

By Corey Hanson, Red Lake Watershed District Water Quality Coordinator. 12/31/2020

Water Quality Monitoring

Water quality data entry of field data collected by the District was completed. Data collected and entered by the District and the East Polk SWCD was reviewed for accuracy and submitted to the MPCA for entry into the state's EQIS water quality database.

The District started sampling Long Lake (04-0295-00, Beltrami County near Pinewood, Clearwater River Watershed) in 2018 to see if it is still impaired and to figure out why it was impaired during Beltrami County's 2011-12 sampling effort. Though there have been a few exceedances of the chlorophyll-a and total phosphorus standards in recent samples, the average values have met standards throughout our sampling effort. Recent results have not been low enough to completely offset the high 2011-12 results, but the overall averages dropped with nearly every sample that was collected. District staff contacted MPCA staff to learn whether the lake could be recommended for delisting or if it should be sampled through another summer. If the 2021 water quality conditions are similar to 2018-2020 conditions and the 2011 data is cycled out of the assessment period, the lake would very likely meet water quality standards.

River Watch and Public Education

District staff (Ashley Hitt) met with Red Lake County Central students to discuss River Watch data entry.

Northwest Minnesota Virtual Water Festival

The West Polk Soil and Water Conservation District wrote an article about the 2020 Northwest Minnesota Water Festival and shared it [on their website](#) and with local newspapers.

Clearwater River Watershed Restoration and Protection Strategy (WRAPS)

The Draft Clearwater River Watershed Total Maximum Daily Load (TMDL) and Draft Clearwater River Watershed Restoration and Protection Strategy (WRAPS) reports were officially published by the MPCA for public notice and review on November 16, 2020. The public will be able to review and comment on the documents until December 16, 2020. District staff shared the public notice via email with 83 people from the contact list that was compiled during the Clearwater River WRAPS. The notice was also shared on the District's Facebook page.

Thief River Watershed One Watershed One Plan (1W1P)

District staff contacted engineering firms to see if they would be able to help with the Lower Thief River Streambank Stabilization and Mud River Restoration Feasibility Study portions of the 2020-21 Thief River 1W1P Work Plan that have been tasked to the RLWD. The RLWD Board of Managers will formally discuss the hiring of engineering firms at their December 10, 2020 meeting.

Red Lake River Watershed One Watershed One Plan (1W1P)

The Outlet Stabilization construction work for the Thief River Falls Westside Flood Damage Reduction (FDR) Project is nearly complete. District staff photographed the completed work.

Thief River Falls Westside FDR Outlet Stabilization Project Photos





The water flowing through the outlet was still muddy from upstream construction/excavation



The Red Lake River (Thief River Falls-Crookston) and Black River EPA NKE Plan – Phase 1 Small Watershed Focus 319 Grant progressed toward contract execution. Contract documents were being prepared by MPCA staff, along with some small edits to simplify the budget.

Clearwater River One Watershed One Plan

District staff created a webpage as a location to share [Clearwater River One Watershed One Plan](#) information with the public. District staff began a list of potential contacts for committees and public meetings using contact information compiled during the Clearwater River Watershed Restoration and Protection Strategy and current local government contacts (county boards, SWCD boards, city government, elected leaders, etc.).

The Clearwater County Water Planner (1W1P Coordinator) completed a draft work plan and budget that was reviewed by the Planning Work Group.

Other

- Construction of the Black River Impoundment dike and outlet structure began in November, 2020. The Red River Watershed Management Board published a [newsletter article](#) about the project.
- [Construction](#) of the [Westside Flood Damage Reduction Project](#), a diversion channel and drainage infrastructure on the west side of Thief River Falls, has been completed. The outlet of that project was stabilized to repair and prevent erosion and reduce sediment loading to the Red Lake River.
- The [July 2020 Red Lake Watershed District Water Quality Report](#) was completed and posted on the District's website.
- The [August 2020 Red Lake Watershed District Water Quality Report](#) was completed and posted on the District's website.
- District staff worked on August, September, and October water quality reports.
- MPCA staff shared information about an [algal scum interceptor, deflector, and enclosure \(ASIDE\) system](#) that has been developed to create safe swimming areas in highly eutrophic lakes with harmful algal blooms.
- The District received reports and complaints of flooding along the Red Lake River upstream (east) of Thief River Falls. The United States Corps of Engineers had been discharging a high rate of flow from the Lower Red Lake Dam.

High flow in the Red Lake River at Smiley Bridge (CSAH 7)



High flow in the Red Lake River at “Forsberg Park” (185th Ave NE)



November 2020 Meetings and Events

- **November 2, 2020** – Red River Watershed Management Board Flood Damage Reduction Work Group (FDRWG) and Technical Scientific Advisory Committee (TSAC), Monitoring Advisory Committee (MAC) – joint meeting on technical topics
 - Updated vision for monitoring activities sponsored by the FDRWG

- Program of pre/post project monitoring for new impoundments
 - Create a list of questions that should be answered by monitoring efforts
 - What new projects are in development?
 - Repeat Daniel Svedarsky's study of the Burnham Creek Impoundment (Biological Inventory of a Multi-Purpose Flood Control Impoundment in Northwest Minnesota and Potentials for Nongame and Game Bird Management, June 1992) and document changes.
- Technical paper update
 - Technical Paper #3
 - Create a clearinghouse document for references ("living document," with hotlinks) and fact sheets about conservation practices that are recommended for drainage projects.
 - Wetland technical papers 1,2, and 12
 - The papers remain valuable, but need updates
 - Commission an updated study for Technical paper 12. Have significant changes in climate, invasive species, drainage, agricultural practices, and other variable affected outcomes?
 - Widen the spectrum of published report links.
- TSAC recommendations for workshop on siting and design of impoundments
 - Achieve natural resource enhancement (NRE) purposes
 - Attention to altered hydrology (increased tile drainage since 1998)
 - Hold workshops?
 - Drainage Management Team: state staff studying altered hydrology and writing a paper
 - Wait for this to be completed
 - Discussion about representation/input on the team
- TSAC recommendations for attention to altered hydrology in the Red River Basin
- **November 16, 2020** – Clearwater River Watershed WRAPS/TMDL Public Notice
- **November 17, 2020** – EPA [Explore Your Watershed](#) Workshop. A wide variety of maps and data can be accessed through this website (water quality impairments, monitoring data, identified issues, protected areas, wild/scenic rivers, watershed health index, etc.).
- **November 20, 2020** – Stream and Lake Protection Workshop Question and Answer Session
 - Video 1 - [Stream Protection and Prioritization](#)
 - Prioritization of protection strategies using GIS layers that can be found in the [Minnesota Geospatial Commons](#) (MnGeo) and on the [MN DNR Watershed Health Assessment Framework](#) (WHAF)
 - Protection of healthy streams is more cost-effective than restoring lost health/function.
 - Identify high quality stream reaches
 - Determine healthy stream reaches that are close to statistical impairment thresholds
 - Stream Protection Priorities for WRAPS [GIS layer](#)
 - Identify conditions and risk factors that are predictive of index of biological integrity scores (IBI score, Minnesota Stream Habitat Assessment, road density, disturbed lands, and public land GIS layers)

- The Red Lake River Watershed was noted as a test watershed, but the information was either not shared with the MPCA project manager or it was not completed in time to be included in the WRAPS.
- Stream protection layers can be viewed in WHAF by finding “WRAPS Stream Protection Priorities” under “Add Data”
- A glaring omission from the MPCA’s protection prioritization process is the use of water chemistry data.
- Video 2 - [Lake Protection Prioritization Framework](#)
- Video 3 - [Lake Protection Prioritization Framework Example](#)
 - Phosphorus Sensitivity Significance
 - Loss of Biological Significance
 - Lake Benefit/Cost Assessment
- Video 4 - [Funding Protection Work](#)
 - Describe your project by answering the questions: Who? What? Where? When? Why? How much?
 - Who:
 - ...needs to do the work?
 - ...needs to participate?
 - ...will decide where to do the work?
 - What:
 - ...are you going to do?
 - ...is the benefit?
 - ...resources are available/needed?
 - ...is your track record?
 - Where:
 - ...is protection needed?
 - ...are the most important areas to protect?
 - ...do actions provide benefits?
 - When:
 - ...will the project get started?
 - ...will the project be finished?
 - ...will permitting be done?
 - Why: (most important part)
 - ...does the resource need protection?
 - ...is the chosen method the best?
 - ...should you be funded instead of others?
 - ...is the resource worth investment?
 - ...is this the best source of funding?
 - ***Emphasize water quality
 - How:
 - ...will the actions be accomplished?
 - ...do you know the actions will be effective?
 - ...did you decide to work here?
 - ...will actions continue after this funding runs out?
 - ...will you know when you are done?

- How much:
 - ...is left to do?
 - ...will be accomplished?
 - ...effort will be required?
- Don't be too wordy in your application but take full advantage of the space that is available.
- Statewide rankings don't necessarily determine priorities. Interpretations of data sets set the priorities. If it was easy to identify the best projects in the state, the application process would be much simpler. BWSR doesn't try to make the application process complicated.
- Video 5 - [Surface Source Water Protection and Drinking Water Treatment](#)
 - The Minnesota Department of Health is working on an amended draft Source Water Assessment for the City of Thief River Falls.
 - The video explained the steps of the water treatment process.
 - Discussion of turbidity in source water that causes taste and odor problems in East Grand Forks and Thief River Falls.
 - Treatment trains are engineered to treat a range of possible water quality characteristics that is unique to the community's source water. If the acceptable range of water quality is exceeded, the treatment train can't handle it. Problematic water quality parameters vary by watershed.
- Video 6 - [Incorporating Protection into the One Watershed One Plan \(1W1P\) Process](#)
 - Define protection for the watershed. What is most valuable in the area? What is most at risk in the area? Priorities should be clear (clearly mapped).
 - Identify resource qualities
 - Wild rice lakes (MnGeo)
 - Coldwater fisheries (MnGeo)
 - Critical habitat (USFWS)
 - Lake of biological significance (MnGeo)
 - Threatened or endangered species
 - Property values
 - Minnesota Prairie Plan
 - Watershed Health Assessment Framework
 - Identify resource risks
 - Declining water quality trends (MPCA)
 - Nearly/barely impaired waters (MPCA, local staff)
 - Lakes of phosphorus sensitivity significance (MnGeo)
 - Stream connectivity barriers (DNR, stressor identification)
 - Stream reaches with erosion problems (local knowledge, stressor identification, geomorphology study)
 - Sensitivity to pollution (MDH)
 - Is there a way to factor landowner willingness into the prioritization process? It is difficult. The existence of a lake association would be one indication of potential landowner support for resource protection
 - Make goals reasonable.

- Video 7 – [Incorporating Protection into Comprehensive Watershed Management Plans in NW Minnesota](#)
 - MPCA layers don't cover all streams
 - Local knowledge is important
 - Priorities could be different based on constituent of interest – that is where local judgement and priorities come into play.
 - Discussion about regulatory actions in local plans. Multiple people replied that additional regulations could undermine progress on the local level and draw attention away from projects. Better enforcement of existing regulation would be better than the creation of new ones.
- Video 8 – [Case Study: The Sandhill River Protection Project](#)
 - 2005 stream survey
 - 2009 Engineering study
 - Pilot project for Red River Basin Decision Information Network tools
 - Identified as a pilot project by the Sand Hill River Watershed HSPF model
 - It took multiple attempts to get funding.
 - The fish community has improved (spawning walleyes, golden redhorse, channel catfish, and smallmouth bass)
- Video 9 – [Case Study: Upper Pelican River Protection Project](#)
 - The costs of cleaning up waters are higher than the costs of preservation.
 - Nuisance algal blooms in Detroit Lake were a problem because the area's economy is tied to the quality of water resources (recreation).
 - Showcase shoreline restoration projects were completed (no geese anymore!).
 - Sediment removal structures were installed to treat stormwater runoff.
 - Rice Lake, a 280-acre, drained wetland downstream of Floyd Lake, along a channelized portion of the Pelican River, is the largest contributor of phosphorus to Detroit Lake. The change in hydrology after a wetland has been ditched creates a layer of aerated organic material. The exposure of that peat layer results in increased oxidation and release of phosphorus. Rainfall events inundate that layer, mobilizes the phosphorus, and carries it downstream. If the wetland could be restored, the organic layer would remain saturated, less phosphorus will be released/mobilized, and downstream phosphorus loading will be decreased.

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

Learn more about the Red Lake Watershed District at www.redlakewatershed.org.

Learn more about the watershed in which you live (Red Lake River, Thief River, Clearwater River, Grand Marais Creek, or Upper/Lower Red Lakes) at www.rlwdwatersheds.org.

“Like” the Red Lake Watershed District on [Facebook](#) to stay up-to-date on RLWD reports and activities.