
Data for phosphate illustrate IOWATER's need to improve the method of testing. Phosphate data from the 60 ambient sites tend to be very low, at concentrations of 0.1 to 0.4 mg/L. The IOWATER phosphate results are much higher. This is caused by the increments on our test strips being too large (0, 5, 15, 30, 50 mg/L) to measure concentrations normally found in Iowa streams. We plan to have a new phosphate method by this spring.

Bottom Line

Early comparison of the IOWATER data to the ambient stream network data looks very good! IOWATER's data does show a wider range in concentration for some parameters due to the methods being used. Results are showing (with the exception of phosphate) that we can have confidence in the testing methods being used for IOWATER. Thanks to your efforts, IOWATER appears to be producing "good" data!



Explanation of a Box Plot



Comparison of IOWATER and Ambient Stream Site Data (volunteer vs. professional).

*IOWATER data compiled from 390-399 separate assessments. Results compiled from May-September, 2000.

Sense

Lisa Slatten

I see

green, brown, blue
leaves, blades, stems,
dirt, sand, mud
sky, sky, sky
blue stretches endlessly

I hear

screaming of the insects
whispering of the wind
rustling of the trees
swishing of the cars
man's intrusion upon
nature's seclusion

I smell

the grass, the mud, the fish
the water
like the ocean,
summoning nostalgia
of summers spent on sun-drenched
sands

I feel

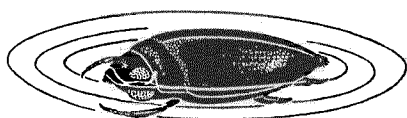
the mud cooling my heated skin
the ripples of the water
massaging my aching feet
the fish tickling my fingertips
the air brushing my face with
soothing caresses

I am

comforted by nature
by the silence, yet the noise
the singing of the bugs
the laughter of the flowers
the conversing of the trees
telling the secrets of life
to those willing to listen

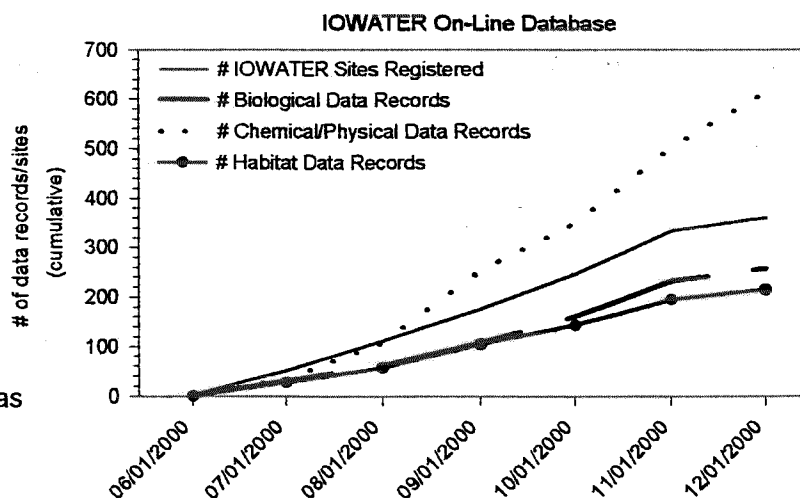
I am

This was created as part of a Marion High School Field Biology assignment on Sensory Writing. Instructor Dick Sloan uses Indian Creek and the Iowa Rivers Project in his classroom, which will soon be merging with IOWATER, stay tuned for further details!



IOWATER Monitoring Sites Activity (June–December, 2000)

*This figure shows only data sets entered as of 12/1/00 and is not inclusive of all IOWATER monitoring occurring.



iowater.net



Net Notes

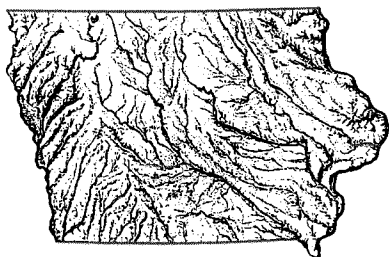
Lynette Seigley – Research Geologist

Map of IOWATER sites! A map showing the location of IOWATER sites is now available on the IOWATER web site in the IOWATER On-Line Database section. You can also access the map directly at: <http://gsbims.uiowa.edu/website/iowater/> With the map you can see the distribution of IOWATER sites across Iowa, identify sites and determine which IOWATER sites are in a particular watershed, zoom in to different areas of the state, and print a map of an area of interest. Currently, the map is not linked to water-quality data in the IOWATER database, but will be in the near future. Also available at this site is a "Tips" page to help you use the IOWATER map.

Extreme NW Iowa UTM Coordinates.

UTM coordinates for certain locations in extreme NW Iowa differ depending on whether they are read directly from a topographic map or using the Iowa Geographic Image Map Server. This part of Iowa is located in Zone 14, whereas the rest of Iowa is in Zone 15. The Iowa Geographic Image Map Server looks at Iowa as all being in one zone, not distinguishing between zone 14 and 15. If you are submitting UTM coordinates that have been read off a topographic map in Zone 14 (not off the Iowa Geographic Image Map Server), please let me know.

Iowa Geographic Image Map Server. The maps on the Iowa Geographic Image Map Server sometimes do not show features that are present today (new highways, new bridges, etc.). The reason for this is that the most current map for an area may be 10 years old or more, and the features were constructed after the map was completed.



Printing Your Maps. The maps in the Iowa Geographic Image Map Server can be printed. The maps will need to be resized to print on a single sheet of 8 ½ x 11 paper. To resize, on the left side of the screen is a view width and height box. Change the view width from 600 to 500 pixels, and change the width from 700 to 583 pixels. Click on Submit Changes. The map will be resized and will now print on a single page.

If you are using a Global Positioning System (GPS)...

To determine UTM coordinates, be sure your GPS unit is set to the UTM coordinate system to display NAD83, not NAD27. NAD refers to the North American Datum. NAD27 is a reference system based on surveys. The use of satellites has enabled greater accuracy of pinpointing any location on the Earth's surface. NAD83 represents an adjustment made to NAD27 using satellite data. Paper copies of the U.S. Geological Survey topographic maps are on NAD27, whereas the topographic maps on the Iowa Geographic Image Map Server are on NAD83. So is there much difference between NAD27 and NAD83? The X coordinate is the same, whereas the Y coordinate differs by ~200 meters.

IOWATER Sites starting with an 8. You may have noticed when viewing data that there are a few IOWATER sites beginning with an 8 rather than a 9. These are sites in the Upper Iowa River watershed that are located in Minnesota. Minnesota sites beginning with 899 are in Mower County, 845 are in Fillmore County, and 855 are in Houston County.

The stream isn't moving? Make sure to record all stream velocity measurements! When measuring stream velocity, remember to enter a value of "0" seconds into the database if your tennis ball did not move at all or if the tennis ball moved upstream of your transect. If "0" seconds is entered, a flow of "0" will be calculated for that particular spot on your transect.

Any Confusion? If you have questions or need help using the IOWATER database, contact Lynette Seigley at (319)335-1598 or lseigley@igsb.uiowa.edu.

IOWATER

Wallace Office Building

502 East 9th Street

Des Moines, IA 50319

515.281.3252, fax: 515.281.8895

www.iowater.net

