

Monthly Water Quality Report | June 2008

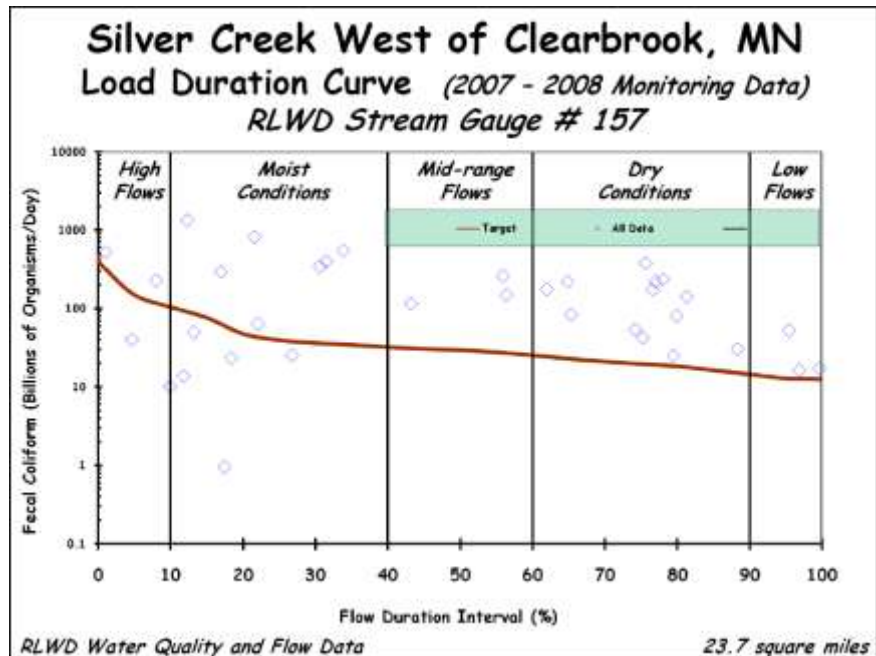
By: Corey Hanson, Water Quality Coordinator
For: July 24, 2008
RLWD Board Mtg.



Clearwater River Dissolved Oxygen and Fecal Coliform TMDL

Continuous dissolved oxygen monitoring continued into the month of June. An additional flow measurement was collected at the Lost River monitoring site #51. Most of the TMDL monitoring sites now have usable

rating curves. Any additional measurements would still be helpful in stretching or refining the flow rating curves. I continued work on the reports for each of the reaches. I also began entering data collected this year and got a start on creating flow and load duration curves for the E. coli/fecal coliform monitoring sites. The load duration curve for site #157, for example, shows exceedances of the standard during low and high flows, which indicates that there is something acting as a point source of bacteria in addition to the nonpoint sources.



There has been highway construction near the Spring Lake Outlet (beginning of the Poplar River). The culvert there has been replaced and appears to be at a more proper elevation so as to no longer prevent fish passage. I did find out that landowners may not see fish passage into the lake from the river may not necessarily be desirable if undesirable species are able to enter the lake.



Monthly Water Quality Report | June 2008

RLWD Long-Term Monitoring Program

Forty-one samples and/or field measurements were collected at the RLWD long-term monitoring sites in the month of June. The first round of district monitoring sampling and a portion of the second round were completed by the end of June.



Thief River Watershed Sediment Investigation

Five flow measurements were made during the month of June for this study. There were some high flow events during the month of June. Deployed Manta (continuous dissolved oxygen, turbidity, pH, specific conductivity, temperature, and water level) cleaning, data retrieval and calibration continued to be done at a two-week interval.

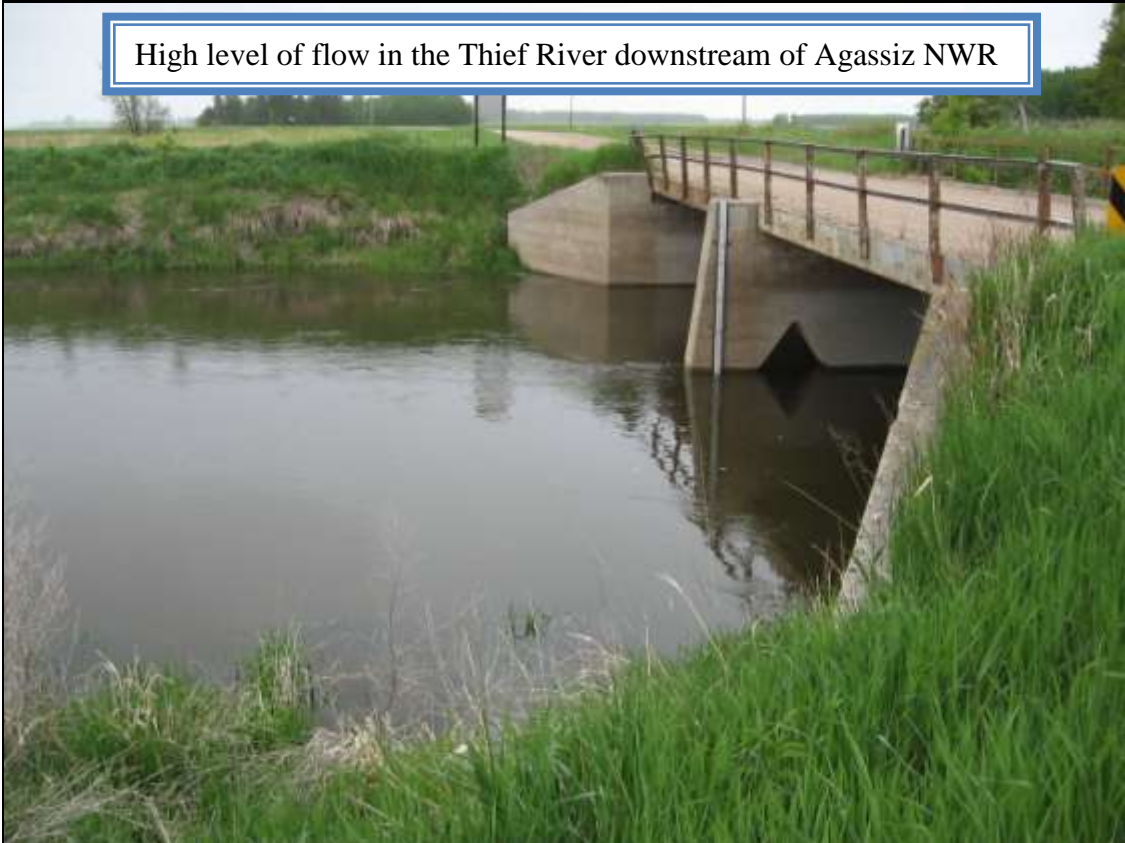
The USFWS continued to have reliability problems with their Eureka Manta sondes. A conference held with representatives of the company in order to address the issue.

Monthly Water Quality Report | June 2008

Sediment from ditch entering County Ditch 20 along 180th Ave NE



High level of flow in the Thief River downstream of Agassiz NWR



Monthly Water Quality Report | June 2008

Tile Drainage Study

There was an opportunity to capture data from a rainfall event that generated runoff in June. John Carlson checked on the Bachand site surface flow measurement structure to make sure it was working correctly after it was raised in May. Water was trickling underneath the structure instead of through it. He was able to fix this problem and get water flowing through the structure so that the surface runoff from the Bachand field can be accurately measured.



Other Notes

- I completed Revision 7 of the Standard Operating Procedures for Water Quality Monitoring in the Red River Watershed. The final edits included input from members of the Red River Basin Monitoring Advisory Committee.
- Cleaning, calibration, and data retrieval was done for the Project 60E monitoring equipment



Monthly Water Quality Report | June 2008

July and August Tasks

- Make significant progress on the Clearwater River Dissolved Oxygen and Fecal Coliform TMDL Study data analysis and reports.
- Provide information and data to the EERC for calibration of the SWAT model.
- Regularly maintain and calibrate continuous monitoring equipment that is deployed.
- Remove the Clearwater River TMDL Study continuous monitoring equipment and structures from the field.
- Collect some supplemental E. coli samples at select sites (782, 37) on the Lost River and on the channelized reach of the Clearwater River.
- Monthly maintenance of continuous stage monitoring equipment.
- Monthly maintenance of the Brandt Channel Outlet Restoration Project continuous stage and turbidity monitoring equipment.
- Collect a round of district monitoring samples when the rivers open up.
- Flow measurements
- Maintenance of continuous monitoring equipment once it's installed.
- TMDL E. coli sampling (2 sites in July).
- 3rd round of sampling at long-term monitoring and SWAG sites will begin in August

June Meetings and Events

- **June 23rd, 2008** - Red River Basin Water Quality Team Meeting at the RLWD, 10am
 - Civic Science (Molly MacGregor)
 - Reward farmers for working together and for innovative solutions.
 - Focus on vulnerable landscapes with best potential of response
 - Identify areas of biophysical vulnerability in those watersheds
 - Define appropriate management activities for those watersheds
 - Design intervention based on needs/capacity.
 - Monitor results and generate feedback.
 - Comments from meeting attendees:
 - The more business-like farming gets, the more likely that they will have to be treated like industry
 - Tax laws benefit investors over farmers...force farmers out of business.
 - Rolling fields makes soils more susceptible to erosion (flatter soil surface, smaller particles).
 - What makes problems show-up
 - Temporal factors (events)
 - Spatial factors (soils, geologic setting)
 - Critical watersheds = disproportional contributors
 - Big pot of \$ is available for BMPs in areas with completed TMDL Studies
 - MDA research funds area available
 - Need to support innovation that increases production while supporting the ecosystem.

Monthly Water Quality Report | June 2008

- SWAT modeling results need groundtruthing
- Effectiveness of Best Management Practices (Adam Birr)
 - BMP = Profitability + Water Quality
 - If fertilizer costs increase, farmers may reduce inputs
- Subsurface Tile Drainage (Corey Hanson)
 - I presented the results of the tile drainage water quality study and gave an update on the status of the flow study.
 - There were a number of farmers present, including those that were involved with the study.
- Small group discussion on BMP effectiveness
 - People appreciated the inclusion of the agricultural sector in work group discussion
 - Need public awareness
 - Need common solutions
 - Agricultural education needs to address water quality
 - Shelterbelts have disappeared over time, but there is reduced tillage
 - Tile drainage research
 - Wild Rice – move toward conversion to tile, implementation
 - Conventional Ag – longer term research is needed
 - BMPs should be integrated with recommendations from agronomists and consultants
 - How can FDR be addressed by BMPs?
 - 80% of the problems occur on 20% of the land
 - Need more information to identify critical landscapes
 - Need a suite of BMP options
 - Owner operator vs. industrial scale
 - Ongoing, preventative BMPs are needed to protect WQ during “normal conditions”
 - Extreme events

Targeting BMPs to Critical Areas

- Small areas of the landscape are often responsible for a majority of the phosphorus exported to surface waters
- A small proportion of storm events transport a majority of the phosphorus to surface waters
- For greatest effectiveness, must implement BMPs in those portions of the landscape that are most critical
- These areas shift location due to variable storm intensity and changes in management associated with crop rotation effects!

Monthly Water Quality Report | June 2008

Future Meetings/Events

- **July 9th** - Marshall County Water Resources Advisory Committee, 9:30am
- **July 25, 2008** – Red River Basin Monitoring Advisory Committee, 9:30 am, Fertile
- **July 28, 2008** - Red River Basin Water Quality Team Meeting in Moorhead, 10am
- **July 30, 2008** – Clearwater River Dissolved Oxygen and Fecal Coliform TMDL Study Stakeholders' Advisory Group meeting, Clearbrook Community Center, 9:30 am
- **August 1, 2008** – Semi Annual Reports to the MPCA are due for the Thief River Watershed Sediment Investigation and the Clearwater River Dissolved Oxygen and Fecal Coliform TMDL Study.
- **August 14, 2008** – Maple Lake Improvement District Meeting. 7PM, Mentor Community Center
- **August 25, 2008** – Red River Basin Water Quality Team Meeting at the RLWD, 10am
- **September 22, 2008** – Red River Basin Water Quality Team Meeting in Moorhead
- **October 27, 2008** – Red River Basin Water Quality Team Meeting at the RLWD, 10am
- **November 5, 2008** - Marshall County Water Resources Advisory Committee, 9:30am
- **November 24, 2008** – Red River Basin Water Quality Team Meeting in Moorhead, 10am
- **December 22, 2008** - Red River Basin Water Quality Team Meeting at the RLWD