

Most of this month was spent finishing the last round of sampling for the year, creating educational water quality videos, and entering 2013 monitoring data.

Thief River Watershed Assessment Project
(Watershed Restoration and Protection - WRAP)

- Task 9 – Data Entry
 - 2013 monitoring data was entered and submitted to the MPCA for storage in the State’s EQUIS database.
- Task 11 – Civic Engagement
 - RMB Environmental Laboratories and MPCA staff worked on short videos to help local citizens understand the parameters of concern. Three individual videos will highlight the following: dissolved oxygen, turbidity, and E.coli bacteria. A team of people including the videographer, RMB Environmental Labs, RLWD staff, and MPCA staff recorded video footage and made several rounds of edits to the videos’ scripts in October. Peter Nelson from the Pennington County SWCD, Wayne Johnson from the City of Thief River Falls, and Brenda Miller’s University of Minnesota Crookston class helped with some of the video shoots. Scenic footage was recorded at many sites including the Clearwater River (multiple sites), Oakland Park in Thief River Falls, and Walker Brook Lake.



Walker Brook Lake



Clearwater River
near Pinewood



Clearwater Lake



Red Lake River Watershed Assessment Project
(Watershed Restoration and Protection - WRAP)

- Task 3 – Continuous Water Quality Monitoring
 - Eureka Midge, In-Situ TROLL 9500, HOBO dissolved oxygen loggers were retrieved for the final time from five monitoring sites where the equipment was recording round-the-clock dissolved oxygen readings. These readings will provide a record the true daily minimum dissolved oxygen concentrations.
 1. Red Lake river at CSAH 27
 2. Red lake River at the Highlanding Bridge
 3. Pennington County Ditch 96
 4. Judicial Ditch 60
 5. Kripple Creek
 - Dissolved oxygen loggers are regularly retrieved from their deployment tubes after two weeks of deployment. After retrieval, they are replaced by a clean, freshly calibrated dissolved oxygen logging sonde. The dirty sondes are brought back to the lab where data is downloaded, sondes are cleaned, and sondes are re-calibrated.
 - In-Situ TROLL 50281 needed service to replace a faulty temperature probe. The optical dissolved oxygen probe was also replaced under warranty. The MPCA paid for the repair expenses.
- Task 5 – Stage and Flow Monitoring
 - Flow was measured in the Red Lake River at the CSAH 27 monitoring site.
- Task 6 – Stream Channel Stability Assessment (Geomorphology)

- Follow-up geomorphology work was conducted along the Black River by DNR staff.
- DNR staff also conducted geomorphology work along Burnham Creek, including the Spring Gravel dam area.
- Task 8 – Data Entry
 - 2013 monitoring data was entered and submitted to the MPCA for storage in the State’s EQuIS database.
- Task 11 – ID Sources and Solutions
 - Progress was made in the process of hydro-correcting (“burning-in” flow paths where there are culverts and bridges) the Red Lake River LIDAR surface and development of a Stream Power Index for the Red Lake River. RLWD staff are completing a township-by-township search for culverts that will help with the hydro-correction process.

Red Lake River and Grand Marais Creek Assessment (Surface Water Assessment Grant)

- 2013 monitoring data was entered into a spreadsheet and sent to the MPCA for entry into the State’s EQuIS water quality database.
- Photos (taken during each site visit and then labeled according to the MPCA’s protocols) and calibration records were also sent to the MPCA project manager.

Red Lake Watershed District Long-Term Monitoring Program

- A few sites were sampled in the Thief River watershed to finish the third round of sampling this year.
- A high E. coli concentration was found in the Moose River at CSAH 54, but not at the site further downstream at Highway 89.

Grand Marais Creek Watershed Restoration and Protection Project

- 2013 monitoring data was entered and submitted to the MPCA for storage in the State’s EQuIS database.
- A contractor has been hired to develop a HSPF (hydrology and water quality) model for the Grand Marais Creek watershed.

District Monitoring

- The fourth round of monitoring at the RLWD long-term water quality monitoring sites was conducted in October.
- 2013 monitoring data was entered and submitted to the MPCA for storage in the State’s EQuIS database.
- Water in the upper reaches of the Clearwater River was exceptionally clean.

- High concentrations of E. coli (>126 CFU/100 ml) were found in Ruffy Brook, Grand Marais Creek (CSAH 19 and CR 64, very high at CR64), South Cormorant River, Darrigan's Creek, Lost River upstream of Pine Lake, and the Maple Lake Outlet.
- Relatively (but not excessively – 3- 4 mg/L) high nitrates and nitrites were found at some sites, like the Mud River, Lost River, and Hill River. Tile drainage is prevalent in the watersheds of those smaller rivers.
- During low flow or ponded conditions in Grand Marais Creek, the bubbler system that is used to measure stage every 15 minutes actually appears to be stirring up the loose sediment in the pool near the bridge.



- Grand Marais Creek Cut-Channel Restoration project, upstream of CR64, approximately 1 year after construction:



- Grand Marais Creek Cut-Channel Restoration project, upstream of CR64, approximately 1 year after construction:



- Grand Marais Creek Outlet Restoration Project construction is underway:



- South Cormorant River:



- O' Briens Creek beaver pond:



- Notably high ammonia concentrations were recorded in samples taken from the Thief River north of Thief River Falls (Hillyer Bridge).
- A herd of cattle has direct access to the shore of Pine Lake.
- Pipeline construction across Silver Creek, just west of Clearbrook, was creating elevated levels of turbidity, but turbidity levels were below the 25 NTU threshold set by the State's water quality standards (15.7 NTRU, compared to readings that were less than 2 NTRU at nearby sites on Silver Creek and Clear Brook).
- Turbidity was very high (78.3 NTRU) in the Thief River at CSAH 7 (Agassiz Bridge).

Stream Gauging

- The MPCA installed a flow monitoring station on the Lost River, north of Brooks at CR119. The equipment was moved to this location from the CR118 crossing of the Lost River. It will be used for a pollutant load monitoring project that will begin in 2014 and will also provide data that will be helpful for calculating loads in TMDL reports.

Other Notes

- Planning and work plan development for the Clearwater River Watershed Restoration and Protection Project is underway.

October Meetings/Events

- **October 4th, 2013** – Red River Basin Monitoring Advisory Committee Mtg, Fertile
 - The MPCA has hired Joe Hadash as a Monitoring Specialist at the Detroit Lakes office.
 - The International Water Institute (IWI) will be getting groundwater models and stream tables that can be used in classrooms around the Red River Basin.
 - Wayne Goeken and the Grygla River Watch group took a canoe/kayak trip up the Thief River and back from the boat access near the Red Lake/Thief confluence in Thief River Falls as part of IWI's River Explorers program.
 - The East Grand Forks River Watch group paddled from the Highway 220 crossing of the Red Lake River to the Murray Bridge in East Grand Forks.
 - The Bagley River Watch group paddled down a reach of the Clearwater River near Shevlin.
 - IWI is looking for ideas about how to report on water quality monitoring that's done to test changes in water quality from flood damage reduction (FDR) projects.
 - The North Dakota Department of Health is creating its own online surface water quality data portal.
 - A handful of sites within the RLWD will be intensively monitored in the next couple of years as part of the MPCA's Load Monitoring Network.
 - Mud River at Highway 89
 - Thief River at CSAH 7 (Agassiz Bridge)

- Thief River near Thief River Falls (Hilyer Bridge)
- Lost River north of Brooks on CR119
- Clearwater River at Plummer
- Clearwater River in Red Lake Falls
- Red Lake River at the Highlanding bridge
- Red lake River at CSAH 13, near Red Lake Falls
- Red Lake River at Fisher
- Grand Marais Creek at CR64 (may need to add a site late, after the outlet restoration construction is completed)
- **October 16, 2013** - Marshall County Water Resources Advisory Committee
 - The USFWS has been conducting excavation within Agassiz Pool. Drawdowns have also been creating channels/gullies within the pool. This erosion and disturbance could be to blame for the high turbidity levels in the river this fall.
 - There was a lot of discussion about “One Watershed One Plan”
 - A Joint Powers Board of local agencies will be in charge of planning.
 - Plans will be synchronized with the completion of WRAP projects.
 - Boundaries of planning areas roughly follow HUC8 watershed boundaries, but should be reviewed (e.g. the Grand Marais Creek HUC8 boundary includes land that doesn’t flow into Grand Marais Creek and crosses watershed district boundaries.
 - There were concerns/questions expressed about whether or not landowners will as involved in the “One Watershed One Plan” process as they are in the County water planning process.
 - How will the new planning strategy affect the County’s Ditch Management Authority?
 - The county fixed a straight pipe (untreated residential wastewater) that was discharging into the Thief River so that the water is being treated properly.
 - More side water inlets have been installed along the Thief River.
 - Birding groups have been enjoying the many bird species that can be found in impoundments.

Plans for October and November 2013

- Thief River Watershed Restoration and Protection Project.
 - Creating Stream Power Index maps.
 - Create a web page dedicated to the Thief River Watershed
 - Compile and apply corrections to continuous water quality data.
 - Informational water quality video production.
 - Flow characterization
 - Shoot video footage for water quality videos. Promote the videos once they are finished.
- Red Lake River Watershed Assessment Project
 - Create a webpage dedicated to the Red Lake River
 - Compile and apply corrections to continuous dissolved oxygen data.

- Submit a summarization of continuous dissolved oxygen data to MPCA EQuIS staff.
- Flow characterization
- Clearwater WRAP work plan
- Data reviews.
- Data and other information for RESPEC for the Thief, Red Lake, and Clearwater River modeling.
- Retrieve, clean, and download data from all HOBO Water Level Loggers.
- Compile 2013 stage and flow data.

Future Meetings/Events

- **November 18-21** - River Watch Fall Kickoff events at Thief River Falls, Rydell NWR (or Crookston), and Wheaton
- **December 3rd, 2013** – Marshall County Water Resources Advisory Committee
- **December 16, 2013** - Pennington County Water Resources Advisory Committee

Quotes of the Month:

“In any moment of decision, the best thing you can do is the right thing, the next best thing is the wrong thing, and the worst thing you can do is nothing.”

– Theodore Roosevelt

“Your current safe boundaries were once unknown frontiers”

– Anonymous

Red Lake Watershed District Monthly Water Quality Reports are available online at:
<http://www.redlakewatershed.org/monthwq.html>.

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