



## WATER QUALITY RESULTS FEATURED AT RIVER WATCH FORUM

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Over 300 students, teachers, resource managers, and interested citizens from Manitoba, Minnesota, and North Dakota gathered at the Alerus Center in Grand Forks in mid-March to share their latest findings about Red River basin waters. Findings from a few of the schools presented below provide a glimpse of the extensive and impressive water quality monitoring being accomplished by River Watch teams as they contribute to a better understanding of water quality throughout the Red River Basin.

- Win-E-Mac High School, monitoring sites on the Sand Hill River since 1995, have found one section of the Sand Hill River to consistently fall below the 5 mg/l threshold for dissolved oxygen which makes it an impaired water. Sites have been added above and below the impacted site to determine the spatial extent of the impairment. However, 2006 monitoring results showed dissolved oxygen levels being up but turbidity levels also rose dramatically. High algae levels were observed in 2006 which may explain both the higher oxygen and turbidity levels.

- The River Watch team from Climax High School illustrated the ongoing turbidity problems for the lower portions of the Sand Hill River, posing several reasons for this situation. They also hypothesized that the conservation measures in the New Farm Bill could have a major positive impact on water clarity and look forward to testing this hypothesis in the future.

- Stevie Camp of Bagley High School carried out an individual project to determine the connection between land use and the presence of fecal coliform bacteria—hypothesizing those sites with less vegetative buffers and easy access to animals would have the highest fecal coliform levels. Using LaMotte's ColiQuant EZ Kit, it was found that the only site that consistently exceeded the EPA guidelines for fecal coliform had a cattle pasture upstream from the sampling site.



*Win-E-Mac, Climax, and Fosston High Schools received awards for contributing 10 or more years of service to the River Watch program. Receiving the awards are (l to r) Bob Nephew, Karen Thorson, and Kristen Peterson respectively.*



*River Watch Partnership Awards were presented to the Red Lake Watershed District and Bois de Sioux Watershed District represented by (l to r) Jim Blix and Jon Roeschlein respectively.*

- Ulen-Hitterdal High School River Watch team found good water quality conditions overall for the sites they monitor on the Wild Rice River South Branch. Their Felton Creek site though had very low dissolved oxygen levels. This is likely due to natural conditions as the site is just downstream of a wetland complex with decomposing vegetation consuming oxygen combined with flat topography resulting in little physical mixing of the water and resultant low dissolved oxygen.

- Stephen-Argyle River Watch found variations at some sites from previous years due to the presence of beaver dams near two

sites. It is believed that dissolved oxygen levels may have been lower at these sites due to the lack of water movement. Turbidity levels were likely lower also due to sediment being able to settle out in the pools created by the beaver dams.

- Barnesville River Watch combined physical, chemical, and biological measurements to assess conditions upstream and downstream of the Whisky Creek Flood Damage Reduction project in the Buffalo-Red watershed. They found turbidity levels significantly higher at the downstream site—well beyond the threshold to be classified as being impaired. Biological monitoring of macroinvertebrates also indicated the downstream site to be of poorer water quality than upstream.

Each school at the Forum prepared a table-top display of their findings with a written summary of results and conclusions. Awards were presented to schools that did the best job in communicating their research and presenting their results in a scientific framework with a hypothesis, results, conclusions, and need for further study. The Gold awards went to Barnesville and Bagley; Silver awards to Climax and Ulen-Hitterdal; and Bronze to Fertile Home School and Walhalla, ND.

In addition to the school presentations, training was provided at concurrent sessions attended by all. Some of the sessions were conducted by students involved with a National Science Foundation project demonstrating use of modern technology to communicate results and information about our river resources. Session topics included using ipod technology for communications, making videos and books to highlight program features or issues, use of a new online data base, and tips on how River Watch can be used for future college and career options.

Voyageur Awards were also given to Ulen-Hitterdal and Barnesville River Watch teams in recognition of efforts that went above and beyond the normal monthly monitoring duties of a River Watch school, demonstrating the greater potential and contribution that River Watch can provide to a school, a community, and a watershed.

Ulen-Hitterdal River Watch, under the leadership of Vocational Agriculture Instructor Randy Zimmerman took the initiative to secure funding via grants and partnership with the Wild Rice Watershed District to purchase their own complete set of monitoring equipment to be able to monitor the upper portions of the South Branch of the Wild Rice River and its tributaries. Sites were selected in conjunction with both the Wild Rice Watershed District and Clay County

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### RRWMB MEETING HIGHLIGHTS

*At its regularly scheduled April meeting, the RRWMB:*

- Received a report from Naomi Erickson, Administrator.
- Received a report from Gregg Wiche, U.S. Geological Survey and authorized funding for a poster depicting the flood history of the Red River.
- Received a report from Dan Thul, Red River Coordinator.
- Received a report from Ron Harnack, Project Coordinator.
- Authorized retaining the services of Teamworks International, Inc. and LaBreche Murray for public information consulting services.

**MIDDLE-SNAKE-TAMARAC RIVERS WD**

The Middle-Snake-Tamarac Rivers WD reported on the Public Law 566 (Snake River Watershed) Project. The application process by the City of Warren has begun for a Letter of Map Revision (LOMR) from the Federal Emergency Management Agency (FEMA), and is expected to be completed in the summer of 2007. This will remove the city from the flood plain and also need for expensive flood insurance.

Although the project is not fully operational, during the spring flooding of 2006 the project is estimated to have saved the City of Warren and surrounding areas \$8.7M in economic damages.

**BOIS DE SIOUX WD**

The Bois de Sioux WD reported on the North Ottawa Project. The District has been developing Phase III for construction. Due to the limited available funding, the project was divided into two phases named IIIA and IIIB.



*North Ottawa holding water between pools B and C. (April 2, 2007)*

Bids were opened on Phase IIIA on March 27, 2007. The low bid was awarded to Riley Brothers Construction of Morris, MN with a bid of \$1,656,319.30. The engineer's estimate was \$1,997,962.11. Contracts have been signed and Phase IIIA construction will begin as soon as conditions warrant.

Approximately \$400,000 of work remains on Phase II with Midwest Construction of Marshall, MN. There is some grading work left on some of the contract along with all the permanent seeding.

It is possible that Phase IIIB could be bid yet this year depending on whether state funding is appropriated.

SWCD based on projects and monitoring needs of each partner. Sites were adjusted from the first to second year of monitoring that reflected a better understanding of local conditions and ongoing monitoring needs. The River Watch team presents their findings to resource managers from many agencies at the Wild Rice Watershed District Project Team meetings.

Barnesville River Watch, under the energetic leadership of Science Instructor Sheila Carlson, continues to build on a solid foundation laid in their initial years of River Watch. From the start they selected an ambitious network of sites covering many tributaries to the South Branch of the Buffalo River. Continually questioning what interconnections exist between these many tributaries, they are now up to 17 sites being monitored monthly. In their five years of monitoring, they are the only school to have reached the "500 Club"—with 510 individual samples taken at their many sites. But the quality of their monitoring is even more

impressive than the quantity. They meet annually with the Buffalo-Red Watershed District to present findings from their previous year, receive input from the Managers, and discuss plans for the next monitoring season. They are the only River Watch school involved in monitoring of macroinvertebrates and in 2006 volunteered to participate in a pilot project to evaluate different methods for citizen monitoring of E-coli bacteria. Students also have the option of taking River Watch for high school credit.

Partnership awards were presented to the Bois de Sioux Watershed District and the Red Lake Watershed District for their ongoing financial and technical support to the River Watch teams in their watersheds. This includes costs for substitute teachers and transportation costs to allow schools to do

their monthly sampling, attend Forums, and engage in other River Watch related activities. Both also provide River Watch teachers tuition support to attend the summer Red River and You Teachers Institute offered by the International Water Institute.

Following the Forum, six schools presented oral presentations the next day at the International Water Conference highlighting the excellent work that the schools are doing. Many well-deserved compliments were given to the schools for their contributions to monitoring and better understanding of watershed conditions in the Red River Basin. The River Watch Forum and awards are made possible through the planning and support of the International Water Institute and the Red River Watershed Management Board.

**CITIZENS INVITED TO PARTICIPATE IN RED LAKE RIVER RENDEZVOUS TOUR MAY 28 – JUNE 10, 2007**

Paddlers are invited to join the Red Lake River Rendezvous Tour—a recreational trek down the entire 193 mile length of the Red Lake River in northwestern Minnesota. "This tour is being held to celebrate the 40th anniversary of the Red Lake River designation as a canoe and small boat route. By highlighting the river resource, we hope to raise awareness about the opportunities for recreation and the need for more access and improvements along the route," says Gail Healy, chairman of the Red Lake River Corridor's Joint Powers Board.

Paddling enthusiasts are encouraged to join the trip for a few hours, a single day or even several days depending on individual experience and interest. Additional celebration events will take place during the tour in each of the communities found along the river. For more information and to sign up to join the tour, please go to [www.redlakerivercorridor.org](http://www.redlakerivercorridor.org) or contact Joe Courneya at the International Water Institute, (701) 231-6184.

*The next scheduled meeting of the RRWMB will be held at the Wild Rice Watershed District, Ada, MN, on May 15th, starting at 9:30 a.m.*

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