

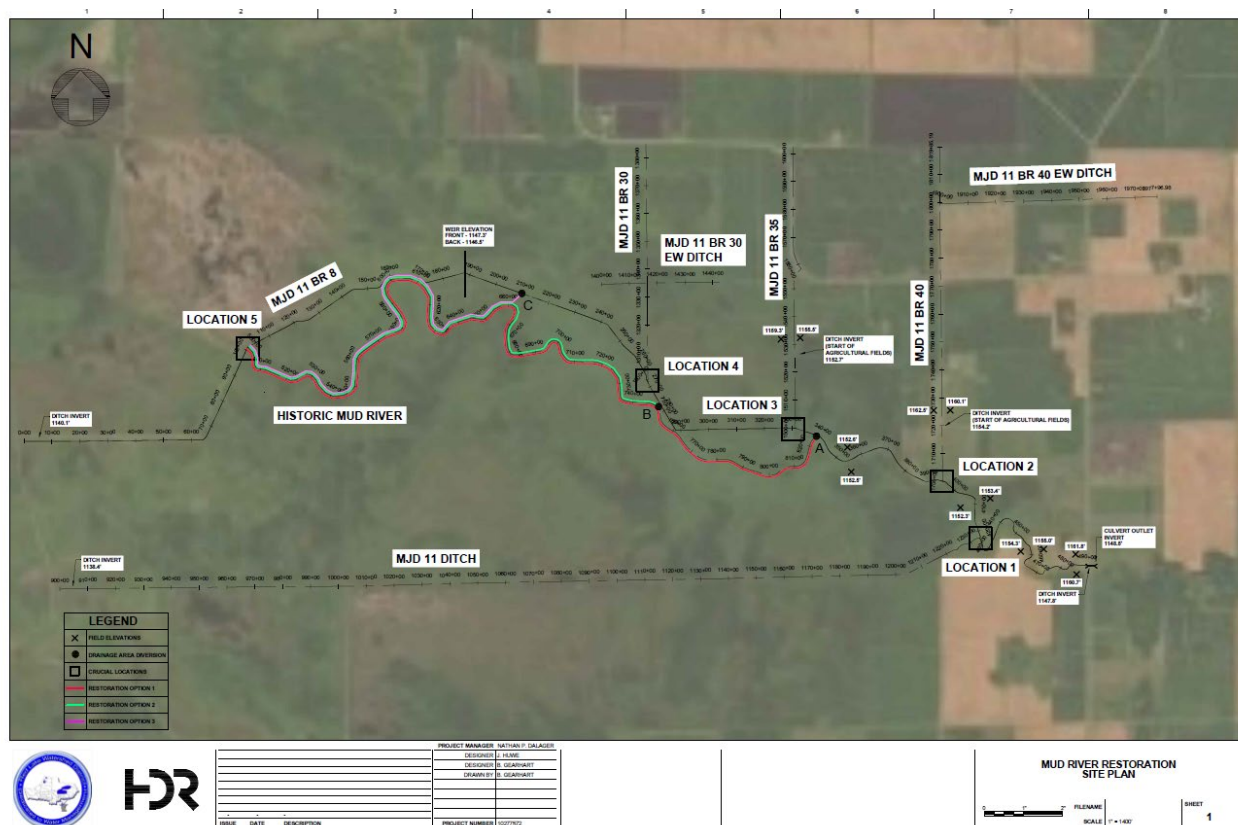
RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

March 2021

By Corey Hanson, Red Lake Watershed District Water Quality Coordinator. 10/25/2021

Thief River Watershed One Watershed One Plan (1W1P)

HDR Engineering shared the results of the survey work that they completed for the feasibility study phase of the Mud River Restoration Project. Project partners discussed potential funding sources for further planning, design, and construction work.



River Watch

Red Lake County Central was one of the first schools to participate in the International Water Institute's River of Dreams program this year. After learning about watersheds and water quality, the students decorated canoes and launched them into the Lost River. Each canoe's journey can be tracked online. When a canoe is found, it's location can be logged on a website. Elementary students from Red Lake Falls (Clearwater River), Clearbrook-Gonvick (Clearwater River near Clearwater Lake), Grygla (Mud River), and Thief River Falls (Red Lake River, in April) also participated in the program throughout the spring of 2021 (March through April). The River of Dreams program involves classroom instruction about watersheds and water quality, as well as an outdoor event where the students launch trackable wooden canoes, that they have decorated, into a local river.

RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

March 2021



Thief River Falls Oxbow Restoration Project

A work plan was developed and approved by the Minnesota Board of Water and Soil Resources (BWSR) for the Clean Water Fund grant that was awarded to the Thief River Falls Oxbow Restoration Project by the Minnesota Board of Water and Soil Resources.

Flow Monitoring

The District's HOBO water level loggers were deployed in March 2021.

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

Houston Engineering, Inc. completed a feasibility study for the Demarais-Hanson stabilization project (a large gully erosion problem at the outlet of a drainage system, east of Red Lake Falls along CSAH 11).

Clearwater River One Watershed One Plan (1W1P)

The Water Quality Coordinator worked on a section-by-section review of PTMApp outputs and culvert locations. A groundtruthing effort was initiated to check for culverts in locations where flow patterns appeared to be artificially altered in the digital model by roads, berms, approaches, etc. Those ridge-like features in the digital LiDAR elevation data can act as dams. If there is a culvert or bridge under the barrier, it needs to be drawn on a map as a “burn line.” The PTMApp model simulates the accumulation of flow and flow directions based on elevations of pixels in the LiDAR elevation data. That simulation reveals patterns of flow. Areas where surface flow is halted and water pools in the model are called non-contributing areas. The flow accumulation lines were examined to look for flow paths that seemed to have been artificially altered or diverted. Some of those diverted flows brought attention to culverts that were identifiable in aerial photos. Where flow seemed to be artificially diverted, but aerial photos did not clearly show a culvert or other drainage structure, a marker was placed on a Google Earth map so that the site could be visited, and the presence/absence of a drainage structure could be verified. The non-contributing areas were examined to see if the terrain and aerial photos suggested that there may be a drainage structure that hasn’t yet been marked as a burn line.

While traveling throughout the watershed for groundtruthing work, the Water Quality Coordinator photographed notable erosion problems that were encountered. Recent private ditch excavation, located 0.6 miles east of Highway 59 and 5.3 miles north of Erskine, had caused significant erosion and sedimentation.



RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

March 2021



A large area of dramatic erosion problems was discovered along a ditch along 250th Ave SE, near the border of Red Lake and Polk Counties. Conversion of a large section of land from forest/pasture to cultivated land, along with a lack of a buffer, has caused severe erosion problems along the bank of the ditch and severe wind erosion.



RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

March 2021

Due to a lack of snow cover and/or conservation practices, there was a remarkably high amount of wind erosion in many locations in the spring of 2021.



Project partners compiled a list of stakeholders (potential committee members and contacts to invite to attend public meetings and provide public comments). Each staff District staff created a list of people for the Clearwater 1W1P Advisory Committee and began contacting individuals to gauge their interest. A 60-day notice comment period for the Clearwater River Watershed 1W1P began in March 2021. A letter was distributed to stakeholders to announce the comment period and the beginning of the planning process. The due-date from comments was May 24, 2021.

Other

- Christina Slowinski began a transition from the Ditch Inspector (Engineering Technician II) position to the Natural Resource Specialist (water quality and GIS work) position to replace Ashley Hitt, who left in January 2021 for a new job with the NRCS. Some training was completed in early March, with the Water Quality Coordinator. The Annual Red River Basin Water Quality Monitoring Training Session was not held this year, so the water quality staff reviewed presentations from previous years' training sessions and practiced calibrating/maintaining equipment in the lab.
- District staff wrote articles for the 2020 Red Lake Watershed District Annual Report.
- New maps were created for the Bartlett Lake Management Plan. Some edits were made to the plan text in preparation for a resumption of the planning effort.
- The [public notice period](#) for the [Upper and Lower Red Lakes Watershed](#) Restoration and Protection Strategy and Total Maximum Daily Load documents began on March 22, 2021. The reports describe current water quality conditions in the watershed and describe strategies for

RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

March 2021

the restoration of impaired waters and protection of high-quality waters. The documents were on public notice until April 21, 2021.

Water quality related notes and minutes from the March 11, 2021 Red Lake Watershed District Board of Managers meeting.

- Jesme and Staff member Hanson participated in the Thief River 1W1P planning meeting on March 4th. The meeting provided progress updates on projects listed in the Work Plan as well as discuss BWSR's accounting requirement to assure billing is submitted properly for E-Link reporting.
- A Clearwater River 1W1P virtual meeting will be held on March 24 at 1:00 p.m.

Water quality related notes and minutes from the March 25, 2021 Red Lake Watershed District Board of Managers meeting.

- Administrator Jesme stated that as part of the BWSR Grant Agreement for the Thief River Falls Oxbow Project, RLWD Project No. 46Q, a Memorandum of Agreement with the City of Thief River Falls needs to be approved to make sure that there is a clear understanding of who is responsible for the maintenance of the project and also to include an Operating Plan. Jesme noted that the project has a life expectancy of 25 years. It was the consensus of the Board to table this item until the April 8, 2021 Board meeting, to allow for drafting of the Memorandum of Agreement.
- Engineer Tony Nordby reviewed the Demarais/Hanson Feasibility Report, which was identified as a potential project within the Red Lake River 1W1P, RLWD Project No. 149. Nordby stated that this project is located SW of Red Lake Falls, along CSAH 11, where a large gully has formed south of the highway, going north towards the Red Lake River. Houston Engineering was hired to look at various options and completed a feasibility study of the area. Nordby stated that he recommends shaping what is currently there, armor the bottom with riprap, include a coarse aggregate combination, to allow water to run on top of the rock instead of under and enter a plunge pool. Nordby stated that the reach of the project would only go to the woods area. The project would protect ag and pastureland. There could be some erosion in the woods and oxbow, which will be discussed with the Red Lake River 1W1P members. Manager Dwight asked about the possibility of upland treatment in the area. Nordby stated that this area has a 1.7 sq.mi. drainage area, with low flow cuts, water speeds up, cuts, etc. Water has split the oxbow with trees in the middle of the two oxbows. Nordby reviewed the cost estimate. This project will be presented to the Red Lake River 1W1P Policy Committee at their next meeting. Manager Page stated that he was informed of a permit violation upstream of this area, where a landowner used a scraper in the bottom of the ditch.
- Motion by Sorenson, seconded by Dwight, to approve the purchase of five HOB0 Dissolved Oxygen Data Loggers and replacement dissolved oxygen sensor caps from Onset, at a purchase price of \$6,675.00. Motion carried.
- Jesme and Hanson participated in the March 26, 2021, Thief River 1W1P Policy Committee meeting.
- Jesme and Hanson participated in the Clearwater River 1W1P PWG meeting on March 24, 2021.
- Jesme and Hanson will participate in the Red Lake River 1W1P PWG on April 1, 2021.

RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

March 2021

March 2021 Meetings and Events

- **March 4, 2021** – Thief River 1W1P Planning Work Group Meeting
 - Reimbursement invoices were discussed – there needs to be sufficient detail to indicate where the expenditure fits into the budget.
 - The Judicial Ditch 23 stabilization project is in the stage of final design. Plans and specifications will be completed, and the project will be advertised for bids.
 - An educational event for landowners will be planned for this summer (soil health workshop). Marshall and Beltrami County staff will work together to plan the event. Landowners from both counties will be included.
 - There is a need to create a tracking database for the Thief River Watershed, like the Red Lake River ArcOnline tracker that is being used for the Red Lake River Watershed.
- **March 9, 2021** – MPCA Triennial Standards Review public meeting
- **March 22, 2021** – Mud River Restoration Project meeting
 - The group reviewed several restoration options proposed by HDR Engineering.
 - In all the options, flow was split between the current Judicial Ditch 11 channel and a restoration of the old channel.
 - More/deeper excavation = more flow in the restored portion of the channel.
 - More information is needed
 - Soil borings
 - Maintenance plan
 - How can water quality benefits be estimated?
- **March 24, 2021** – Clearwater River 1W1P Planning Work Group meeting
 - The grant agreement and an agreement with Houston Engineering (consultant) were signed on March 18, 2021.
 - A 60-Day notice about the initiation of the planning process was sent on March 23, 2021.
 - The PWG discussed an online survey to gather input from the public.
 - Identification of priority resources and resource concerns
 - The PWG reviewed the Clearwater 1W1P timeline and meeting schedule
 - Houston Engineering will prepare 1-page progress summaries for Policy Committee and Advisory Committee meetings
 - Brielle Prokosch (Clearwater SWCD) will record meeting notes.
- **March 26, 2021** – Thief River 1W1P Policy Committee meeting
- **March 29, 2021** – Mud River Restoration Funding Meeting
 - We will need to identify the water quality components and habitat components. The costs of those components may have to be funded with applications to separate funding sources.
 - Discussion about the funding of further engineering costs
 - Would Ducks Unlimited be interested in the project?

**RED LAKE WATERSHED DISTRICT
MONTHLY WATER QUALITY REPORT**

March 2021

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.