

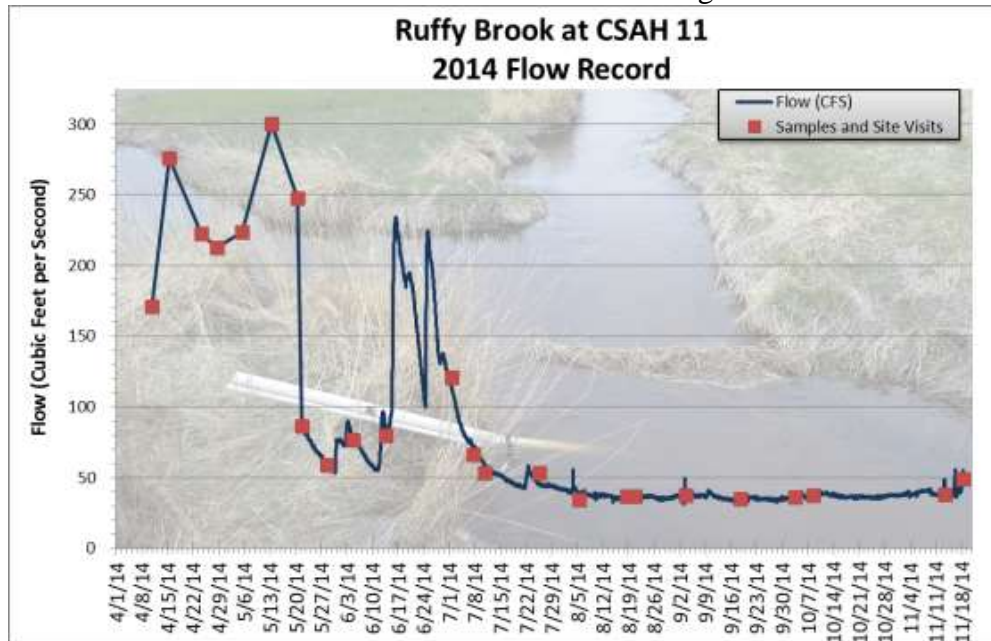
RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

March 2015

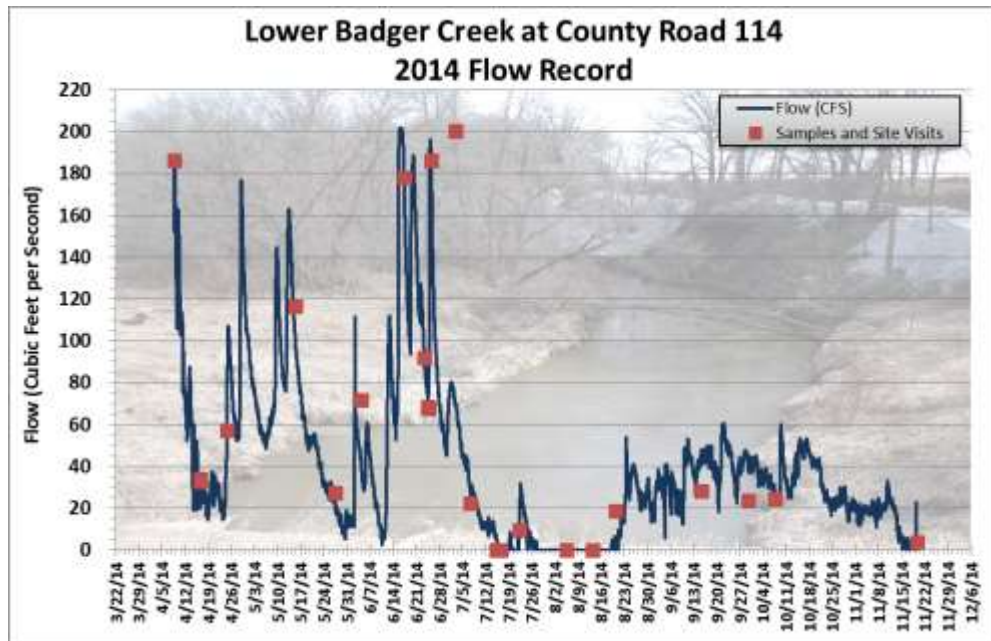
By Corey Hanson, Red Lake Watershed District Water Quality Coordinator. July 23, 2015.

Clearwater River Watershed Restoration and Protection (WRAP) Project

- Objective 3 – Flow Monitoring
 - 2014 stage data from MPCA gages was received from MPCA staff.
 - 2014 stage data from the CSAH 11 crossing of Ruffy Brook was compiled and used to calculate a flow record for the 2014 monitoring season.



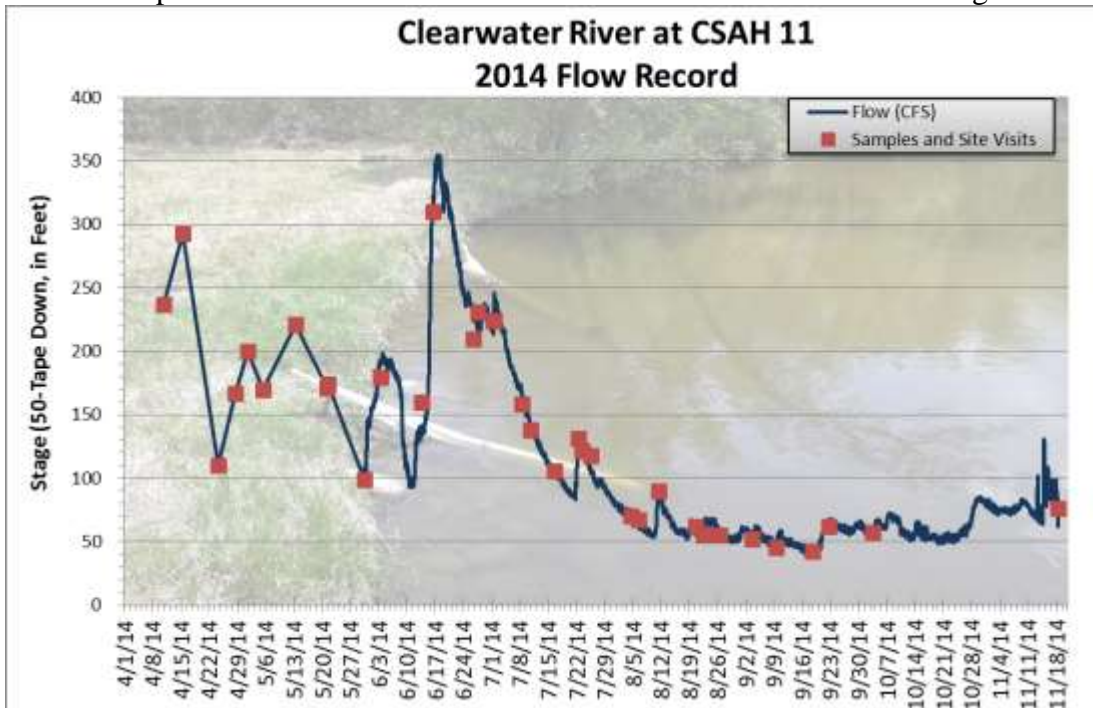
- 2014 stage data from Lower Badger Creek was compiled for the 2014 monitoring season.



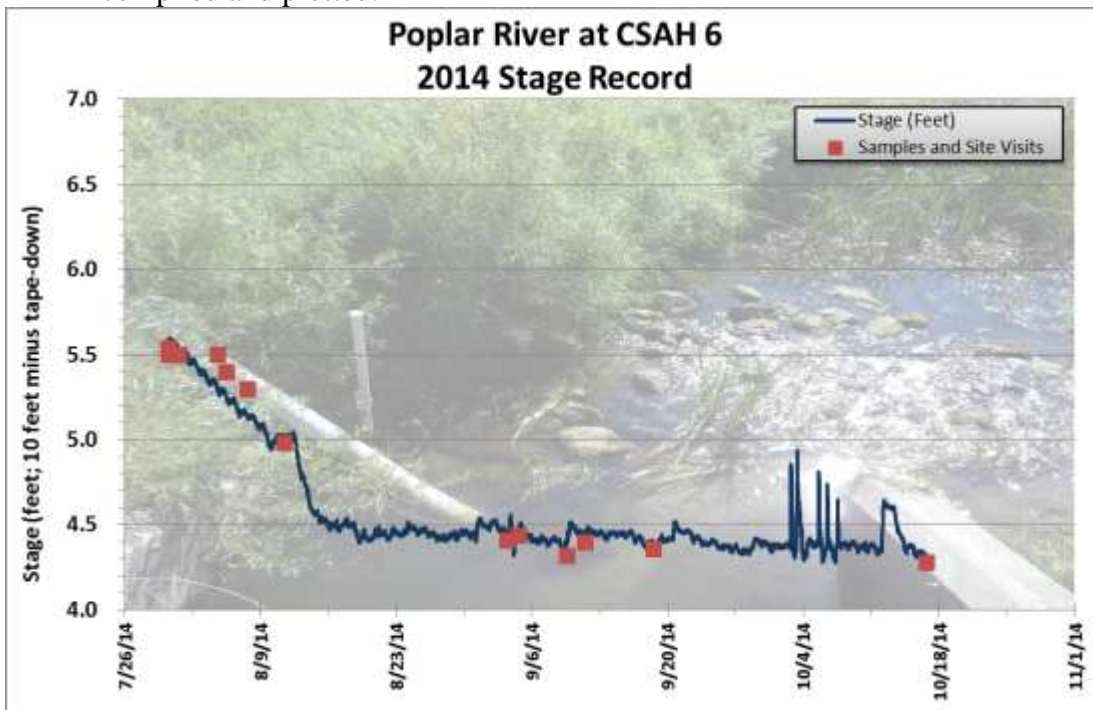
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- 2014 stage data from the CSAH 11 crossing of the Clearwater River was compiled and used to calculate a flow record for the 2014 monitoring season



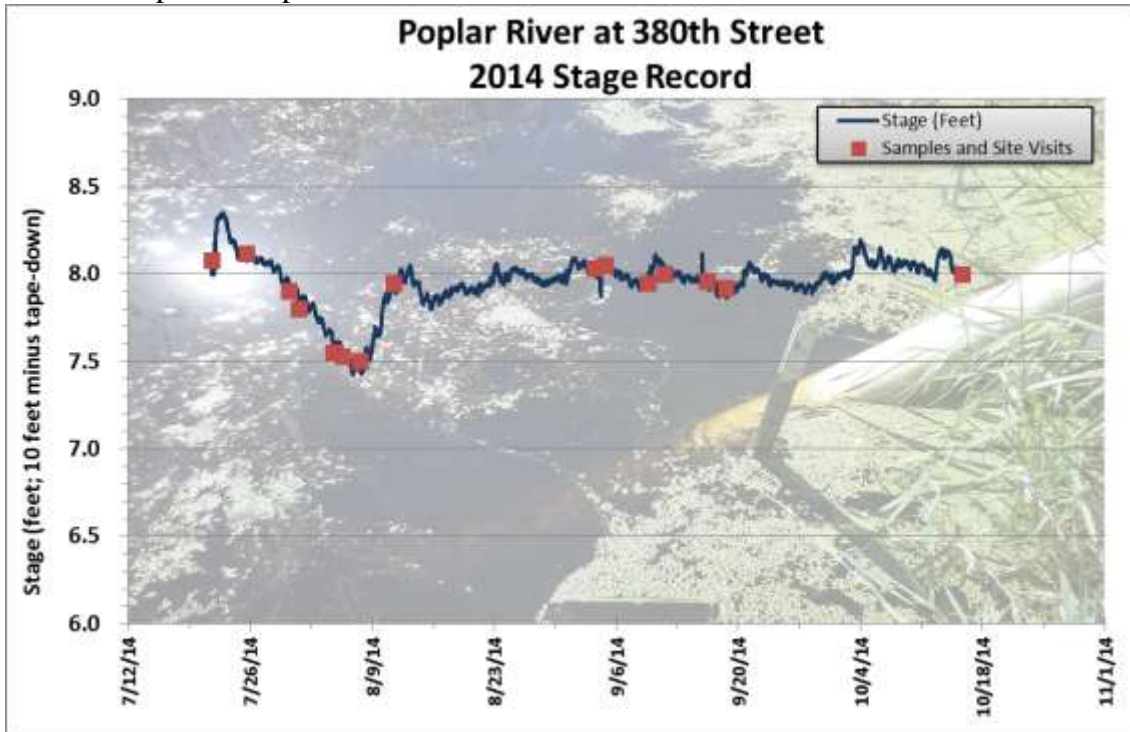
- 2014 stage data from the Poplar River at CSAH 6, upstream of Fosston, was compiled and plotted.



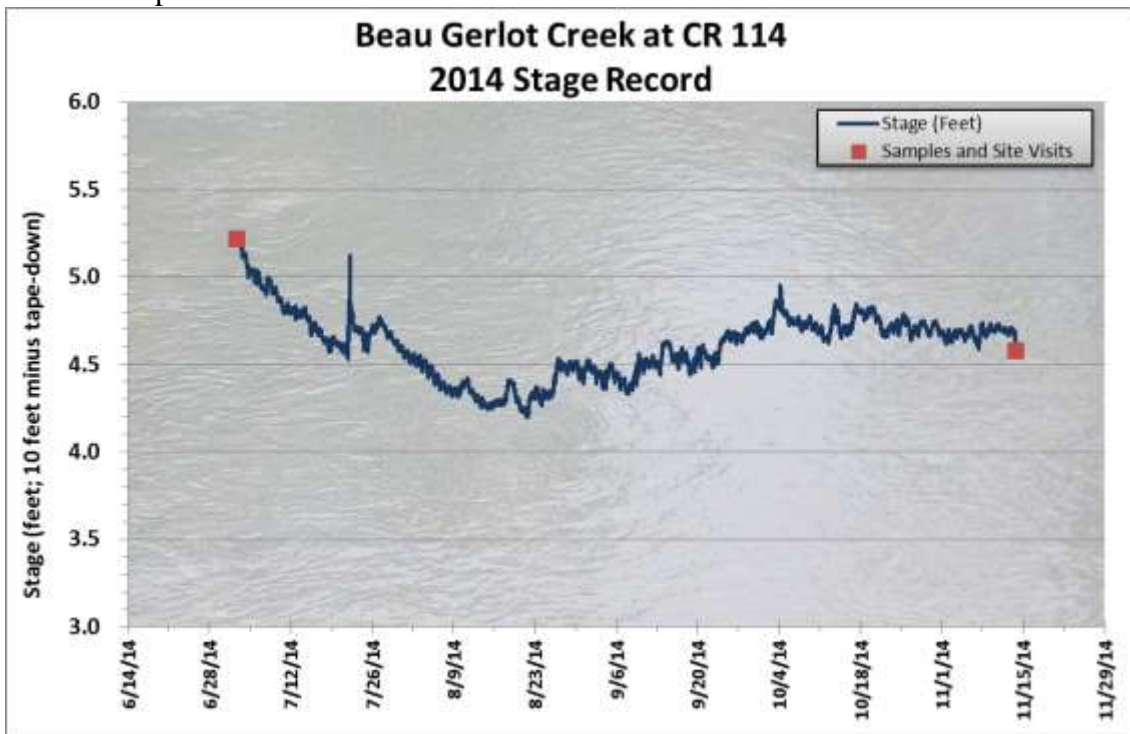
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- 2014 stage data from Poplar River at 380th Street, downstream of Fosston, was compiled and plotted.



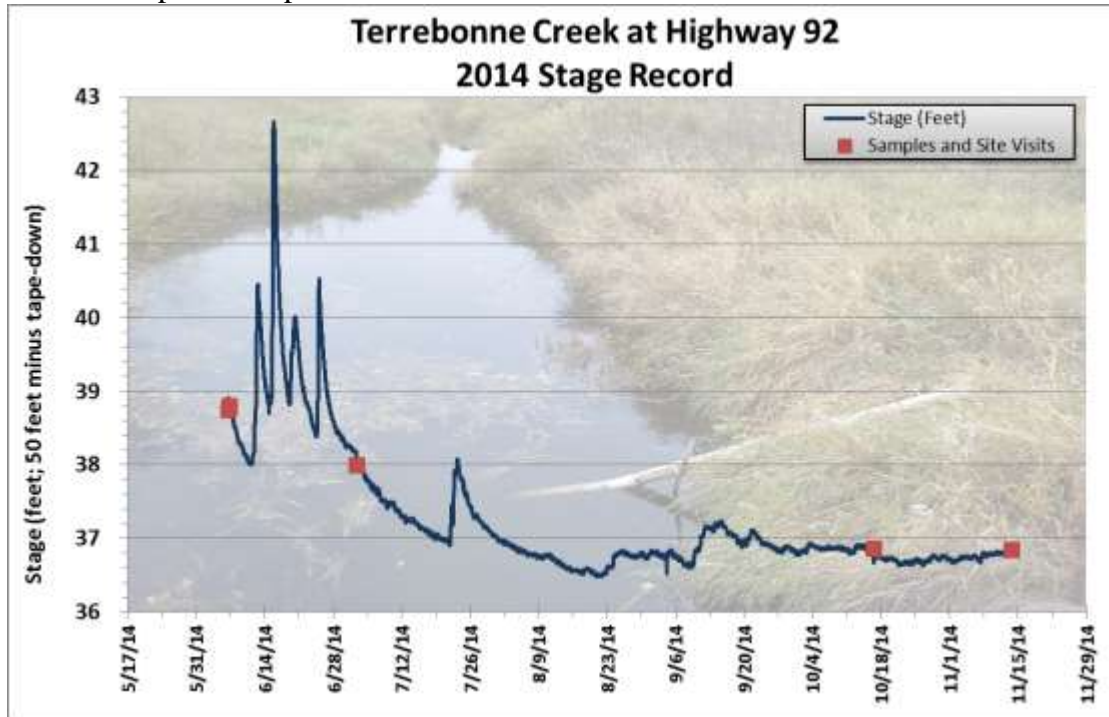
- 2014 stage data from Beau Gerlot Creek at CR114 near Terrebonne was compiled and plotted.



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- 2014 stage data from Terrebonne Creek at Highway 92 in Terrebonne was compiled and plotted.



- 2014 stage data from the Lost River at CSAH 28, north of Trail was compiled, transformed into a flow record using a rating curve, and plotted.



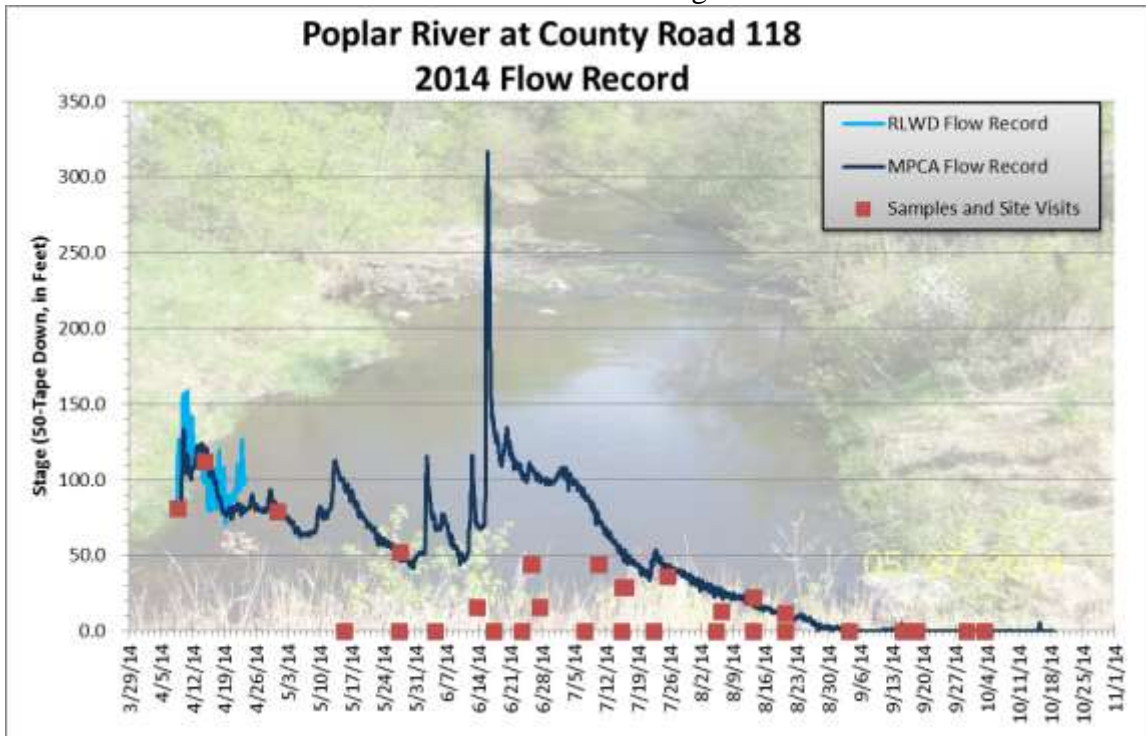
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- 2014 stage data from Judicial Ditch 73 near Rydell National Wildlife Refuge was compiled and used to calculate a flow record for the 2014 monitoring season.



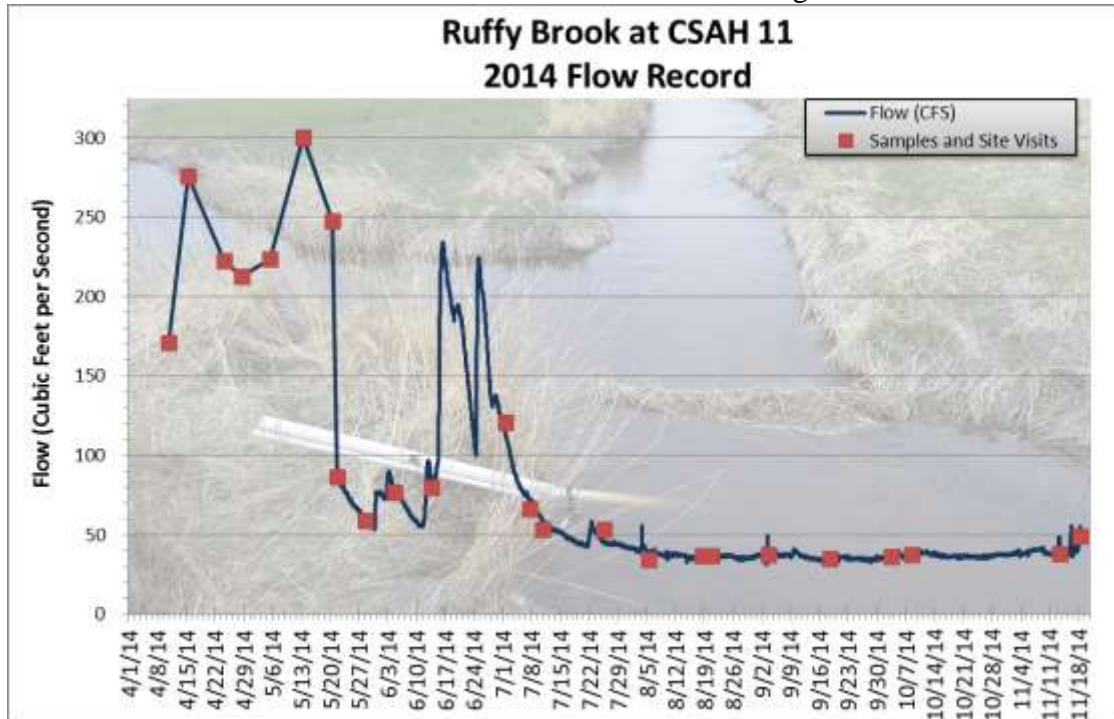
- 2014 stage data from the Poplar River at CR118 was compiled and used to calculate a flow record for the 2014 monitoring season.



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- 2014 stage data from the CSAH 11 crossing of Ruffy Brook was compiled and used to calculate a flow record for the 2014 monitoring season.



- 2014 stage data from the Lost River upstream of Pine Lake was compiled and used to calculate a flow record for the 2014 monitoring season. The HOBO water level logger malfunctioned at this site in 2014 and was repaired in preparation for the 2015 monitoring season.
- RLWD staff began deploying HOBO water level loggers in the Clearwater River watershed on March 11 of 2015.
- Objective 6 – Stressor and Pollutant Source Identification
 - The Judicial Ditch 2 portion of the Lost River, downstream of Anderson Lake, has erosion problems.
- Objective 9 – Civic Engagement
 - RLWD and MPCA staff reviewed the nearly-complete watershed-based websites that were created for WRAPs projects.

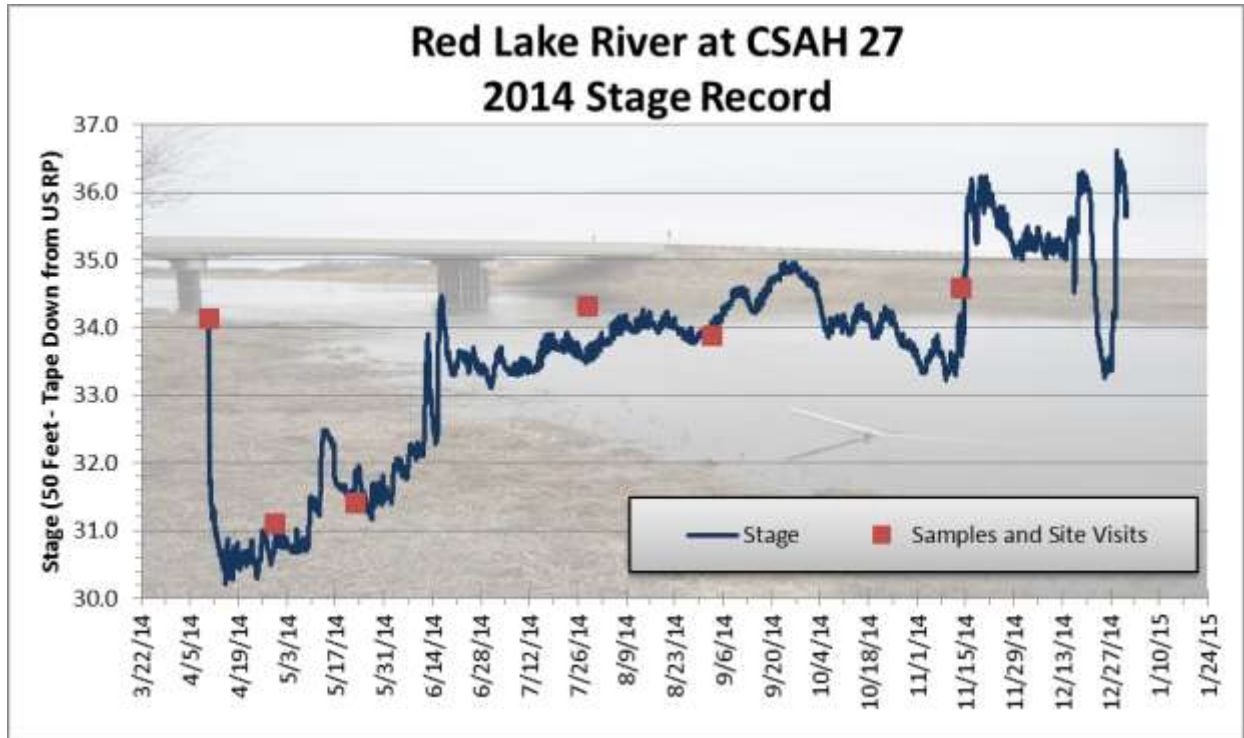
Red Lake River Watershed Assessment Project (Watershed Restoration and Protection - WRAP)

- Task 5 – Flow Monitoring
 - 2014 stage data from MPCA gages was received from MPCA staff.
 - RLWD staff began deploying HOBO water level loggers in the Red Lake River Watershed on March 11 of 2015.
 - The Red Lake River HOBO water level logger deployed at the CSAH 27 crossing that was trapped beneath the ice over the winter was retrieved, cleaned, and re-deployed. 2014 data was downloaded after the logger was cleaned.

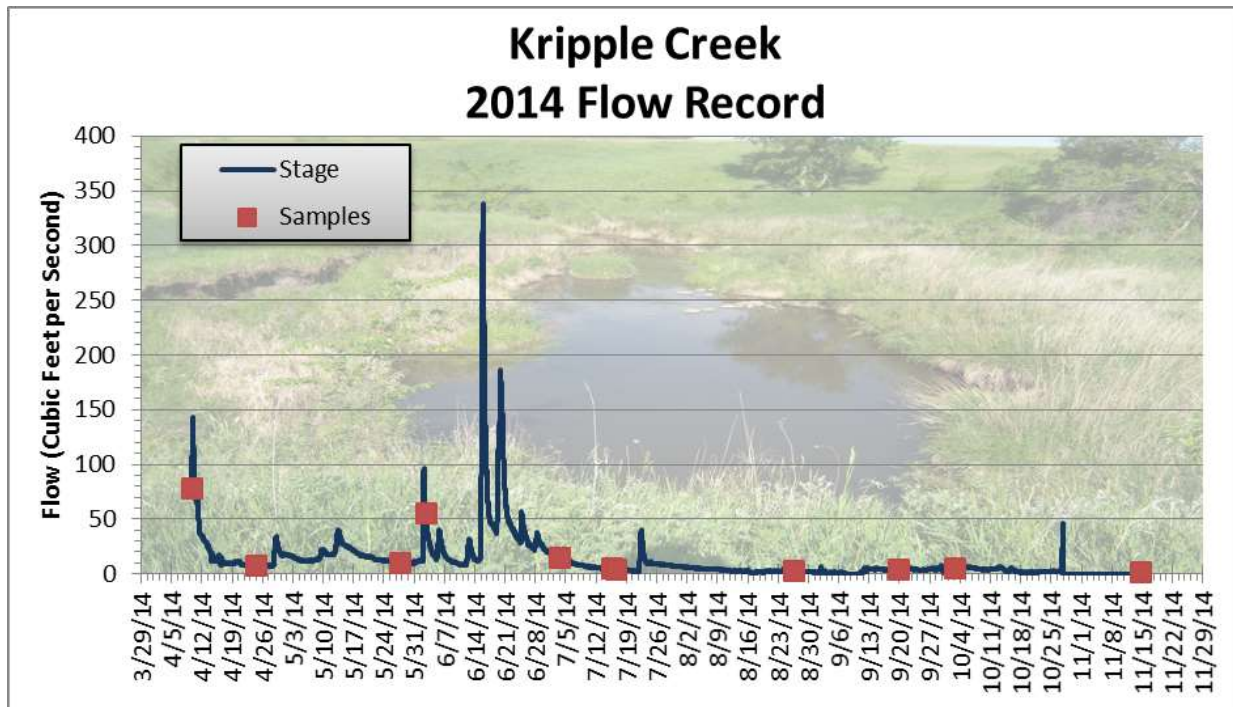
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- 2014 water level data from the Red Lake River at the CSAH 27 crossing was compiled and converted into a stage record. The flow rating curve needs some improvement before it can be used to calculate an equation for calculating a flow record. Extra attention will be paid to collecting flow measurements at this site in 2015.



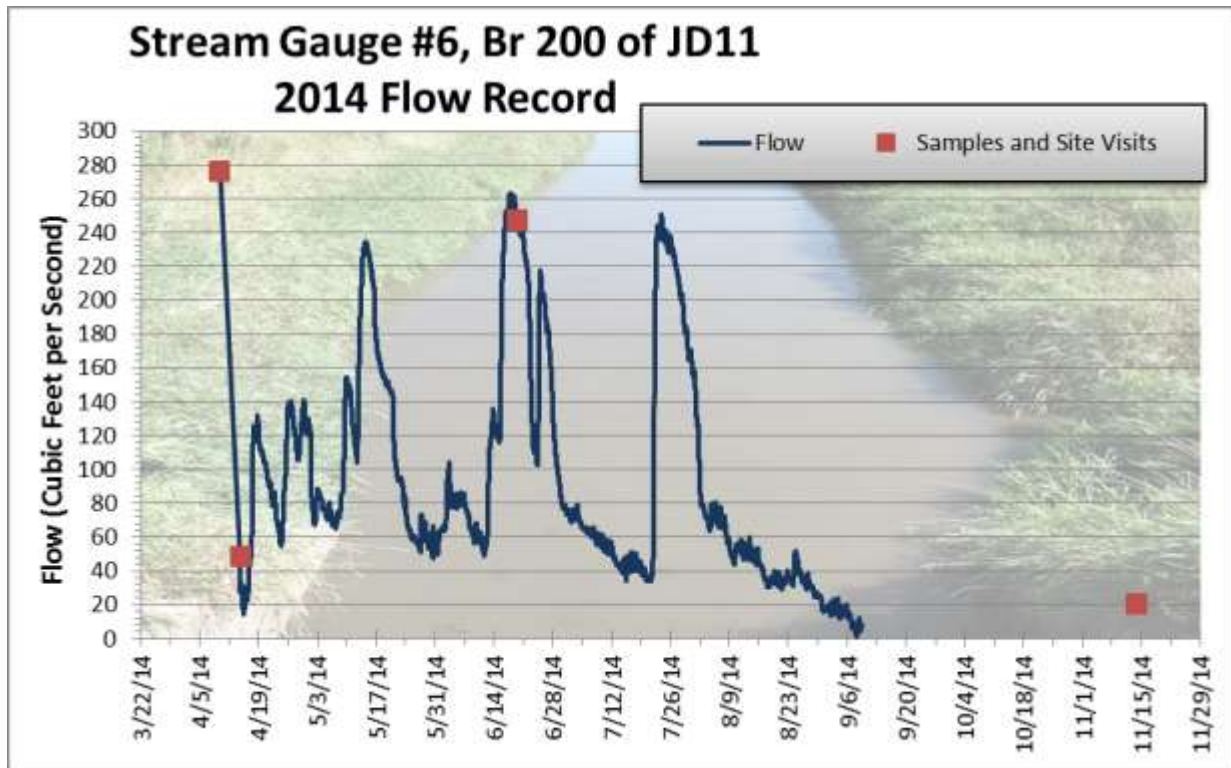
- Spring runoff was minimal this year.
- 2.45 cubic feet per second of flow was measured in Polk County Ditch 1 on March 19, 2015. This measurement fit the existing rating curve well.
- 27.5 cubic feet per second of flow was measured in the Black River on March 19, 2015. This measurement fit the existing rating curve well.
- Flow was measured in the Red Lake River at CASH 27 on March 20, 2015 (251 CFS) and March 27, 2015 (302 CFS).
- 2014 water level data from Kripple Creek was compiled and converted into stage and flow records.



- Task 7 – Stressor Identification
 - RLWD staff reviewed the Red Lake River Biotic Stressor Identification Report, typed comments, and sent them to MPCA Stressor ID staff.
- Task 9 – Data Analysis
 - E. coli data from Pennington County Ditch 96 that was collected during time of no flow was filtered out of the data set and then the remaining data was re-assessed. The remaining data still confirmed the impairment.
- Task 10 – Civic Engagement
 - RLWD and MPCA staff reviewed the nearly-complete watershed-based websites that were created for WRAPs projects.

Thief River Watershed Restoration and Protection (WRAP) Project

- Task 5 – Flow Monitoring
 - RLWD staff deployed HOBO water level loggers in the Thief River watershed in Mid-March of 2015.
 - 2014 water level data from Branch 200 of JD11 was compiled and converted into stage and flow records.



- Task 8 – HSPF Modeling
 - RLWD staff submitted data requests to MPCA staff for HSPF model outputs.
- Task 10 – Data Analysis
 - Thief River flow duration curve using data from the 05076000 USGS gage.
 - Thief River total suspended solids load duration curve.
 - Mud River pollutant identification for the dissolved oxygen impairment. Total phosphorus and biochemical oxygen demand did not correlate with dissolved oxygen levels. Chemical oxygen demand did correlate somewhat with dissolved oxygen.
- Task 11 - Civic Engagement
 - RLWD and MPCA staff reviewed the nearly-complete watershed-based websites that were created for WRAPs projects.
- Task 13 – Reports
 - RLWD staff worked on writing the Thief River Watershed TMDL Report.

Grand Marais Creek Watershed Restoration and Protection Project

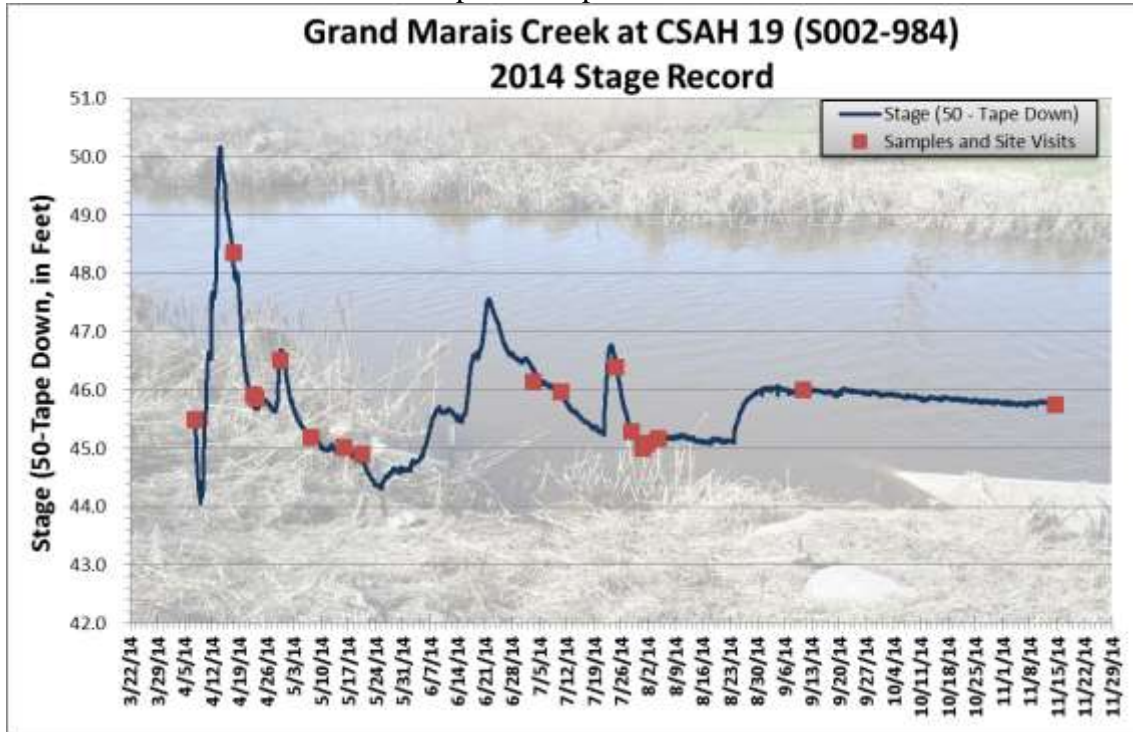
Project partners planned and prepared for a public open house meeting for the Grand Marais Creek Watershed Restoration and Protection Project. Project partners created displays and posters to display at the event. Meeting announcements were mailed.

Emmons and Olivier Resources, Inc. also worked on developing TMDL reports.

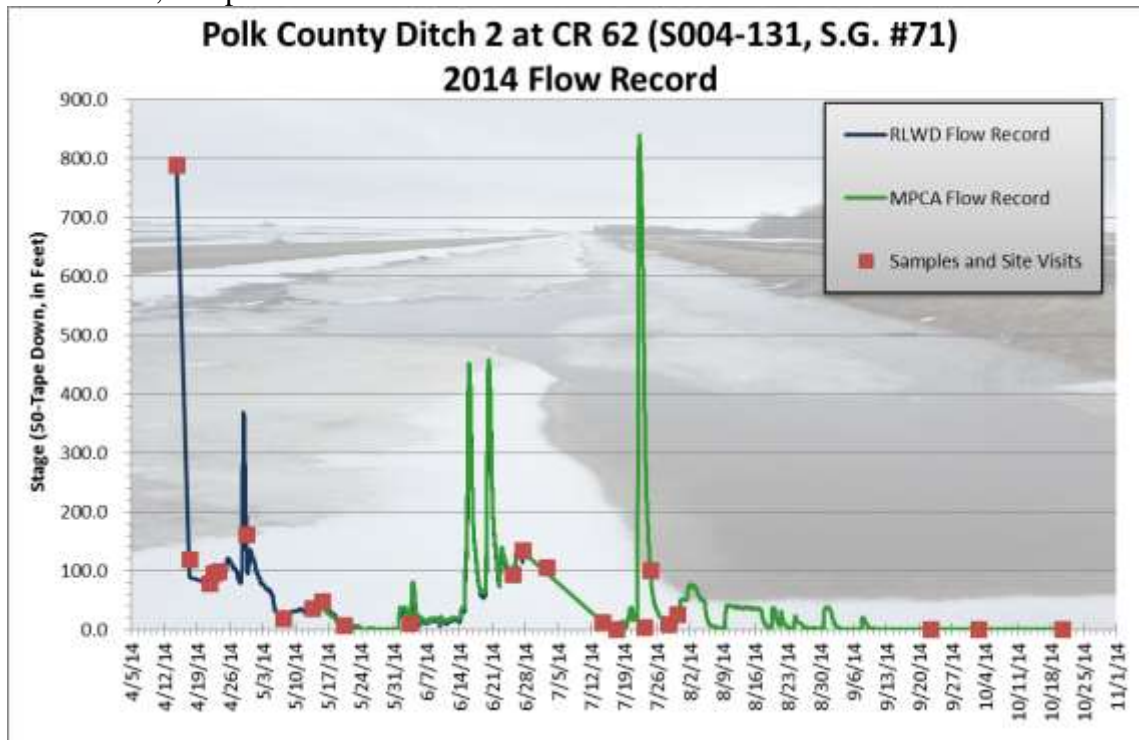
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2014 stage data from MPCA gages was received from MPCA staff. 2014 stage data from Grand Marais Creek at CSAH 19 was compiled and plotted.



2014 stage data from Polk County Ditch 2 at County Road 62 was compiled, converted into a flow record, and plotted.



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RLWD staff redeployed a HOBO water level logger at the CSAH 19 crossing of Grand Marais Creek on March 12, 2015. Unfortunately, a large beaver dam was discovered downstream of the crossing that would make rating curve development impossible at the site. A new Grand Marais Creek monitoring site was chosen at 110th Street Northwest, just upstream of the confluence with Polk County Ditch 2. The long-term monitoring site on the cut-channel at County Road 64 will no longer be regularly sampled. A rating curve was created using 2014 flow measurements made in Grand Marais Creek at CR 65. Judicial Ditch 1, Judicial Ditch 75, and County Ditch 2 were still covered with ice on March 26, 2015. The RLWD hired the Red Lake DNR to collect 4 rounds of flow measurements in the Grand Marais Creek watershed in 2015.

Other Notes

- Water quality related topics from the March 13, 2015 RLWD Board of Managers meeting minutes:
 - Brad Westerberg and Brad Kennedy, Joint Powers Board Conservation engineering staff appeared before the Board to discuss the Clean Water Fund Grant for a project located within the Judicial Ditch 72, Project No. 41 system. Plans and Specifications for installation of buffer strips, bank stabilization, culvert replacement and installation of riprap were presented to the Board. Westerberg stated that the Engineers probable cost for the project is \$119,300. The Clearwater SWCD received a Clean Water Grant in the amount of \$56,250, however with an additional \$10,000 funding available in the grant for buffer and side water inlet culvert, the total grant that may be available for this project could total \$66,250. Jesme indicated that there is a 25% match required in the grant that could be paid out of the District's Capital Project fund upon Board approval. Discussion was held in regards to the District funding the remaining balance using our Capital Project funding, specifically Project 164, Erosion Control Project. Manager Tiedemann questioned the size of the culvert to be replaced on the field crossing and if it is consistent to that of other culverts within the legal drainage system. Jesme indicated that this is an old system and we would check old ditch plans, if available and report back to the Board. Motion by Knott, seconded by Tiedemann, that upon verifying the field crossing culvert size, to pay the remaining grant match balance of approximately \$54,000 using funding set aside in our Capital Project fund Project #164. Motion carried.
 - Pennington SWCD submitted a request for a financial donation for the Area I Envirothon. The Area I Envirothon will be held on April 22, 2015, at Lake Bronson State Park. Motion by Tiedemann, seconded by Ose, to donate \$300 to the Area I Envirothon. Motion carried.
 - The Board reviewed a Contract for Services with the Red Lake Band of Chippewa Indians for assistance with water quality monitoring and stage measurements for Grand Marais Creek WRAP, Project No. 157D. Motion by Knott, seconded by Tiedemann, to authorize Administrator Jesme to sign the RLWD Contract for Services with the Red Lake Bank of Chippewa Indians for the Grand Marais Creek WRAP, Project No. 157D. Motion carried.

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- Water quality related topics from the March 27, 2015 RLWD Board of Managers meeting minutes:
 - Peter Nelson, Pennington SWCD stated that the SWCD applied for a Shoreland Buffer Inventory Grant application through BWSR to complete an inventory on the 50' buffer requirement ordinance. P. Nelson stated that his office will inventory and contact landowners regarding the ordinance. The Pennington SWCD was awarded a \$40,000 grant through BWSR that requires a 25% grant match. P. Nelson asked if the District would consider funding the 25% match in the amount of \$10,000. Motion by Knott, seconded by Tiedemann, to approve the 25% match in the amount of \$10,000 for a Shoreland Buffer Inventory Grant for the Pennington SWCD. Motion carried.
- RLWD staff created a Flickr account for sharing georeferenced photos of erosion problems and georeferenced scenic photos. Other local government staff can use this as a tool for finding areas where erosion control projects can be implemented. A map-based search for photos can be conducted at this site: <https://www.flickr.com/map>. The RLWD photos can be found at this site: <https://www.flickr.com/photos/131072259@N04/>.
- International Water Institute staff will be monitoring pollutant loads going into and out of the Brandt Impoundment. LiDAR will be used to estimate pool volumes at different elevations.

March Meetings/Events

- **March 5, 2015** – 12th Annual Red River Basin Water Quality Monitoring Training, 8:30 am - 4:00 pm at the University of Minnesota Crookston
- **March 9, 2015** – Pennington County Water Resource Advisory Committee Meeting, 9AM at the Pennington County SWCD
 - Pennington County staff are working on a ditch inventory. Ditches are being marked based on buffer needs. A mobile “app” was used to collect the data. Sloughing and animal problems were also documented.
 - Shoreland buffers
 - 50 foot buffers are required on public waters, but aren't enforced well. DNR staff presented the committee with a map of public waters within Pennington County. In addition to the Red Lake River, Thief River, Black River, and Browns Creek, the map included some smaller tributaries of those streams and rivers, like CD62.
 - Aquatic Invasive Species education ideas were discussed (signage, radio ads, workshops for teachers, educational events at fishing tournaments)
- **March 9, 2015** – Grand Marais Creek Watershed Restoration and Protection Project Technical Advisory Committee meeting and public open house event at the East Grand Forks Campbell Library
 - 1:00 – 3:00 PM - Technical Advisory Committee meeting
 - 11 people attended the Technical

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- MPCA staff will be starting to work on the Grand Marais Creek Stressor Identification Report soon, now that the Red Lake River report is nearly complete.
- The HSPF model is done and is being reviewed.
- In the geomorphologic assessment, the portion of the Brandt Channel that was constructed using a 2-stage ditch design rated fair to good in terms of stream bank stability and erosion potential.
- Try to get a GIS layer of wind erosion rates using HSPF results.
- There is a possible fish passage barrier in County Ditch 2, just upstream of the confluence with Grand Marais Creek.
 - 4:00 – 6:00 PM – Open House
- **March 16, 2015** – Red Lake Watershed District Overall Advisory Committee Meeting
 - RLWD staff gave presentations that summarized 2014 accomplishments.
- **March 17, 2015** – Red River Basin River Watch Forum at the University of Minnesota, Crookston campus
- **March 18, 2015** – One Watershed One Plan Kick-Off Meeting at the Red Lake Watershed District Office.
- **March 23-24, 2015** – Snake River and Grand Marais Creek HSPF Model Training Workshop

Upcoming Meetings/Events

- **April 8, 2015** – Marshall County Water Resources Advisory Committee Meeting
- **April 15, 2015** – Red Lake River One Watershed one Plan Advisory Committee Meeting
- **April 16, 2015** – Clearwater River Surface Water Assessment Grant site visit.
- **April 21, 2015** – One Watershed One Plan LGU planning meeting in Red Lake Falls
- **May 29, 2015** – Target date for completion of a draft watershed TMDL for the Thief River watershed.
- **June 2015** - Clearwater River Surface Water Assessment Grant sampling resumes.
- **June 8, 2015** – Pennington County Water Resource Advisory Committee Meeting, 9AM at the Pennington County SWCD
- **June 17, 2015** – One Watershed One Plan teleconference to discuss priority statements.
- **June 30, 2015** – Target date for completion of a draft Thief River Watershed Restoration and Protection Strategy (WRAPS) report
- **June 30, 2015** – Semi-annual progress reports are due for the Thief River, Red Lake River, Grand Marais Creek, and Clearwater River Watershed Restoration and Protection projects.
- **July 8, 2015** – Marshall County Water Resources Advisory Committee Meeting
- **August 2015** – Hold a technical advisory meeting to review the findings in the Thief River Watershed TMDL and WRAP re
- **September 2015** – Pennington County Outdoor Education Day
- **September 2015** – Northwest Minnesota Water Festival in Fertile and Warren
- **September 2015** – Thief River Open House Meeting
- **November 4, 2015** – Marshall County Water Resources Advisory Committee Meeting

- **December 31, 2015** – End date for the Thief River Watershed Restoration and Protection Project (extended from June 30, 2015).
- **June 30, 2016** – End date for the Red Lake River Watershed Restoration and Protection Project (extended from June 30, 2015)

Plans for early 2015

- Thief River Watershed Restoration and Protection Project.
 - Creating Stream Power Index maps.
 - Create a web page dedicated to the Thief River Watershed
 - Flow characterization and load calculations
 - Pollutant identification for reaches with dissolved oxygen impairments
 - Work on writing Watershed TMDL and WRAPS report documents
- Red Lake River Watershed Assessment Project
 - Creating Stream Power Index maps.
 - Create a webpage dedicated to the Red Lake River
 - Flow characterization
 - Work on writing Watershed TMDL and WRAPS report documents
 - Provide input during the assessment process
- Clearwater River Watershed Restoration and Protection Project
 - Finish compiling 2014 continuous dissolved oxygen data
 - Compile existing data and summarize existing reports
 - Plan 2015 monitoring
 - Create a webpage dedicated to the Clearwater River watershed
- Grand Marais Creek Watershed Restoration and Protection project
 - Technical advisory committee and public open house meetings.

Quote of the Month:

“Be happy. It’s one way of being wise.”
– Sidonie Gabrielle Collette

“Only a fool knows everything. A wise man knows how little he knows.”
– 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.