

**Red Lake Watershed District Long-Term Monitoring Program**

The Red Lake Watershed District monitors water quality at more than 60 long-term monitoring sites throughout the District. Most sites are visited four times each year. The RLWD Water Quality Assistant and Water Quality Coordinator completed the third round of 2014 monitoring at these sites in August. Samples are analyzed for total phosphorus, orthophosphorus, total suspended solids, total Kjeldahl nitrogen, nitrates & nitrites, ammonia nitrogen, E. coli, sometimes chemical oxygen demand, and sometimes total organic carbon.

- High E. coli concentrations were found in samples collected at these sites in August:
  - Pennington County Ditch 21 – very high (>2419.6)
  - Ruffy Brook at CSAH 11
  - Silver Creek at 159<sup>th</sup> Avenue, near Clearbrook
    - 4106 CFU/100ml
    - This was the highest E. coli concentration ever recorded during Red Lake Watershed District sampling. We may have sampled worse water, but E. coli concentrations greater than 2419.6 are censored (due to limitations of the laboratory method) and reported by the lab as “>2419.6.”
  - Lost River at 109<sup>th</sup> Ave (S005-283, LR10)
  - Thief River at CSAH 7
  - Kripple Creek at 180<sup>th</sup> Ave.
  - Poplar River at CSAH 30



- A low concentration of dissolved oxygen (<5 mg/l) was found in Burnham Creek at the Polk County Road 48 crossing.

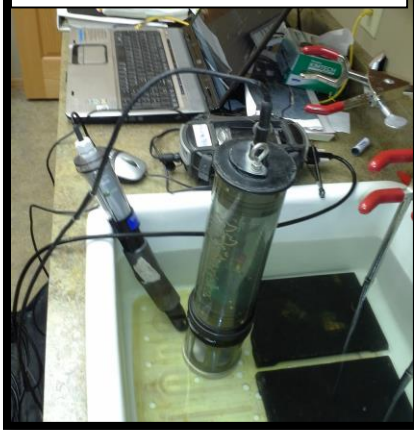
**Clearwater River Watershed Restoration and Protection (WRAP) Project**

- Objective 2 – Water Quality Sampling
  - In order to prove that a stream is meeting the 5 mg/l daily minimum water quality standard for dissolved oxygen, there need to be a sufficient number of readings taken prior to 9 am. Dissolved oxygen concentrations are lowest in the morning because photosynthetic activity drops off at night. Pre-9am dissolved oxygen

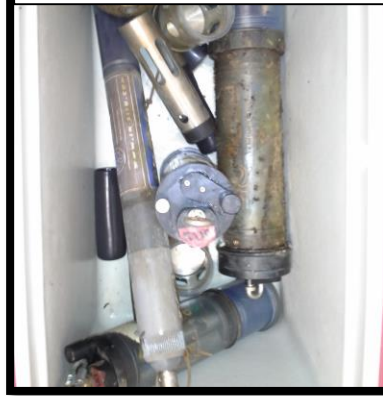
readings were recorded throughout the summer of 2014 at sites that were close enough to the Red Lake Watershed District office.

- Clearwater River in Red Lake Falls
- Poplar River at CR118
- Lost River at CR 119
- Hill River at CR 119
- Clearwater River near of Plummer.
- RLWD staff conducted sampling and continuous dissolved oxygen monitoring for an intensive examination of a reach of the Poplar River that has been influenced by past discharge from the Fosston wastewater treatment facility lagoons. Three crossings in a row will be continuously monitored for stage and dissolved oxygen and will be intensively sampled. This will occur in two separate 2-week periods.
  - Data from the CSAH 6 and CSAH 30 crossings will show whether or not there is any current impact to the river from Fosston's WWTF lagoons (if there happens to be any discharge).
  - The CSAH 30 and 380<sup>th</sup> Street sites bracket a large riparian wetland area along the stream that could be consuming dissolved oxygen from the water flowing in the Poplar River.
    - A large decrease in dissolved oxygen from the CSAH 30 crossing to the 380<sup>th</sup> Street crossing was observed in the measurements made with a portable multiparameter sonde during the site visits. Dissolved oxygen dropped from 8.55 mg/L at CSAH 30 to 4.61 mg/L at 380<sup>th</sup> Street. The distance between the two crossings is just 1.4 miles in a straight line and a little more than 2 miles of channel.
    - Dissolved oxygen levels at the 380<sup>th</sup> Street crossing were lower than 5 mg/l during multiple site visits.
  - The CSAH 30 crossing (site name: POP20) is in between the other two crossings and already has a dissolved oxygen logger deployed there all summer for this project.
  - Eureka Manta sondes with optical dissolved oxygen probes were deployed at the CSAH 6 (Poplar6) and 380<sup>th</sup> Street (Poplar380) sites in August.
    - Dissolved oxygen levels at the 380<sup>th</sup> Street site were much lower than the CSAH 30 and CSAH 6 crossings.
- Clearwater Lake is being sampled this year by the Clearwater Soil and Water Conservation District and Pine Lake will be sampled next year.
- Objective 4 – Continuous Dissolved Oxygen Monitoring
  - Continuous dissolved oxygen loggers were deployed by the RLWD at the following sites in 2014. There is a goal of 10 2-week deployments at each site. In order to meet State water quality standards, ninety percent of daily minimum dissolved oxygen concentrations should be greater than 5 mg/l on most streams and greater than 7 mg/l in trout streams.

Measuring fouling and calibration drift in the lab



Some of the sondes smell pretty bad after being in the water for two weeks.



- Poplar River at CR118 (S007-608, PR118)
  - 8/8/2014 – 8/20/2014
    - The logger may not have functioned correctly during this deployment.
  - 8/20/2014 – 9/3/2014
    - Dissolved oxygen levels are greater than 5 mg/l during all but one day.
- Poplar River at CSAH 30 (S003-127, POP20)
  - 7/24/2014 – 8/6/2014
    - Dissolved oxygen levels were greater than 5 mg/l.
  - 8/8/2014 – 8/20/2014
    - There were large fluctuations in dissolved oxygen levels. Daily minimum dissolved oxygen levels sometimes fell below 5 mg/l, but some maximums were greater than 11 mg/l.
  - 8/22/2014 – 9/3/2014
    - Some of the daily minimum dissolved oxygen levels just barely dipped below the 5 mg/l water quality standard. None were below 4 mg/l.
- Lost River at 109<sup>th</sup> Ave (S005-283, LR10)
  - 7/24/2014 – 8/6/2014
    - Dissolved oxygen drops below 3 mg/l each night and gets as high as 10 mg/l during the day.
  - 8/8/2014 – 8/20/2014
    - Dissolved oxygen levels failed to rise above the 5 mg/l water quality standard for approximately half of each day.
  - 8/22/2014 – 9/3/2014
    - All of the daily minimum dissolved oxygen concentrations were below 5 mg/l

- Lost River at 139th Ave (S000-924, Lost139)
  - 7/24/2014 – 8/6/2014
    - Dissolved oxygen levels were good at this site. They were all greater than 6 mg/l.
  - 8/8/2014 – 8/20/2014
    - Dissolved oxygen >6 mg/l throughout the deployment
  - 8/22/2014 – 9/3/2014
    - Most of the dissolved oxygen readings were greater than 6 mg/l. There are random measurements (only 1 or 2) in which dissolved oxygen levels dramatically dip to low levels. These could have been caused by some sort of disturbance. They will be examined when the dissolved oxygen record for the site is compiled to see if they should be deleted.
- Silver Creek at CR111 (S002-082, 81)
  - 7/24/2014 – 8/6/2014
    - There were several days during this deployment in which dissolved oxygen levels dropped below 5 mg/L.
  - 8/8/2014 – 8/20/2014
    - The concentration of dissolved oxygen dropped just below 5 mg/L on most days and even dropped below 2 mg/l on one day.
  - 8/22/2014 – 9/3/2014
    - There were a lot of low dissolved oxygen readings during this deployment. Stagnant water (no flow) and warm temperatures are to blame for these low readings.
- Ruffy Brook at CSAH 11 (S008-057, Ruffy11)
  - 7/24/2014 – 8/6/2014
    - Dissolved oxygen levels were good at this site. They were all greater than 6 mg/l.
  - 8/6/2014 – 8/20/2014
    - There were some dissolved oxygen readings that dropped below 5 mg/l.
  - 8/20/2014 – 9/3/2014
    - The logger stopped working after 5 days, but all of the dissolved oxygen readings during that shorter period were greater than 5 mg/l.
- Clearwater River at CSAH 22 (S002-929, Clearwater22)
  - 8/20/2014 – 9/3/2014
    - All dissolved oxygen readings were above 7 mg/l
- Clearwater River at CSAH 11 (S002-752, Clearwater11)
  - 8/20/2014 – 9/3/2014
    - All dissolved oxygen readings were above 6 mg/l

- The MPCA deployed a logger at was the Clearwater River in Red Lake Falls (Klondike Bridge, S002-118) in July and August of 2014.
- Objective 5 – Stream Channel Stability Assessment
  - The reconnaissance part of the project (assessments via kayak) has mostly been completed. There was one reach of the Poplar River that has been inaccessible due to high water and bridge construction. The data collection along one reach of the Clearwater River was limited to study bank heights because high water covered the bank full benches.
  - Intensive work at selected stations along the studied reaches began in August. The data collected at these stations includes:
    - Brief vegetation description of near bank and riparian vegetation
    - Pfankuch stability assessment
    - Examine bank features while in the field to determine a “bankfull” elevation
    - Pebble counts (at least 2)
      - Measuring channel bottom sediment sizes with a ruler
      - Entire study reach count is used to determine stream type
      - Riffle cross section counts are used when velocity and discharge estimates are calculated
    - Point bar samples
      - Determine if the stream can competently move its sediment supply
    - Pattern and profile of the waterway at each study site
    - GPS equipment is used to complete cross sections and longitude profile.
    - Water surface elevations
    - GPS equipment is used to get detailed measurements of some of the stream banks to validate our stream bank erosion estimates (BANCS model)
    - Take pictures and make additional notes
    - Walk the entire study reach and collect measurements for a BANCS model to predict stream bank erosion rates.
      - Bank Erosion Hazard Index (BEHI) ratings.
      - Waypoints will be created as bank features (angle, surface protection, height, root depth, etc.) change
      - Each similar section of a bank will be assessed individually so that erosion rate estimates can be created
      - This will be helpful is determining if stream banks are moving at a natural erosional rate or a more accelerated rate

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

**August 2014**

- Intensive station work was completed along a reach of the Clearwater River downstream of County State Aid Highway 24 (near the Clearwater Lake Inlet).



- Intensive station work was completed along a reach of the Clearwater River in Red Lake Falls.



- Intensive station work was completed along a reach of the Clearwater River downstream of CSAH 22 (trout stream reach near Pinewood).



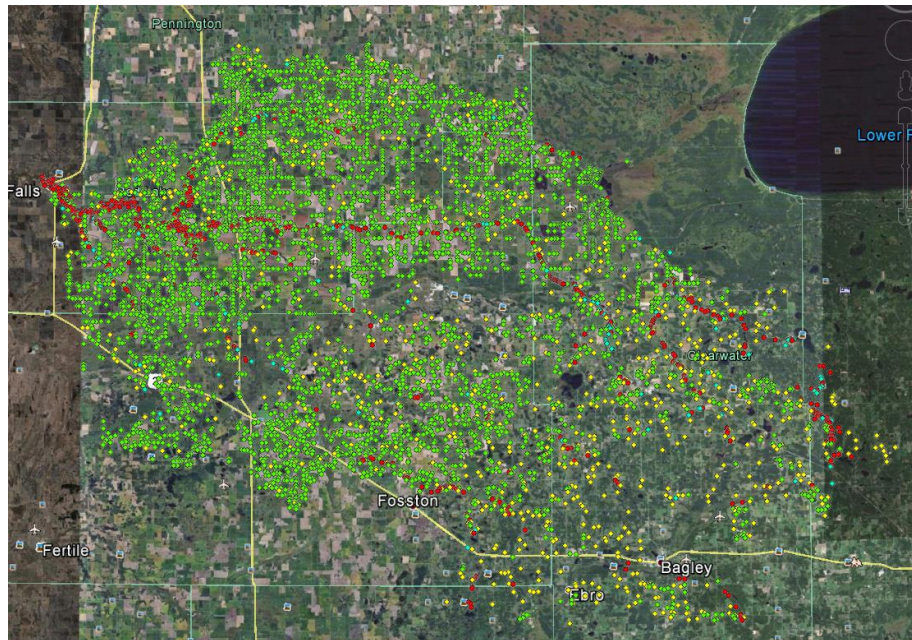
## RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

August 2014

- Intensive station work was completed along a reach of the Clearwater River upstream of CSAH 22.



- Objective 6 – Pollutant Source Investigation and Stressor Identification
  - Stephanie Klamm (DNR Hydrologist) has created a draft GIS layer that shows locations of potential stressors and pollution sources like ditch outlets, erosion, sedimentation, and livestock operations throughout the Clearwater River watershed. Detailed maps can be created once the layer is finalized. A quick glance at the layer shows how greatly agricultural drainage increases from the headwaters on the southeastern part of the watershed to the lower reaches on the west side of the watershed.



- Objective 9 – Civic Engagement
  - A list of stakeholder contacts was compiled.
  - Technical Advisory Committee meeting for the Red Lake Watershed District WRAPs – August 27, 2014
    - The project work plan, 2014 monitoring, and civic engagement plans were discussed.
    - Get Lake Associations involved with the project.
    - Would it be possible to organize new lake associations at more lakes in the watershed?
    - Collection of lake data will be important.
    - Recruit volunteers to collect samples. The Red Lake Watershed District can help with shipping and analysis, but there is not enough available staff time to do much lake sample collection.
    - Clearwater County has lots of lake data.
    - Stephanie Klamm (DNR Hydrologist) will be setting up a SharePoint site that should make it easier for project partners can share documents and data.
    - Create online polls on the blog website.
    - Lake Lamond has had good water quality



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

- Task 2 – Water Quality Monitoring
  - Pre-9am dissolved oxygen readings were recorded at the Greenwood Street crossing of the Red Lake River.
  - Extra E. coli samples were collected at two sites along the Little Black River (County Road 102 and 180<sup>th</sup> Ave) and from Browns Creek (County Road 101). The concentration of E. coli in the Little Black River on August 5, 2014 increased from the 180<sup>th</sup> Ave (LBR180) crossing to the CR 102 (LBR102) crossing. The concentration at the upstream crossing was low enough to meet the State’s water quality standard, but the lower site exceeded the water quality standard. There are livestock that have access to the river between these two crossings.



Task 3 – Continuous Dissolved Oxygen Monitoring

- Dissolved oxygen was continuously monitored with a HOBO optical dissolved oxygen logger during the summer of 2014. A dissolved oxygen logger was deployed at the CSAH 7 (Smiley Bridge) crossing of the Red Lake River, which is the closest crossing upstream of Thief River Falls.



1. 8/1/14 – 8/13/14
    - Dissolved oxygen levels were greater than 5 mg/l.
  2. 8/13/14 – 8/22/14
    - All dissolved oxygen levels were greater than 5 mg/l.
- Task 7 – Stressor Identification
    - Microbial Source Tracking samples were collected from the Black River, Gentilly River, and Kripple Creek on August 26, 2014. Microbial source tracking is a method for identifying the type of animal that is the source of fecal coliform and E. coli pollution. The samples were analyzed by a lab in Florida (Source Molecular) that specializes in this testing. E. coli samples were also collected and sent to RMB Environmental Laboratories in Detroit Lakes so we would know the concentration of E. coli bacteria at the time of sampling. Past data was used as a guide for the timing of sample collection, but E. coli concentrations were not very high at any of the sites on this sampling day. These tests show us that human waste is getting into the Black River and Kripple Creek somehow. The results of the tests have been passed along to agencies that are in charge of regulating septic systems.
      1. Black River at CSAH 18 – 73.8 MPN/100ml
        - Ruminant Fecal ID: Absent
        - Human Bacteroidetes ID 1: Absent
        - Human Bacteroidetes ID 2: Absent
        - Bird Fecal ID: Absent
      2. Gentilly River at CSAH 11 – 77.1 MPN/100ml
        - Ruminant Fecal ID: Absent
        - Human Bacteroidetes ID 1: Absent
        - Human Bacteroidetes ID 2: Absent
        - Bird Fecal ID: Absent
      3. Kripple Creek at 180<sup>th</sup> Ave – 292 MPN/100ml
        - Ruminant Fecal ID: Absent
        - Human Bacteroidetes ID 1: Present (trace), potential contributor
        - Human Bacteroidetes ID 2: Absent
        - Bird Fecal ID: Present (trace), potential contributor
    - MPCA stressor identification staff deployed dissolved oxygen loggers at sites along reaches of waterways in the Red Lake River watershed that will likely be deemed biologically impaired based upon preliminary results of recent MPCA biological monitoring efforts.

- Task 10 – Civic Engagement
  - Technical Advisory Committee meeting for the Red Lake Watershed District WRAPs – August 27, 2014
    1. The project will be extended to the end of 2015 due to the delayed MPCA’s 2014 water quality assessment.
    2. The State’s water quality assessment has been pushed back to December 2014.
    3. Coordinate with the Red Lake River One Watershed One Plan project. Both projects have the same due date.
    4. The Red Lake Soil and Water Conservation District will be completing a culvert inventory project next year.
    5. Email monthly water quality reports to stakeholders.
    6. Discoveries made during WRAP and SWAG sampling could lead to new studies that examine things like the effect of cliff swallows under bridges upon E. coli concentrations in rivers. We don’t have to answer every question for the WRAP, but rather, craft and propose specific questions in the WRAPS report’s monitoring plan.
    7. Stephanie Klamm (DNR Hydrologist) will be setting up a SharePoint site that should make it easier for project partners can share documents and data. She will also be assessing the hydrology of the watershed.
  - Task 11 – Identify Sources and Solutions
    - A hydro-corrected LiDAR surface for the Red Lake River watershed was completed in early August.
    - Stream Power Index analysis began in early August after the LiDAR surface was completed.

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

- Task 7 – Stressor Identification
  - Charts showing the results of longitudinal sampling conducted during June rainfall events were created for the June water quality report.
  - Microbial Source Tracking samples were collected at the CSAH 7 crossing of the Thief River on August 26, 2014. A sample was also collected and sent to RMB Environmental Labs to find out what E. coli concentration was at the time of sampling. The concentration was 114.5 CFU/100ml.
    1. Ruminant Fecal ID: Absent
    2. Human Bacteroidetes ID 1: Absent
    3. Human Bacteroidetes ID 2: Absent
    4. Bird Fecal ID: Present, major contributor
    5. Goose Bacteroidetes ID: Absent



- Task 10 – Data Analysis
  - June E. coli data from Judicial Ditch 21 was assessed to see if it's still impaired. Despite some lower readings that have been collected, it looks like it still exceeds the State's chronic water quality standard for E. coli bacteria.
- Task 11 – Civic Engagement
  - Technical Advisory Committee meeting for the Red Lake Watershed District WRAPs – August 27, 2014
    1. The status of the project and monitoring results were discussed.
    2. The Thief River HSPF model has been built by the RESPEC consulting firm and it is ready to use. Map creation will be the next step. MPCA staff asked for requests for model outputs that would be useful.
- Task 13 – Reports
  - A semi-annual progress report was completed and sent to the MPCA
  - The Minnesota Pollution Control Agency has completed and released the Thief River Watershed Monitoring and Assessment Report. The report describes water quality and biological conditions throughout the watershed. Data collected between 2003 and 2012 is used for the report, but it focuses primarily on the MPCA's monitoring efforts in 2011 and 2012 (fish sampling, macroinvertebrate sampling, Surface Water Assessment Grant water quality sampling, and Load Monitoring Network water quality sampling. I did find several errors and omissions in my review of the report and there are a few things they could have done differently to make it more user friendly. The document does include a lot of useful information, though. It is interesting to see the results of the biological monitoring. The stressor identification section in particular is well done. Here is the link: <http://www.pca.state.mn.us/index.php/water/water-types-and-programs/watersheds/thief-river.html>

### **Grand Marais Creek Watershed Restoration and Protection Project**

- MPCA stressor identification staff deployed dissolved oxygen loggers in potentially biologically impaired reaches within the Grand Marais Creek watershed.
- EOR and MPCA staff worked on the development of a Phase II work plan for the project.

**Clearwater River Watershed Surface Water Assessment Grant (SWAG)**



- Clearwater County Soil and Water Conservation District (SWCD), Red Lake County SWCD, and East Polk County SWCD staff continued sampling for this project in July.
- E. coli concentrations exceeded the chronic water quality standard (>126 CFU/100 ml) in at least one set of samples collected in June at the following sites:
  - Lost River at CR 139 (three times)
  - Silver Creek (twice)
  - JD73 near Rydell National Wildlife Refuge (three times, >2419.6 on 8/13/2014)
  - Lost River at CSAH 28
  - Clearwater River at CR 127 (twice)
  - Hill River upstream of Hill River Lake
  - Ruffy Brook
  - Clearwater River at CSAH 2
- Low dissolved oxygen levels (<5 mg/l) were observed in Judicial Ditch 73 near Rydell National Wildlife Refuge during multiple site visits.

**Other Notes**

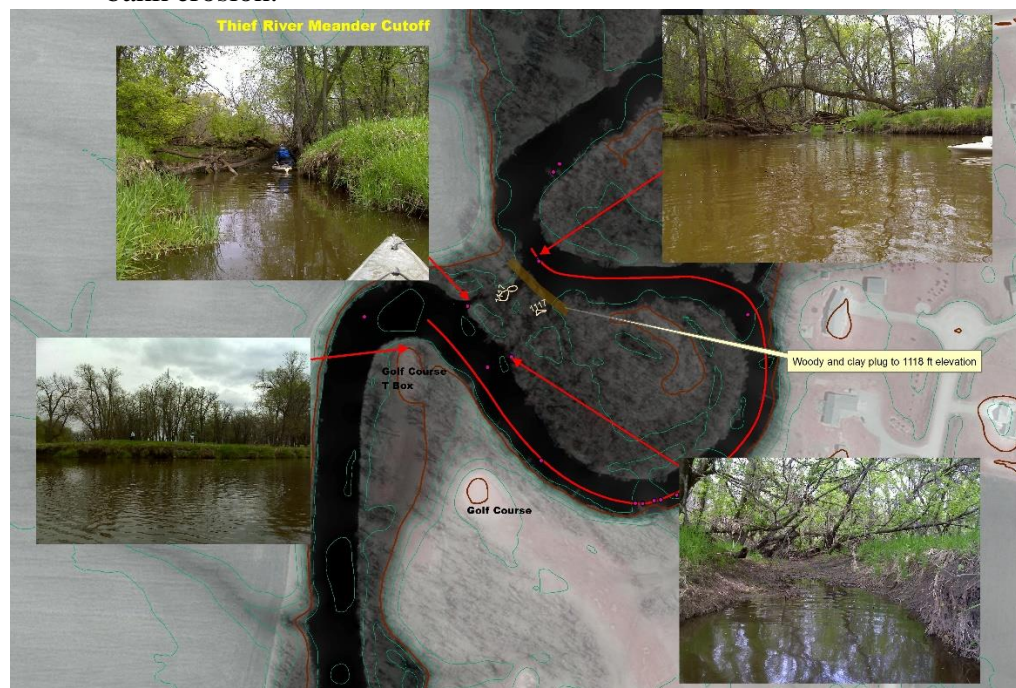
- August 8<sup>th</sup> was the last day of work here for the summer for the 2014 Summer Water Quality Assistant, Travis Torkelson. He will be studying Watershed Science at the Vermillion College in Ely, Minnesota.
- August Clearwater Lake Area Association Dockside Newsletter
  - [http://minnesotawaters.org/clearwaterlakearea/wp-content/uploads/sites/25/2014/06/AugustDockside\\_2014\\_Distribution.pdf](http://minnesotawaters.org/clearwaterlakearea/wp-content/uploads/sites/25/2014/06/AugustDockside_2014_Distribution.pdf)
  - Includes updates on the 2014 spring meeting, loons, AIS volunteering, and efforts to establish a canoe route along portions of the Clearwater River near Clearwater Lake.
- Clearwater County Soil and Water Conservation District Summer 2014 Newsletter
  - <http://www.clearwaterswcd.org/2014.summer.newsletter.pdf>



## RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

August 2014

- Water quality related topics from the August 28, 2014 RLWD Board of Managers meeting:
  - Bryan Malone, Pennington SWCD presented information on the Erickson Group Stabilization Project on the Thief River. Malone stated in 2013 the District approved cost share in the amount of \$7,000 for installation of stream barbs to be placed in the Thief River to prevent additional erosion to the streambank. The original construction cost was \$25,000. Malone stated that additional rock was needed to complete the project, which increased the final construction cost to \$39,081. Malone requested an additional cost share in the amount of \$1,957 from the 2013 Erosion Control Funds, RLWD Project No. 164. The Board voted to approve the request of the Pennington SWCD for additional cost share in the amount of \$1,957 for the Erickson Group Stabilization Project from the 2013 Erosion Control Funds.
  - Malone presented information on the Thief River Cut-Off Project. Malone stated that this area is a potential creation of an oxbow about 150 feet long. During high water flows, the river cuts across land. Malone estimates that there is only a couple feet of spoil holding it back from permanently cutting across. The Pennington SWCD received a Clean Water Fund Grant in the amount of \$34,686. Malone requested \$10,314 from the 2014 Erosion Control Funds, RLWD Project No. 164 for construction of the project. Motion by Coe, seconded by Torgerson, to approve the request of the Pennington SWCD for cost share in the amount of \$10,314 for the Thief River Cut-Off Project, from the 2014 Erosion Control Funds, RLWD Project No. 164.
    - Without this project, the river could continue to cut a channel across the meander. This would increase the slope of the river and increase stream bank erosion.



- Bryan Malone stated that the Rain Garden Project at the Ralph Engelstad Arena is substantially completed. The completion date is scheduled for September 30, 2014, at which time a final cost will be determined.
- The MPCA officially adopted new water quality standards for river eutrophication and total suspended solids.
- The State's Tiered Aquatic Life Unit (TALU) system for applying different water quality and biological standards to different types of waterways got one step closer to being officially adopted as the public comment period for them began in August.
- A RLWD Board Manager learned that Blastomycosis has killed 2 dogs near Mentor. Blastomycosis is caused by a yeast-like fungus that can be found in wet soil and rotting wood near water.
- The Pennington County Soil and Water Conservation District has also been constructing rain gardens at the Ralph Engelstad Arena in Thief River Falls. Before he passed away, Al Gustafson was an active proponent for the construction of these rain gardens and raised money for their construction. Clearwater SWCD staff created signs for the rain gardens that memorialize Al's contributions to the community, explain the function of the rain gardens, and provide information about the plants within the gardens.



### Al Gustafson Memorial Rain Garden



This Rain Garden is Dedicated to Al Gustafson  
Devoted Conservationist and Hockey Enthusiast



Al worked for the USDA Natural Resources Conservation Service for 42 years. His knowledge of plant materials contributed to the education of many.

Al began playing hockey at a young age in Hallock, Minnesota and continued on to play with Hallock High School, Crookston Senior Pirates, and Thief River Oldtimers. In 1970 he started a youth program in Marshall, Minnesota. For three years Al was the president of TRFAHA. In 1980 he became an on ice official and mentored young referees. He ran the score board for the high school hockey games and became the coach and general manager of the Thief River Oldtimers.

Al had a great sense of humor and was a friend and mentor to everyone.

#### Roof Top To Rain Garden

A rain garden is planted with native grasses, wild flowers, and shrubs designed to capture and purify water in order to minimize water contamination. The gardens installed in front of the Ralph Engelstad Arena are designed to capture a one inch rainfall event over 24 hours. Half of the rooftop runoff from the Ralph Engelstad Arena and The Huck are now redirected to the gardens. The water from the parking lot and some from the street will flow into it as well via the curb cut. Intake pipes near the arena capture water from the rain gutters and swales will redirect the surface water into one of the gardens. This will also help reduce erosion and eliminated some pressure that is placed on the storm sewer by slowing the water down. The plants act as a filtration system for the water. They absorb nutrients such as Nitrogen and Phosphorus. Mulch was chosen for the gardens because it locks in moisture for the plants. It also helps prevent weeds from growing and contributes to the filtration system as well. By the time the water reaches the drain tile under the rain gardens most of the nutrients are stripped away providing cleaner water in the storm sewer. Within 48 hours all the water collected will be disposed into the storm sewer. The blue concrete river depicts the path that the water takes underneath the ground to get to the storm sewer. Filtered water will then make its way to the Red Lake River.

This project was made possible by funding and staff support from:



Pennington Soil and Water Conservation District

City of Thief River Falls



Clean Water Land and Legacy Amendment

Red Lake Watershed District

And by donations from the friends of Al Gustafson





Water that Enters the Garden Will Drain into the Storm Sewer within 48 Hours

Flowers, Shrubs, and Grasses Act as Filtration System

Mulch Locks in Moisture and Assists in Purifying the Stormwater Runoff

Water Enters the Drain Tile and Travels to the Storm Sewer

# Vegetation

There are over one thousand plants in the rain gardens including 13 unique species of grasses, shrubs, and flowers.



**Blazing Star**  
*Liatris spicata*

- Height: 2' - 4'
- Flower Color: Red/Purple
- Attracts: Birds, Hummingbirds, and Butterflies



**Yellowtwig Dogwood**  
*Cornus sericea*

- Height: 5' - 8'
- Flower Color: Yellow/White
- Attracts: Birds and Butterflies
- Deciduous Shrub
- Special Characteristics: Bright Yellow Twigs in the Winter



**Blue Flag Iris**  
*Iris versicolor*

- Height: 2' - 2.5'
- Flower Color: Blue/Violet
- Attracts: Hummingbirds



**Karl Foerster Grass**  
*Calamagrostis acutiflora*

- Height: 3' - 5'
- Flower Color: Purple/Pink
- Attracts: Birds
- Special Characteristics: Flowers Will Turn Golden Tan During the Summer



**Grey-head Coneflower**  
*Ratibida pinnata*

- Height: 3' - 5'
- Flower Color: Yellow
- Attracts: Butterflies
- Special Characteristics: Narrow and Very Few Leaves



**Moonshine Achillea**  
*Achillea millefolium*

- Height: 1' - 2'
- Flower Color: Yellow
- Special Characteristics: Fragrant Leaves



**Prairie Dropseed**  
*Sporobolus heterolepis*

- Height: 2' - 3'
- Flower Color: Brown/Pink
- Attracts: Birds
- Special Characteristics: Fragrant Leaves, Turns Golden Brown in the Fall/Winter



**Great Blue Lobelia**  
*Lobelia siphilitica*

- Height: 2' - 3'
- Flower Color: Blue
- Attracts: Butterflies and Hummingbirds



**Little Bluestem**  
*Schizachyrium scoparium*

- Height: 2' - 4'
- Flower Color: Blue/Green
- Attracts: Birds and Butterflies



**New England Aster**  
*Aster novae-angliae*

- Height: 1' - 3'
- Flower Color: Purple
- Attracts: Butterflies
- Special Characteristics: Blooms from Late Summer to the Middle of Fall



**Black Eyed Susan**  
*Rudbeckia fulgida*

- Height: 2' - 3'
- Flower Color: Yellow/Orange
- Attracts: Butterflies



**Caterpillar Sedge**  
*Carex crinita*

- Height: 1' - 3'
- Flower Color: Green
- Attracts: Birds



**Happy Returns Daylily**  
*Hemerocallis*

- Height: 1' - 1.5'
- Flower Color: Yellow
- Attracts: Butterflies
- Special Characteristics: Fragrant Leaves



**August Meetings/Events**

- **August 2014** – Technical Advisory Committee meeting for the ongoing WRAP projects within the RLWD (date not set).
- **August 11-15, 2014** – Clearwater River geomorphology
- **August 19, 2014** – The Red Lake Soil and Water Conservation District held a field day to demonstrate alternative side inlets.
- **August 20, 2014** – Pennington County SWCD Project Tour, 5 PM to 7:30 PM
- **August 25, 2014** – Water Quality Decision Support System meeting/demonstration
- **August 27, 2014** – Red Lake Watershed District WRAP Projects – Thief River, Red Lake River, and Clearwater River Technical Advisory Committee Meeting.
  - 10 – 11 AM: Thief River WRAP
  - 11 – Noon: Red Lake River WRAP
  - 12:30 – 2 PM: Clearwater River WRAP
  - Discussion topics
    - Project update
    - Task by task intro to the work plan (Clearwater only)
    - Assessment results (Thief only)
    - Ongoing monitoring
    - Continuous monitoring (Clearwater and Thief)
    - Geomorphology
    - Stressor ID and pollutant source ID
    - Model development
    - LiDAR stream power index development
    - Civic engagement plans
    - Reports
    - Additional coordination of efforts and communication
- **August 2014** – Enter and submit monitoring data from the Red Lake River and Grand Marais Creek watersheds to the MPCA for EQUIS entry prior to the official water quality assessment.

**Plans for the rest of 2014**

- Thief River Watershed Restoration and Protection Project.
  - Creating Stream Power Index maps.
  - Create a web page dedicated to the Thief River Watershed
  - Flow measurements
  - Flow characterization
  - Finish a summary of existing data
  - Work on writing WRAPS report
  - Technical Advisory Committee meeting
  - Collect Microbial Source Tracking (Fecal DNA) samples.
  - Retrieve water level loggers, download data, and convert water level data into stage and flow records

## RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

August 2014

- Compile continuous dissolved oxygen data from Smiley Bridge at the end of the year.
- Red Lake River Watershed Assessment Project
  - Stream Power Index Analysis of the watershed
  - Create a webpage dedicated to the Red Lake River
  - Flow characterization
  - Flow measurements
  - Finish assessing water quality conditions based upon 2004-2013 data.
  - Finish a summary of existing data that will include the assessment results.
  - Begin writing parts of the WRAPS report
  - Technical Advisory Committee meeting
  - Collect Microbial Source Tracking (Fecal DNA) samples.
  - Retrieve water level loggers, download data, and convert water level data into stage and flow records
- Clearwater River Watershed Restoration and Protection Project
  - Flow measurements
  - Water level logger deployments
  - Dissolved oxygen logger deployments
  - Geomorphology intensive station work
  - Intensive study of dissolved oxygen levels and nutrients in the Poplar River near Fosston.
  - Compile 2014 continuous dissolved oxygen data
  - Retrieve water level loggers, download data, and convert water level data into stage and flow records
  - Compile existing data and summarize existing reports
- Clearwater River Surface Water Assessment Grant sampling, administration, and data management.
- Enter and submit all 2014 monitoring data to the MPCA.

### Upcoming Meetings/Events

- **September 17, 2014** – Pennington County Outdoor Education Day
- **September 23 and 24, 2014** – Northwest Minnesota Water Festival events in Warren and Fertile
- **October 6-17** – Clearwater River Geomorphology – Intensive station work
- **December 2, 2014** – Public kick-off meeting for the Clearwater River WRAP
- **December 3, 2014** – Marshall County Water Resources Advisory Committee Meeting
- **December 4-6, 2014** – Minnesota Association of Watershed Districts 2014 Annual Meeting and Trade Show
- **December 31, 2014** – Interim progress report for the Clearwater River SWAG is due.
- **January and February 2015** – Thief River, Red Lake River, and Grand Marais Creek WRAP stakeholders meetings (dates not set)

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

**August 2014**

- **February 1, 2015** – Semi-annual progress reports for the Thief River, Red Lake River, Grand Marais Creek, and Clearwater River Watershed Restoration and Protection projects are due.
- **February 4, 2015** – Marshall County Water Resources Advisory Committee Meeting
- **April 8, 2015** – Marshall County Water Resources Advisory Committee Meeting
- **June 30, 2015** – Scheduled completion date for the Thief River Watershed Restoration and Protection Project.
- **July 8, 2015** – Marshall County Water Resources Advisory Committee Meeting
- **November 4, 2015** – Marshall County Water Resources Advisory Committee Meeting
- **December 31, 2015** – Planned completion date for the Red Lake River Watershed Restoration and Protection Project

**Quote of the Month:**

“Opportunity may knock only once, but temptation leans on the doorbell.”  
– Anonymous

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

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