

By: Corey Hanson, Water Quality Coordinator
For: April 9, 2009
Red Lake Watershed District
Board Meeting



Tile Drainage Study

After a period of review and edits, a final report, including flow results, for this study has been completed.

You can download a copy of the report from the RLWD water quality project webpage. <http://www.redlakewatershed.org/h2oquality.html#TileDrainage>
Monitoring is planned to continue through 2009.

Clearwater River Dissolved Oxygen and Fecal Coliform TMDL Study

This month, I began the process of establishing loads and load reductions for the impaired reaches. The E. coli impairments are straightforward. The low dissolved oxygen impairments require the identification of a pollutant that is causing the impairment. Historical low dissolved oxygen data doesn't correlate well with historical nutrient data, likely due to the diurnal variation in dissolved oxygen levels and the varying times-of-day that the sites are sampled. The daily minimum dissolved oxygen concentrations filtered from the continuous dissolved oxygen monitoring have proven to be much more valuable. Daily minimum dissolved oxygen concentrations have, so far, correlated well with temperature (which can be considered a pollutant). The rate at which the water quality standard is not met correlates very well with the level of diurnal flux (daily max minus daily min). SWAT modeling has yielded an estimated daily record of most nutrients, which will be used to find a correlation between daily minimum dissolved oxygen and a specific nutrient (phosphorus).

A stakeholders' meeting was scheduled for March 27th, but it had to be delayed due to dangerous driving conditions. It will now be held on April 10th from 10 to noon at the Clearbrook Community Center. Some time was also spent on compiling the general information needed for the TMDL reports. April will be the final month for completing the SWAT modeling, so a lot of attention will be focused on getting that done well.

Thief River Watershed Sediment Investigation

After analyzing the past years' Eureka Manta water level data and discussion at the March 3rd coordination meeting, I decided that it will be necessary to purchase HOBO water level loggers (more reliable than the Manta's probe) for water level logging at stream gauges 757, 41, and 40. The field data and equipment maintenance data sheets were improved to make them easier for summer staff to use. Rochelle Nustad and I also compiled step-by-step procedures for the summer worker(s) to use when maintaining the continuous monitoring equipment. On March 25th, a service representative from Eureka Environmental (from Austin, Texas) visited our office to provide a training session for USFWS staff, USGS staff, and myself.

I have also been providing some additional training to the USFWS and USGS on Eureka Manta calibration methods. We are deploying these sondes and HOBO water level loggers as soon as deployment tubes become accessible. I have only been able to deploy the X4/sg43 (Moose R. at CSAH 54) so far. The USGS has been able to deploy equipment at most of the Agassiz NWR inflow sites, but not at their outlet sites. Water is too high at many sites to reach the top of the deployment tubes.

Stream Gauge 40 at the CR7 Thief R. crossing on 3/31/09



Stream Gauge 6 on Branch 200 of Ditch 11 on 3/31/09



Mud River at Hwy 89 on 3/24/09



Green water at CR7 bridge on 3/18/09



Stream Gauge 41 on CD20 3/31/09



Project 60 Water Quality Monitoring

I have been checking on the sites weekly to collect water quality and stage data. I was able to deploy the sites' HOBO water level loggers on 3/24/08. The deployment pipes still had ice in them, so the TS300 turbidity loggers weren't installed until early April. County Ditch 2 became drifted-in with snow during the last snowfall. Through March and into April, the flow is traversing either side of this large snow drift.

Stream Gauge 71 on Polk CD2 on 3/24/09



Other Notes

- Began compiling and printing water level measurement records at stream gauge sites collected during water quality monitoring and filing them in the stream gauge file.
- Assessed data for RLWD long-term monitoring sites in preparation for participation in the 2009 State water quality assessment process. In cases where it may have an effect upon final assessment results, River Watch, SWCD, and Marshall County Water Plan data was used in the assessment at each site to achieve the true assessment results. The MPCA will use data collected by all agencies that has been submitted and stored in the EPA STORET database.

Hartz Park in Thief River Falls on 3/24/09



March Meetings and Events

- **March 3, 2009** – Thief River Water Quality Study planning meeting at Agassiz National Wildlife Refuge Headquarters, 8:30 am.
- **March 4th, 2009** - 6th Annual Red River Basin Water Quality Training Session, 8:30 am
 - Gave a presentation on the use of Standard Operating Procedures for water quality monitoring
 - Also gave a presentation on the basics of continuous stage and water quality monitoring.
- **March 23, 2009** – Red River Basin Water Quality Team, 10am to 3pm, Detroit Lakes
- **March 23, 2009** – Red Lake River Corridor Enhancement Project meeting in Crookston, 6:30 pm – canceled due to flooding in Crookston
- **March 25, 2009** – Eureka training with USFWS, USGS, and Ric Bertrand (company rep from Texas)
- **March 27, 2009** –Postponed to April 10th due to dangerous driving conditions.

Future Meetings/Events

- **April 6, 2009** - Pennington County Water Resources Advisory Committee. 9:30 AM, Thief River Falls
- **April 7, 2009** – Overall Advisory Committee meeting – presentation on water quality projects
- **April 10, 2009** - Clearwater River TMDL Stakeholders' Committee Meeting, 10:00 to noon @ Clearbrook Community Center.
- **April 22, 2009** - Marshall County Water Resources Advisory Committee. 9:30 AM, Newfolden (rescheduled from April 6)
- **April 28, 2009** – Best Professional Judgment Group meeting for the Red River Basin for the 2009 State water quality assessment, St. Paul MPCA office.
- **April 30, 2009** – End of SWAT modeling contract with the EERC for the Clearwater River watershed.
- **June 8, 2009** – Pennington County Water Resources Advisory Committee, 9am
- **July 20-24** – I will be on vacation in Montana for my brother's wedding.
- **June 30, 2009** – Deadline for completion of the Clearwater River Dissolved Oxygen and Fecal Coliform TMDL Study.
- **August 31, 2010** – Deadline for completion of the Thief River Watershed Sediment Investigation

