

February 2006 Water Quality Program Progress Summary

By: Corey Hanson

For: March 9, 2006 RLWD Board Meeting

Tile Drainage Study:

I gave a presentation on our tile drainage study at the 2006 Agricultural Drainage Workshop (the presentation you will see at today's meeting).

Past Meetings

- ❖ **February 3rd** – Red River Basin Monitoring Advisory Committee Meeting
- ❖ **February 21st** – Drainage workshop at the Moorhead Area Conference Center (Courtyard by Marriott).
- ❖ **February 22nd** – Envirothon planning meeting at the Penn. SWCD @ 10 am to review draft questions
- ❖ **February 27th** – Red River Basin Water Quality Team Meeting at the RLWD – Subject will be calculating sediment loads from ag fields.

Future Meetings/Events

- ❖ **March 13th** – River Watch Forum at UMC, presentation of NSF project at CHS School Board meeting
- ❖ **March 14th** – Water Quality Training Session, 9-4 @ UMC – I will be presenting on standard operating procedures and standard forms for field records and data entry.
- ❖ **March 15th** – Overall Advisory Committee meeting – will be giving presentation on TMDLs in the RLWD and on 2005 water quality projects
- ❖ **March 21st** – Flow Training Seminar
- ❖ **March 27th** – Red River Basin Water Quality Team meeting in Moorhead
- ❖ **March 28th** – RRB Buffer Initiative meeting in Detroit Lakes
- ❖ **April 5th and 6th** – Shallow Lakes Forum in Willmar
- ❖ **April 24th** – Red River Basin Water Quality Team Meeting at the RLWD – Red River Basin Water Quality Monitoring Network report, streambank erosion
- ❖ **April 26th** – Envirothon at Agassiz NWR. Jim will be presenting at the Aquatics station and I will be at the Current Events station this year. The theme for this year's Envirothon is "Water Stewardship in a Changing Climate."
- ❖ **June 26th** - Red River Basin Water Quality Team Meeting at the RLWD
- ❖ **July 24th** - Red River Basin Water Quality Team Meeting in Moorhead

River Watch

Jim has been assisting schools with data reviews in preparation for the River Watch Forum at the University of Minnesota Crookston. Jim and I will be attending the River Watch Forum on March 13th. The prospect of including Crookston High School River Watch in the National Science Foundation Grant funded “Understanding the Science Connected to Technology” program will be presented to the Crookston School Board on March 13th.

Clearwater River Habitat/Bioassessment

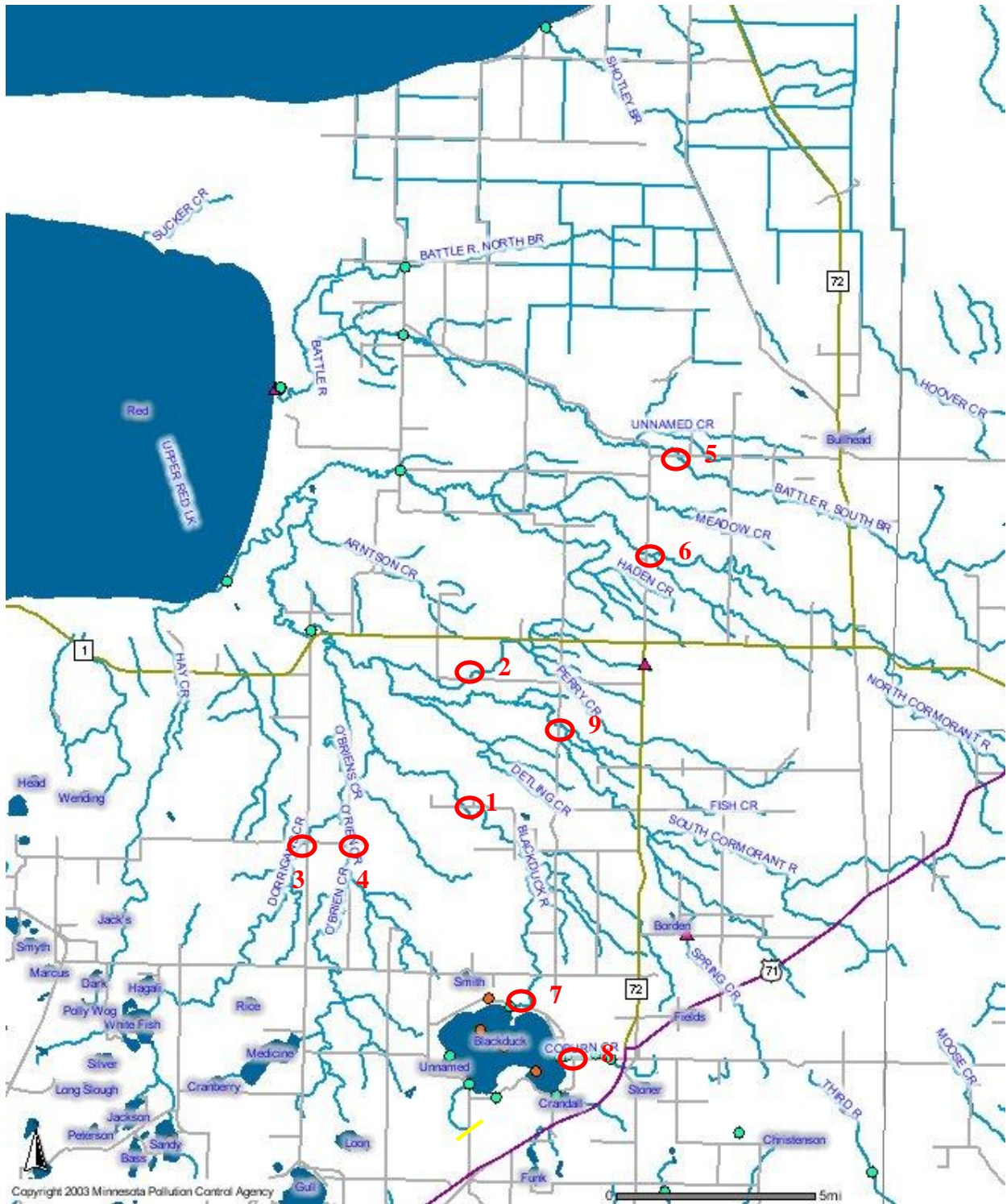
I began writing a report for this study this winter. The sampling for the study was conducted during the summer of 2003, but a report has been delayed because priority has been given to grant-funded projects (reporting and spending deadlines).

Fish and macroinvertebrates can be affected by the physical, chemical, and biological conditions within a stream. Therefore, bioassessments such as this one are useful for demonstrating which reaches of a stream or river are impacted by disturbance. They can show impacts (or lack of impacts) to a stream that water quality monitoring alone may not show.

The data collected for this project includes fish and macroinvertebrate sampling, habitat assessments, and physical assessments in the Clearwater River and its tributaries. It also involved zooplankton sampling, water quality sampling, vegetation mapping, and macroinvertebrate sampling within Clearwater Lake. The end product of data analysis will be three scores (habitat, fish, and macroinvertebrates) at each site. The fish and macroinvertebrate scores are referred to as Index of Biotic Integrity (IBI) scores. These are based upon the number of different species, amount of tolerant species, amount of intolerant species, and other “metrics.” Because this study will include one of the first (if not the first) macroinvertebrate-based IBIs conducted within the Red River Basin, I have done a lot of research into what has been done in other states and in southern Minnesota. I will need to choose which metrics to use in creating a macroinvertebrate score and then create a scoring system as well. There are also some macroinvertebrate samples that were not completed by the MN DNR lab, so I will have to sort and identify those in order to have a complete set of data. Although the reporting for this project is turning out to be more work than anyone would have expected at the beginning of the project, the process should be easier the next time that a study such as this is done because the methods, data analysis templates, and scoring systems will already be in place because of the work done for this project.

Other Notes

- ❖ Wrote questions for the current events station for the Envirothon competition that will be held at Agassiz NWR.
- ❖ Reviewed 10-yr overall plan and submitted comments.
- ❖ I was contacted by Chris Parthun of the Beltrami SWCD regarding monitoring within Beltrami County. I prioritized possible Beltrami County lake and stream monitoring sites. These are shown in the map on the following page. I would like to know how many sites the Board of Managers feels should be added to our monitoring program. I think that if the 6 highest priority sites in the watershed are sampled, the data will provide for a fairly thorough assessment of the streams in the watershed. The RLWD will monitor lakes in Beltrami County on a rotating schedule. The list of lakes was distributed at a previous board meeting. The RLWD will sample Buzzle and Blackduck Lakes in 2006 and 2007.



The combination of Red Lake Nation DNR data and data from additional sites monitored by us should allow for a reasonably thorough assessment. If I had to rank the sites...

1. Site #8 (fecal coliform)
2. Site #1 (can be used to assess reach from Blackduck Lake to O'Brien Creek)
3. Sites 2, 3, 4, and 9 – Assess reaches that cannot currently be assessed
4. Sites 5 and 6 – allow for a more reliable assessment of the upper reaches of these streams
5. Site #7 – This site could be used to see what is leaving the lake, but may not be necessary for assessment purposes if site # 1 is used. Interchangeable

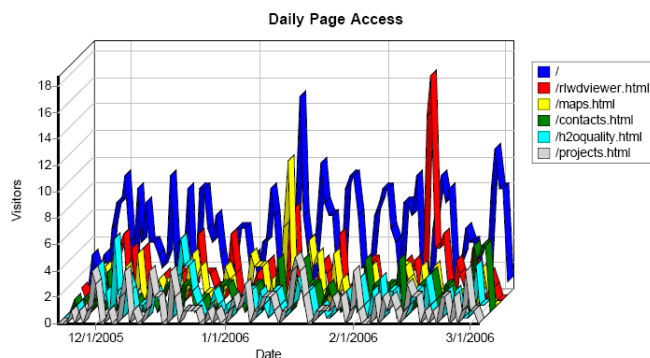
Hit Report for the RLWD Website

Brian Fischer of Houston Engineering sent me a report of visits to the RLWD website for the time period of 11/22/05 – 3/3/06. The website averaged 279 hits (or connections to our website) each day with a total of 28,473 hits during the three month period. There were 1,415 total visitors with an average of 13 each day. The home page had the most hits and visitors. The interactive mapping page was the most popular of the other pages on the website. The minutes page was the 13th most popular webpage with 47 visitors, just behind the presentations webpage (47) and just in front of the RRB Water Quality Reporting Handbook webpage (42). Other than map data for the interactive mapping webpage, the Water Quality SOP was the most popular file that was downloaded, followed by the statistical analysis and load estimation sections of the RRB Water Quality Reporting Handbook.

There were a lot of cases where people tried to access large files, but the download was incomplete (10-yr plan, complete text versions of other documents). This is probably because large files take a long time to download, especially on low bandwidth connections. This verifies that splitting documents into smaller sections to make them easier to download is worthwhile, but more of this is needed. Of the 4,742 hits for .pdf files (Adobe Acrobat documents), 3,632 of these requests were incomplete. I should examine the files that were most frequently incomplete and look at options for making the information more easily accessible. However, if there were 1,110 downloads of documents from our website in a three month period, maybe we are actually doing a decent job of providing information to the public.

Other noteworthy website observations:

- ❖ Most of the visitors were from the United States, but there were 84 visitors from Canada and 28 from China.
- ❖ There also were visitors from the United Kingdom, France, Germany, Colombia, Korea, India, Italy, Malaysia, Phillipines, Netherlands, and many more.
- ❖ There were visitors to the website from 50 different countries.
- ❖ California (94) was the state other than Minnesota (348) from which we had the most visitors. North Dakota was 4th with 59 visitors.
- ❖ The top ten most active cities on our website were
 1. Thief River Falls, MN
 2. San Diego, CA
 3. Saint Paul, MN
 4. Minneapolis, MN
 5. Fargo, ND
 6. Erskine, MN
 7. Calgary, Canada
 8. Denver, CO
 9. Fort Collins, CO
 10. Beijing, China



- ❖ Our water quality web page gets a relatively high number of hits. I should pay more attention to this page and utilize it better.
- ❖ Our presentations page also gets hits daily, so I should put more effort into keeping this page updated than I have done in the past.

