

By Corey Hanson, Red Lake Watershed District Water Quality Coordinator. 3/6/2017.

- ✓ Watershed Restoration and Protection project updates
- ✓ Clearwater River Water Quality Assessment
- ✓ Upper/Lower Red Lakes Water Quality Assessment
- ✓ Long-Term Monitoring

### **Long-Term Monitoring**

- RLWD water quality staff completed a round of sampling for the RLWD long-term monitoring program in May 2016. Water quality was exceptionally good at most sites in early and mid-May 2016. Concentrations of pollutants increased in some streams after rainfall events later in the month after some significant rainfall events. Portions of the watershed received multiple inches of rain on May 31, 2016.



- High concentrations of E. coli bacteria were found in:
  - Chief's Coulee at Dewey Ave within the City of Thief River Falls
  - Browns Creek at CR 101
  - Poplar River at CR 118
  - Poplar River at 310<sup>th</sup> St. SE
  - Poplar River at CSAH 30, north of Fosston
  - Terrebonne Creek at CSAH 92
  - Grand Marais Creek at 130<sup>th</sup> St. NW
  - Grand Marais Creek at 110<sup>th</sup> St. NW
  - Darrigan's Creek
  - O' Briens Creek
  - North Cormorant River at CSAH 36
  - Judicial Ditch 73 upstream of Rydell National Wildlife Refuge

- Clearwater River in Red Lake Falls (runoff event)
- Clearwater River at the CSAH 12 crossing near Terrebonne (runoff event)
- Clearwater River, north of Plummer (runoff event)
- Clearwater River at CR 127 (runoff event)
- Clearwater River at CSAH 5
- Little Black River at CR 102
- High concentrations of total phosphorus were found in:
  - North River Nutrient Region (>0.05 mg/L TP):
    - Darrigan's Creek
    - O' Briens Creek
    - Blackduck River
    - North Cormorant River at CSAH 36
    - South Cormorant River
    - Ruffy Brook at CSAH 11
    - Clearwater River at CSAH 2
    - Silver Creek at CR 111
  - Central River Nutrient Region (>0.1 mg/L TP):
    - Chief's Coulee at Dewey Ave in the City of Thief River Falls
    - Poplar River at CR 118
    - Poplar River at CSAH 30, near Fosston
    - Clearwater River, north of Plummer
    - Pennington County Ditch 21 at 135th Ave NE
    - Pennington County Ditch 70 (1.9 mg/L)
      - An investigative sample was collected because the ditch was discharging green water into the Red Lake River (see photo, below).
  - South River Nutrient Region (>0.15 mg/L TP):
    - Burnham Creek at 320<sup>th</sup> Ave
    - Grand Marais Creek at 130th St. NW
    - Grand Marais Creek at 110th St. NW
    - Browns Creek at CR 101



- A notably low total suspended solids (TSS) concentration was found at the CSAH 11 Bridge over the Red Lake River (on a reach that is impaired by high turbidity).
- High TSS concentrations (>30 mg/L) were found in:
  - Clearwater River at CR 127
  - Branch A of Judicial Ditch 21
- Low dissolved oxygen concentrations (<5 mg/L) were found in:
  - Chief's Coulee at Dewey Ave in the City of Thief River Falls
- High biochemical oxygen demand concentrations were found in:
  - Poplar River at CSAH 30, north of Fosston (143 mg/L)
  - Mud River at Hwy 89
  - Red Lake River at CSAH 219 (Highlanding)
- A large, 4-5 foot-high beaver dam was found at the 486<sup>th</sup> St. crossing of the Lost River, downstream of the Pine Lake outlet.
- Water quality staff encountered dust storms on May 9, 2016.



### **Thief River Watershed Restoration and Protection (WRAP) Project**

- Task 11 – Civic Engagement
  - RLWD, MPCA, and RMB Environmental Laboratories staff worked on the planning of a June open house event for the Thief River WRAP project.
- Task 13 – Reports
  - Comments on the Thief River Watershed Restoration and Protection Strategy document were received from the MPCA.
  - The Thief River WRAPS document was reviewed and edited to address those comments from the MPCA. Edits were also made to the Thief River Watershed Total Maximum Daily Load report.
  - A new draft of the Thief River WRAPS was fine-tuned, finished, and shared with the MPCA and the Thief River WRAPS Technical Advisory Committee on May 19, 2016.
  - Stephanie Klamm of the Minnesota Department of Natural Resources very promptly reviewed and commented on the draft WRAPS report. Her comments were addressed with edits to the report.
  - Additional comments from high-level MPCA staff were used to make further improvements to the Thief River WRAPS document. The comments that were received from an MPCA manager were very helpful for improving the document. Some of the comments from MPCA staff have been very positive, such as: “I have been told by a few that this looks like the best WRAPS that has been done to date! Good job!”
  - MPCA and RLWD staff learned that the dissolved oxygen impairment along the lower Thief River (Agassiz Pool to the Red Lake River) was being removed from the 303(d) List of Impaired Waters. Information regarding that impairment was removed from the Thief River TMDL (restoration plan) and utilized differently in the Thief River WRAPS. The reach was no longer officially impaired, but is a high priority for protection efforts due to the recent impairment and relatively frequent low DO readings that have been found in continuous DO monitoring data.

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

- Objective 1 – Existing Data
  - Lake information (depth profiles, etc) for lakes within the Clearwater River watershed was gathered and sent to MPCA assessment staff.
  - The MPCA is assessing the Clearwater River watershed in 2016.
  - RLWD staff provided MPCA assessment staff with all available continuous dissolved oxygen data that was collected within the 2006-2015 assessment period, draft TMDL reports from previous TMDL studies conducted within the Clearwater River watershed, assessment statistics from continuous dissolved oxygen data, and the draft Clearwater River Bioassessment report.
  - RLWD staff prepared for the assessment process by calculating assessment statistics (exceedance rates, summer averages) for all of the Clearwater River

assessment units (reaches) with sufficient data. A spreadsheet with all of the water chemistry data collected within the Clearwater River watershed through 2015 was obtained. Thank you to MPCA EQuIS Team Member, Jean Garvin, for providing the data. Continuous dissolved oxygen data was also used in the RLWD's assessment of Clearwater River watershed conditions. To facilitate proper application of tiered aquatic life use (TALU) standards, the MPCA split multiple existing reaches into new, separate assessment units. This was mostly done to separate channelized reaches from natural portions of streams. No maps of the new reaches were available, so some "reverse engineering" was necessary to understand the extents of the new reaches. Results of the assessment calculations were compiled in a large table in an Excel spreadsheet.

- RLWD staff participated in Watershed Assessment Team meetings.
- The following tables summarize the existing impairments in the Clearwater River watershed and potential new impairments that have been identified during the assessment process. The list of new impairments is not an official draft list, but it is a summary of what the data is currently showing. A formal draft list of impaired waters will not be released by the MPCA for the results of this assessment until 2018.

# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

May 2016

Current Impairments in the Clearwater River Watershed						
AUID	Reach Name	Reach Description	Miles	Aquatic Life	Aquatic Recreation	Current Impairments
09020305-649	Clearwater River	Clearwater Lk to Unnamed cr	4.9	FS	FS	Hg in fish tissue
09020305-650	Clearwater River	Unnamed cr to Ruffy Bk	13.17	FS	FS	Hg in fish tissue
09020305-654	Clearwater River	Unnamed cr to Clearwater Lk	5.82	FS	No Data	Hg in fish tissue, ammonia - will not CF
09020305-529	Lost River	T148 R38W S17, south line to Pine Lk	9.87	NS	NS	DO
09020305-518	Poplar River	Spring Lk to Highway 59	39.28	NS	FS	DO
09020305-508	County Ditch 57	Unnamed ditch to Clearwater R	0.36	NS	FS	DO
09020305-509	Walker Brook	Walker Brook Lk to Clearwater R	5.23	NS	No Data	DO
09020305-541	Unnamed creek	Eighteen Lk to Bee Lk	1.31	NA	No Data	DO
09020305-542	Unnamed creek	Mitchell Lk to Badger Lk	0.36	NA	IF	DO
09020305-543	Poplar River Diversion	Unnamed ditch to Badger Lk	1.48	NS	IF	DO
09020305-574	Terrebonne Creek	CD 4 to CD 58	3.23	IF	NS	E. coli
09020305-527	Silver Creek	Headwaters to Anderson Lk	15.65	NS	NS	Fecal coliform
09020305-513	Ruffy Brook	Headwaters to Clearwater R	26.41	FS	NS	Fecal coliform
09020305-653	Clearwater River	T148 R35W S31, west line to Unnamed cr	11.84	FS	FS	Hg in fish tissue
09020305-517	Clearwater River	Headwaters to T148 R36W S36, east line	30.32	NS	FS	Hg in fish tissue, DO
09020305-501	Clearwater River	Lower Badger Cr to Red Lake R	7.17	NS	FS	Hg in fish tissue, Turbidity
09020305-511	Clearwater River	Lost R to Beau Gerlot Cr	11.76	NS	FS	Hg in fish tissue, Turbidity
09020305-648	Clearwater River	JD 1 to Lost R	25.1	NS	FS	DO - will not CF
09020305-647	Clearwater River	Ruffy Bk to JD 1	34.62	NS	NS	DO - will not CF

Hg = Mercury | DO = Dissolved Oxygen | FS = Full Support | NS = Not Supporting | IF = Insufficient Data | CF = Carried Forward

- Cameron Lake is still listed as impaired by eutrophication. Two new eutrophication impairments have been identified on Long Lake (04-0295-00) and Stony Lake (15-0156-00). Cross and Hill River Lakes are considered “vulnerable” and should receive a high priority for protection efforts due to fish index of biological integrity scores that were within the “confidence interval” (unclear whether they were impaired or unimpaired - borderline).

# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

May 2016

Anticipated New Impairments from the 2016 Assessment of the Clearwater River Watershed						
AUID	Reach Name	Reach Description	Miles	Aquatic Life	Aquatic Recreation	New Impairments
09020305-502	Lower Badger Creek	CD 14 to Clearwater R	12.66	FS	NS	E. coli
09020305-504	Poplar River	Highway 59 to Lost R	14.25	FS	NS	E. coli, DO?
09020305-512	Lost River	Pine Lk to Anderson Lk	10.23	FS	NS	E. coli
09020305-517	Clearwater River	Headwaters to T148 R36W S36, east line	30.32	NS	FS	Eutrophication?
09020305-518	Poplar River	Spring Lk to Highway 59	39.28	NS	FS	Fish, Invertebrates, Eutrophication?
09020305-526	Unnamed creek	Headwaters to Silver Cr	1.68	NS	NS	DO, E. coli
09020305-527	Silver Creek	Headwaters to Anderson Lk	15.65	NS	NS	Invertebrates
09020305-529	Lost River	T148 R38W S17, south line to Pine Lk	9.87	NS	NS	E. coli
09020305-530	Lost River	Unnamed cr to T148 R38W S20, north line	4.46	NS	NS	DO, E. coli
09020305-539	Hill River	Hill River Lk to Lost R	34.06	NS	NS	Fish, E. coli
09020305-545	Unnamed creek (Nassett Creek)	T148 R38W S28, south line to Lost R	1.65	NS	NS	DO, TSS, E. coli
09020305-549	Unnamed creek	Tamarack Lk to Maple Lk	0.52	NA	FS	DO?
09020305-550	Judicial Ditch 73	Unnamed ditch to Tamarack Lk	1.7	NS	NS	E. coli, DO
09020305-561	Unnamed creek	Gerdin Lk to Poplar R Diversion	2.35	NS	No Data	fish
09020305-574	Terrebonne Creek	CD 4 to CD 58	3.23	IF	NS	DO?
09020305-578	Brooks Creek	Unnamed cr to Hill R	1.95	IF	NS	E. coli
09020305-645	Lost River	Anderson Lk to Unnamed cr	12.27	NS	FS	Fish
09020305-647	Clearwater River	Ruffy Bk to JD 1	34.62	NS	NS	TSS, E. coli, Eutrophication?
09020305-648	Clearwater River	JD 1 to Lost R	25.1	NS	FS	TSS
09020305-651	Beau Gerlot Creek	Upper Badger Cr to -96.1947 47.8413	8.26	IF	NS	E. coli
09020305-652	Beau Gerlot Creek	-96.1947 47.8413 to Clearwater R	2.02	NS	IF	Fish, Invertebrates
09020305-653	Clearwater River	T148 R35W S31, west line to Unnamed cr	11.84	FS	FS	DO?
09020305-655	Hill River	Cross Lk to Unnamed cr	4.91	NA	No Data	DO?
09020305-656	Hill River	Unnamed cr to Hill River Lk	8.18	NS	FS	Fish, DO?
09020305-658	County Ditch 23	-96.1479 47.8855 to Clearwater R	1.98	NS	No Data	Fish

? = Monitoring data indicates and impairment, but the impairment was not identified in the MPCA's initial assessment. This could be a violation of the standard that was discovered through the deployment of dissolved oxygen (DO) monitoring equipment. The MPCA may not have listed the water chemistry impairment because aquatic life samples met expectations.

Hg = Mercury | DO = Dissolved Oxygen | FS = Full Support | NS = Not Supporting | IF Insufficient Data

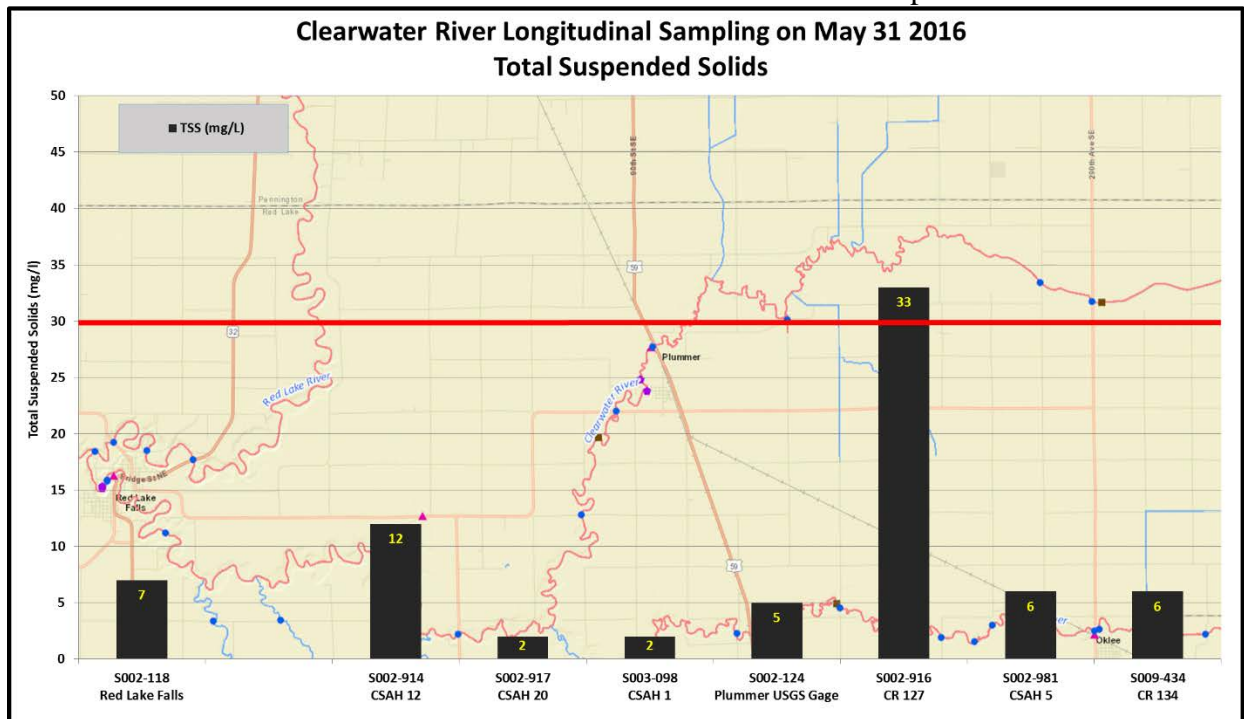
- Objective 2 – Water Quality Sampling
  - High concentrations of E. coli bacteria (>126 MPN/100ml) were found in:
    - Clearwater River in Red Lake Falls
    - Clearwater River at CSAH 12, near Terrebonne
    - Clearwater River, north of Plummer
    - Clearwater River at CR 127
    - Clearwater River at CSAH 5
    - Poplar River at 310<sup>th</sup> St. SE

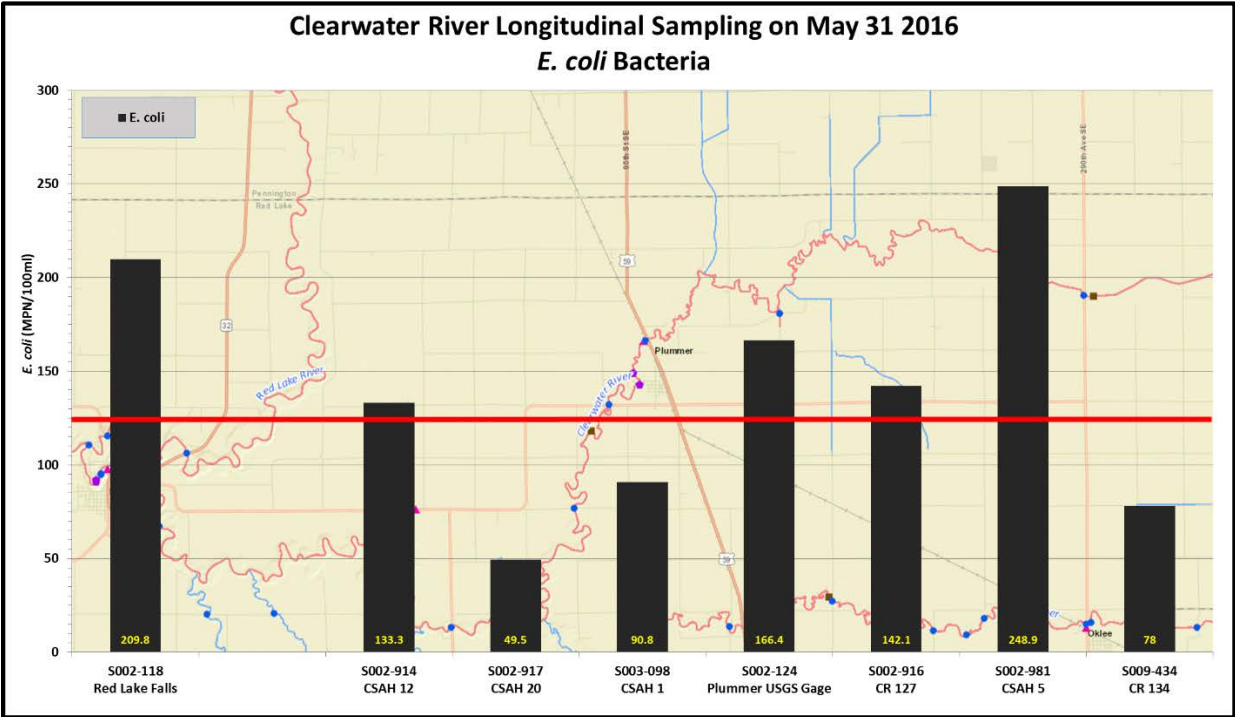
- High concentrations of total phosphorus were found in:
  - North River Nutrient Region (>0.05 mg/L):
  - Central River Nutrient Region (>0.1 mg/L):
    - Clearwater River, north of Plummer
    - Clearwater River at CSAH 20, south of Plummer
    - Clearwater River at CSAH 12, near Terrebonne
    - Poplar River at 310<sup>th</sup> St SE
- Objective 6 – Stressor and Pollutant Source Identification
  - Wind erosion and a lack of buffer strips remain problems in the watershed.

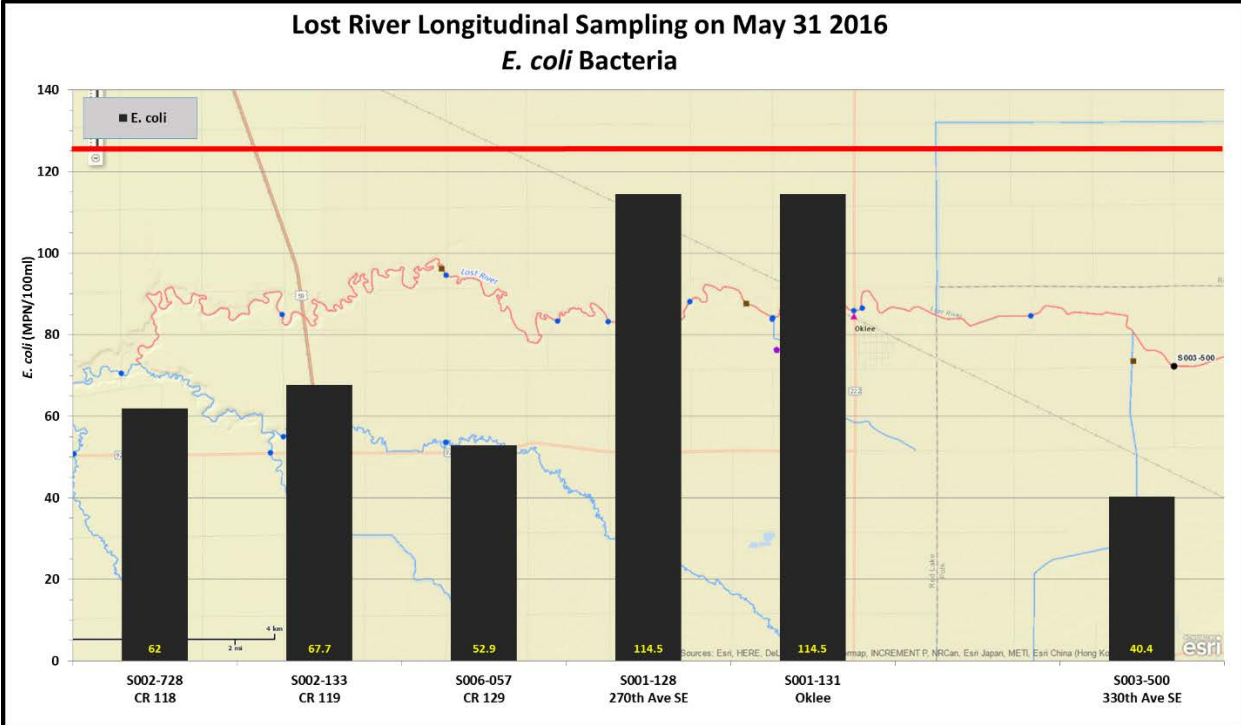




- Longitudinal samples were collected along the Clearwater River and the Lost River on May 31, 2016 after a runoff event. Higher concentrations of pollutants were found in the upstream portion of the Clearwater River that was sampled. Plumes of sediment-laden water were seen where drainage ditches emptied into the Clearwater River. The Lost River results, however, were unremarkable (a good thing). All of the samples met standards. The maximum total suspended solids concentration in the Lost River on this day was just 3 mg/L. The maximum *E. coli* bacteria concentration was 114.5 MPN/100ml and total phosphorus topped-out at 0.42 mg/L. The most significant increase in pollutants in the Lost River was an increase in *E. coli* bacteria from sources upstream of Oklee.



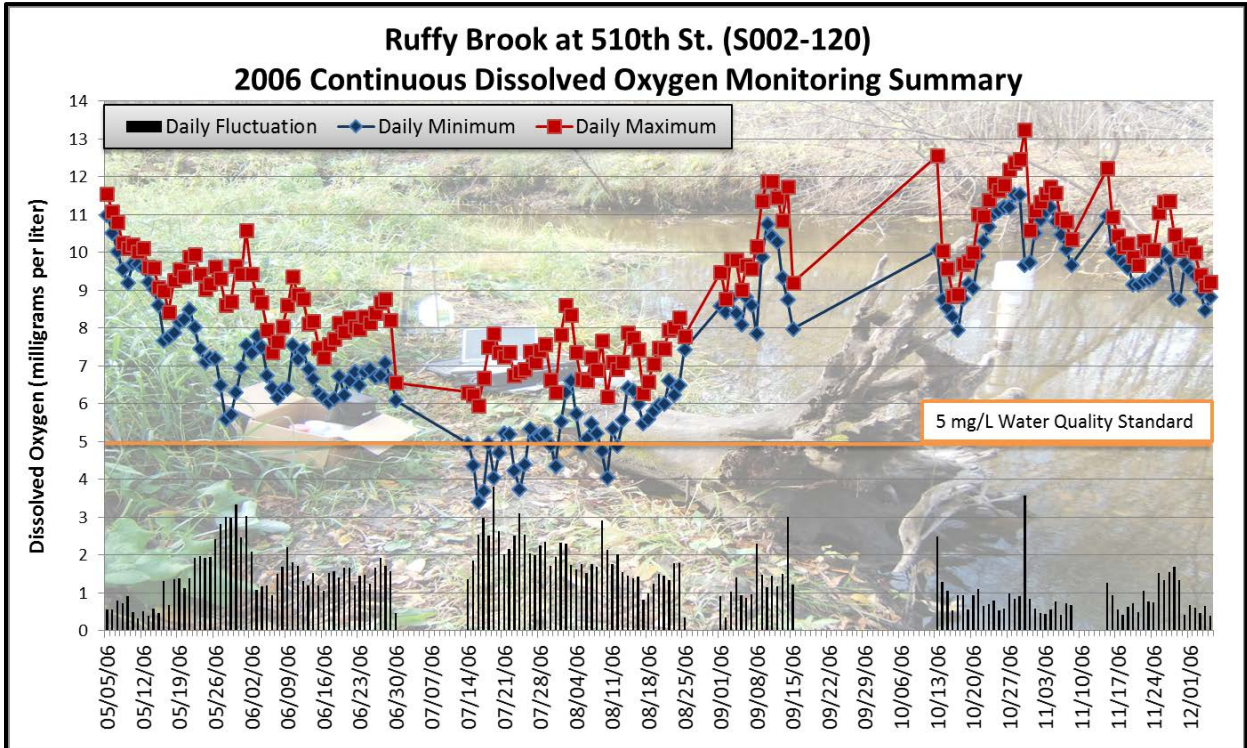


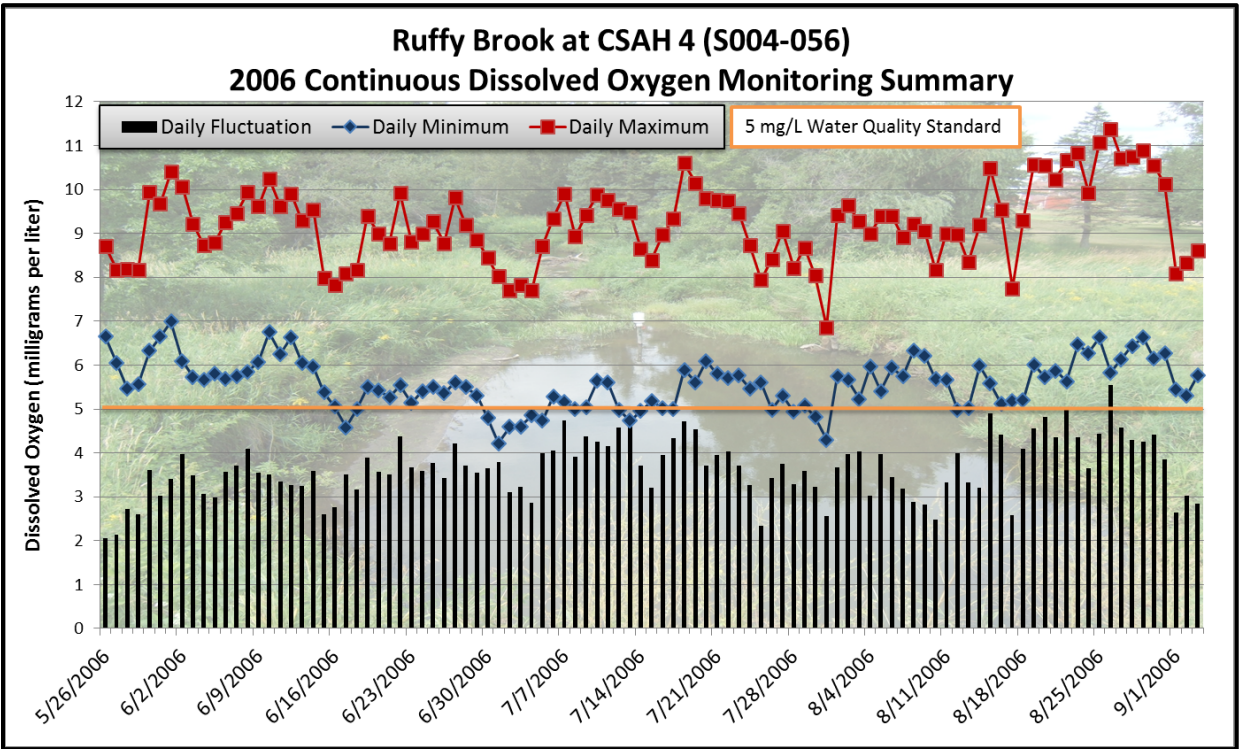
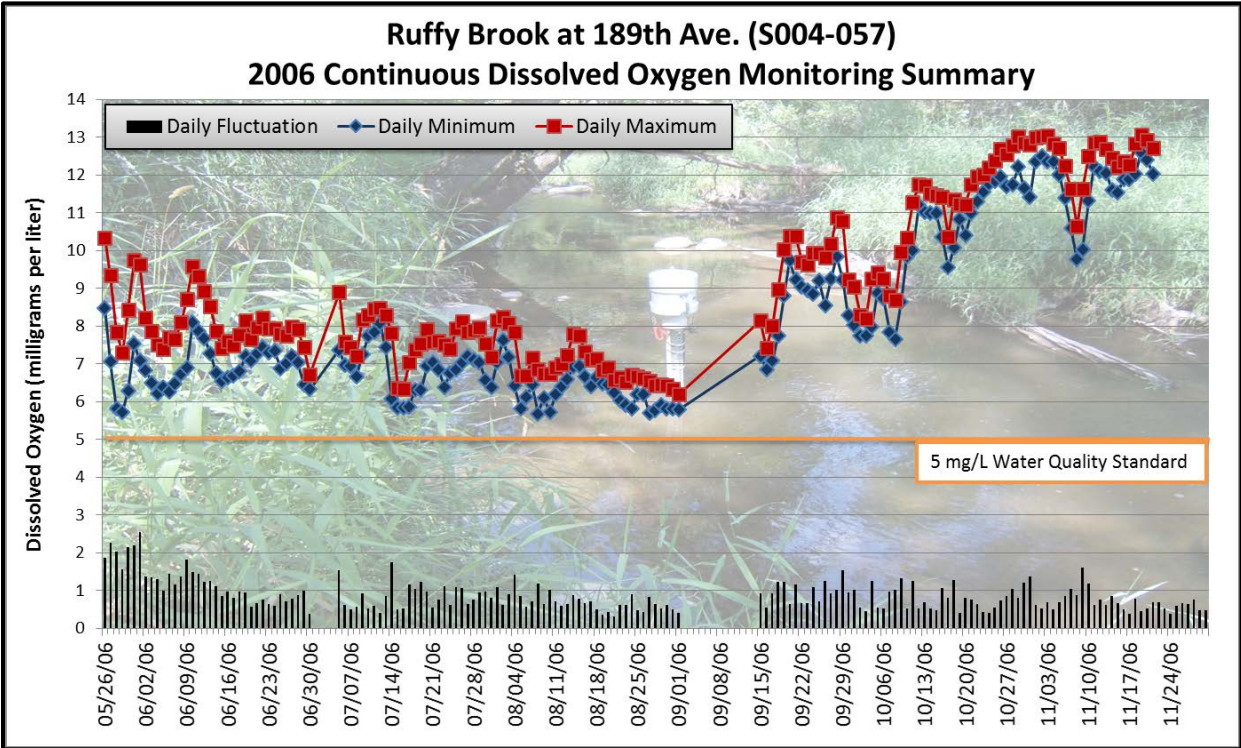


- MPCA staff shared a rough draft Clearwater River Stressor Identification report. MPCA, DNR, and RLWD staff discussed plans for 2016 data collection on biologically impaired reaches within the Clearwater River watershed. The DNR will assess fluvial geomorphology (stream channel stability) along those impaired

segments of streams. The RLWD will collect continuous dissolved oxygen records and water chemistry samples along those reaches.

- Objective 7 – Data Entry
  - Continuous dissolved oxygen data compilation was completed so that the data could be used during the 2016 water quality assessment.
  - Ruffy Brook dissolved oxygen data from a previous study was compiled and shared with MPCA staff (S002-120 at 510<sup>th</sup> St, S004-057 at 189<sup>th</sup> Ave, and S004-056 at CSAH 4).





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

- Task 5 – Geomorphology
  - DNR staff completed a draft Red Lake River Watershed Fluvial Geomorphology report. RLWD staff reviewed the report.
- Task 7 – Stressor Identification
  - RLWD staff visited the branch of the Pennington County Ditch 96 drainage system to identify possible reasons for the low fish index of biological integrity (F-IBI) scores that led to the impairment listing of that reach. The in-stream habitat looked okay, for a ditch. A meandering channel had formed in the bottom of the ditch and there was some gravel/cobble. The water flowing in the ditch was clear. Fish passage and a lack of flow have probably limited fish populations in the reach more than in-stream habitat or pollution. The reach is lacking a proper buffer along the east bank of the ditch, however.
- Task 9 – Data Analysis

A flow record was calculated for the AUID 09020303-558 reach of the Black River (between the channelized reach and the Little Black River). This reach is considered impaired due to low Fish Index of Biological Integrity (F-IBI) scores, low Macroinvertebrate Index of Biological Integrity (M-IBI) scores, low dissolved oxygen, and high concentrations of E. coli bacteria. No continuous stage record has been compiled for any sites along this reach. The Red Lake County Road 101 (S008-112) crossing of the Black River is the furthest downstream crossing within this reach that is safe to monitor. The CSAH 13 crossing is the furthest downstream crossing. The CSAH 13 crossing would not be a good site for TMDL establishment and future monitoring due to safety concerns. The CSAH 13 crossing is located at a narrow bridge within a relatively steep river valley that results limited visibility for oncoming traffic. The landowner on the north side of the CSAH 13 crossing, Don Shirrick, has threatened State monitoring staff in the past.

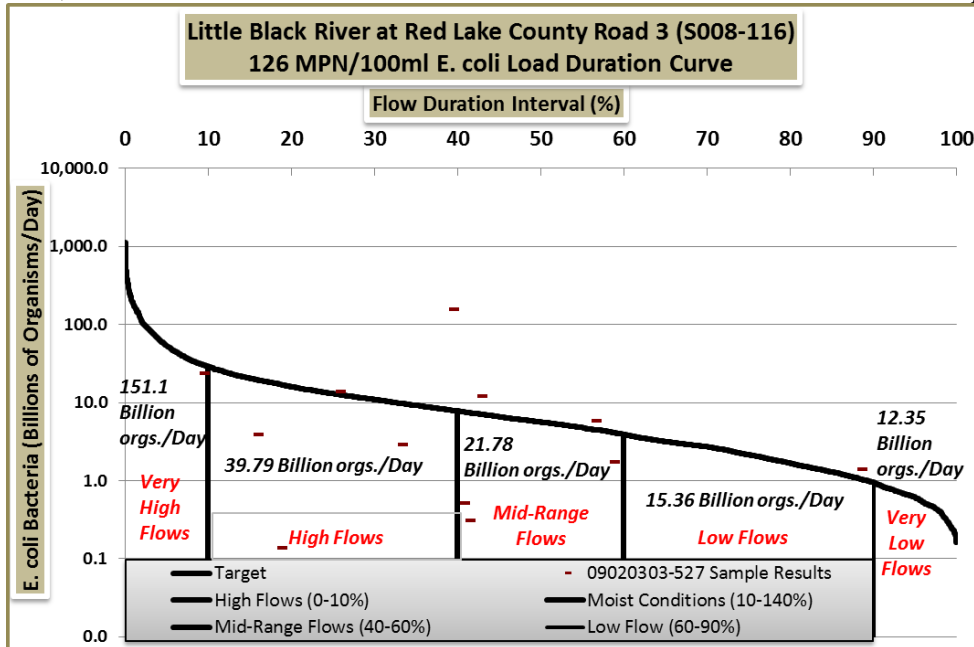
The drainage area of the CR 101 crossing was delineated. That drainage area delineation was used to calculate a drainage area weighted flow record from a 1996-2009 flow record that was simulated by the Red Lake River HSPF Model. The simulated and calculated flow record for the S003-943 (140<sup>th</sup> St. SW) monitoring site on the 09020303-558 reach of the Black River was used to create a load duration curve and TMDL calculations for that reach's E. coli impairment. Because the E. coli impairment of the 09020303-558 reach of the Black River was found in data collected after 2009, but no flow data exists beyond that year, current loads and necessary load reductions could not be calculated for this reach.



# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

May 2016

Drainage area delineation and area-weighted flow record calculations were completed for the E. coli-impaired reach of the Little Black River (09020303-527) using simulated 1996-2009 flow data from the Red Lake River HSPF model. A load duration curve and TMDL allocations were created and calculated for the monitoring site number S008-116 at the Red Lake County Road 3 crossing of the Little Black River. Because there was limited concurrence of flow and E. coli data, current loads could not be estimated and load reductions could not be prescribed.



Drainage Area (square miles):	19.7	<b>Loading Capacity and Load Allocations for E. coli in the Little Black River at Red Lake County Road 3 (S008-116)</b>				
Monitoring Site Flow record used to develop flow zones and loading capacities: S008-116 (EQuIS)						
%MS4 Urban:	0.00	<b>Duration Curve Zone</b>				
Total WWTF Design Flow (mgd):	0.00	<b>Very High</b>	<b>High</b>	<b>Mid-Range</b>	<b>Low</b>	<b>Very Low</b>
TMDL Component		Values expressed as Billions of Organisms per Day				
<b>TOTAL DAILY LOADING CAPACITY</b>		151.10	39.79	21.78	15.36	12.35
<b>Wasteload Allocation</b>						
Permitted Wastewater Treatment Facilities		0	0	0	0	0
Communities Subject to MS4 NPDES Requirements		0	0	0	0	0
Livestock Facilities Requiring NPDES Permits		0	0	0	0	0
"Straight Pipe" Septic Systems		0	0	0	0	0
<b>Reserve Capacity</b>		0.00	0.00	0.00	0.00	0.00
<b>Daily Load Allocation</b>		<b>135.99</b>	<b>35.81</b>	<b>19.60</b>	<b>13.83</b>	<b>11.12</b>
<b>Daily Margin of Safety</b>		15.11	3.98	2.18	1.54	1.24
		Values expressed as Billions of Organisms per Day				
<b>TOTAL MONTHLY LOADING CAPACITY</b>		151.10	39.79	21.78	15.36	12.35
<b>Wasteload Allocation</b>						
Permitted Wastewater Treatment Facilities		0%	0%	0%	0%	0%
Communities Subject to MS4 NPDES Requirements		0%	0%	0%	0%	0%
Livestock Facilities Requiring NPDES Permits		0%	0%	0%	0%	0%
"Straight Pipe" Septic Systems		0%	0%	0%	0%	0%
<b>Reserve Capacity</b>		0%	0%	0%	0%	0%
<b>Load Allocation</b>		90%	90%	90%	90%	90%
<b>Margin of Safety</b>		10%	10%	10%	10%	10%



Trend analysis was completed for sites or small, clustered groups of sites within the Red Lake River watershed. The Red Lake River in Crookston has shown improvement for several parameters, except for samples collected during early spring runoff in March and E. coli bacteria.

Trends of Seasonal Averages Using Seasonal Mann-Kendall Analysis				
Red Lake River Crookston Site S002-080/05079000	Total Suspended Solids	Dissolved Oxygen	Total Phosphorus	E. coli
Years	1994-2014	1992-2014	1992-2014	2005-2014
Annual Average	X	X	X	X
April	↓	X	↓	X
May	X	↑	X	X
June	X	X	X	↑↑
July	X	X	X	↑↑
August	X	X	X	X
September	X	+	X	X
October	X	X	↓	X
November - March	↑	X	X	X
X = No Trend				
↑↑ = Upward Trend (Getting Better)				
↓ = Downward Trend (Improvement)				
+ = Strong Upward Trend (Getting Significantly Better)				
↑↑ = Upward Trend (Getting Worse)				

Dissolved oxygen levels have improved in Burnham Creek, although much improvement is still needed. Total phosphorus and E. coli concentrations have been increasing, however.

Trends of Seasonal Averages Using Seasonal Mann-Kendall Analysis				
(Lower) Burnham Creek At 270th Ave SW, 320th Ave SW, & 270th St. SW Site S002-972, S007-058, S002-081	Total Suspended Solids	Dissolved Oxygen	Total Phosphorus	E. coli
Years	1992-2014	1992-2014	1992-2014	2005-2014
Open Water (Apr. - Oct.)	X	X	↑	↑+
April	X	X	X	X
May	X	X	X	X
June	X	↑	↑	↑+
July	X	X	X	↑
August	X	X	X	X
September	X	X	X	X
October	X	↑	X	X
November - March	X	X	X	X
X = No Trend				
↑ = Upward Trend (Getting Better)				
↑+ = Strong Upward Trend (Getting Significantly Worse)				
↑ = Upward Trend (Getting Worse)				

It is unclear how much of the trends in monitoring results from the Red Lake River in Thief River Falls are due to a change in the RLWD sampling site from upstream of the dam at 1<sup>st</sup> Street to downstream of the dam at Greenwood St. Total suspended solids appear to be decreasing. Surprisingly, dissolved oxygen concentrations have been decreasing. July E. coli concentrations have a strong upward trend, which is a cause for concern.

Trends of Seasonal Averages Using Seasonal Mann-Kendall Analysis				
Red Lake River In Thief River Falls S002-076, S002-324, S006-225	Total Suspended Solids	Dissolved Oxygen	Total Phosphorus	E. coli
Years	1994-2014	1992-2014	1992-2014	2005-2014
Annual (All Months)	X	X	X	X
Summer (May - Sept.)	X	X	X	↑
April	X	X	X	X
May	↓	↓	X	X
June	X	X	↑	X
July	↓	↓	X	↑+
August	X	X	X	X
September	X	X	↓	X
October	↓+	↓+	X	X
X = No Trend				
↑+ = Strong Upward Trend (Getting Significantly Worse)				
↑ = Upward Trend (Getting Worse)				
↓+ = Strong Downward Trend (Getting Significantly Worse)				
↓ = Downward Trend (Improvement)				
↓+ = Strong Downward Trend (Getting Significantly Better)				

- Task 12 – Reports
  - RLWD staff worked on a list of restoration and protection strategies for the Red Lake River Watershed Restoration and Protection Strategy report. Separate lists of strategies are being compiled for each HUC10 subwatershed and for practices that should be applied watershed-wide. Strategies have been listed for each significant parameter (total suspended solids, E. coli, aquatic biology, and dissolved oxygen) within each subwatershed. Current conditions of each parameter are listed. Interim and long-term goals are listed for each strategy. Entities with primary responsibility for accomplishing the goals are identified.

Initially, the strategies were listed in an outline format to facilitate easy editing and commenting. They will be listed in tables in the final draft of the WRAPS report. A draft list of restoration and protection strategies was distributed to members of the Red Lake River WRAPS Core Team for review, comments, and additions.

- RLWD staff reviewed a draft version of the MPCA's Red Lake River Watershed Monitoring and Assessment Report. Comments were submitted to MPCA staff.
- Some comments were received from BWSR and DNR staff on the draft Restoration and Protection Strategies section of the Red Lake River Watershed Restoration and Protection Strategy document.

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

Emmons & Olivier Resources (EOR) made progress on the civic engagement, TMDL writing, and WRAPS writing objectives of the project.

RLWD staff provided information to EOR staff about impoundments in the Grand Marais Creek watershed.

### **Other Notes**

- The 2015 Red Lake Watershed District Annual Report was completed and can be found at the following link:  
<http://www.redlakewatershed.org/Annual%20Reports/2015%20Annual%20Report.pdf>
- Marisa Newton was interviewed and hired as the 2016 RLWD Summer Water Quality Assistant.
- The Minnesota Department of Natural Resources released sturgeon at Sportsman's Park in Red Lake Falls (confluence of the Clearwater and Red Lake Rivers).
- An optical dissolved oxygen meter was purchased so that the Pine Lake Association could monitor winter dissolved oxygen levels within Pine Lake.
- Riverwatch schools were active in collecting monitoring data in May. RLWD staff assisted some of the schools with their monitoring efforts.
- Water quality related notes from the May 12, 2016 meeting of the RLWD Board of Managers:
  - Staff has reviewed and made corrections to a portion of the 1W1P Draft Plan Review. There has been some feedback from the LGU partnerships as well as BWSR. A timeline should be available in the near future as to when the draft version is available to be viewed by the Board, prior to going out for public comment.
- Water quality related notes from the May 26, 2016 meeting of the RLWD Board of Managers:
  - Staff member Ashley Hitt reported on the Red Lake River Corridor Enhancement Project meeting that she attended, along with Managers Page and Tiedemann. Hitt stated that this project was originally started in 2002, but due to lack of funding, at the time, the project did not proceed. A five-mile boundary on both sides of the river is considered in the corridor master plan. Funding grant application needs to be submitted by the end of June.

- Staff member Ashley Hitt and Manager Page discussed the Paddle Event hosted by the Wilderness Inquiry and International Water Institute open to the public on June 8-10<sup>th</sup>. Manager Page stated that he felt it would be good public relations for the District to contribute towards the cost of a light meal for those in attendance. Motion by Tiedemann, seconded by Coe, to contribute up to \$500 towards the Paddle event to be held June 8-10, 2016. Hitt and Page indicated that the District is welcome to set up a display of District activities/projects during the event.
- Staff member Nick Olson presented five options to repair 475 feet of eroded levee at the City of Erskine Memorial Park Levee Erosion Project. District staff will provide the information to the East Polk SWCD for submittal of a grant application. Manager Sorenson will provide the information to the City of Erskine
- Staff member Loren Sanderson stated that due to the recent rain events, the District is releasing water from both the north and south pools of the Moose River Impoundment, RLWD Project No. 13. Sanderson also indicated that Thief Lake is slightly above summer levels, so they are releasing as well.
- RLWD staff and partners are awaiting revisions to the draft version of the 1W1P review. LGU staff hope to have a draft timeline available to the Policy Committee and respective Boards prior to public comment and hearing.
- The Upper/Lower Red Lake watershed was also formally assessed by the MPCA in 2016.

#### **May 2016 Meetings and Events**

- **May 5, 2016** – Civic engagement conference call for the Red Lake River and Clearwater River WRAPS projects.
- **May 25, 2016** – Red Lake River Corridor Joint Powers Board
  - Paddling events - The International Water Institute will be organizing Wilderness Inquiry events on June 8-10, 2016.
  - Master plan discussion
- **May 26, 2015** – Clearwater River watershed stressor identification meeting with MPCA and DNR staff via Lync.

#### **Quotes of the Month:**

“Challenges are what make life interesting; overcoming them is what makes it meaningful.”

- Joshua J. Marine

Red Lake Watershed District Monthly Water Quality Reports are available online at:

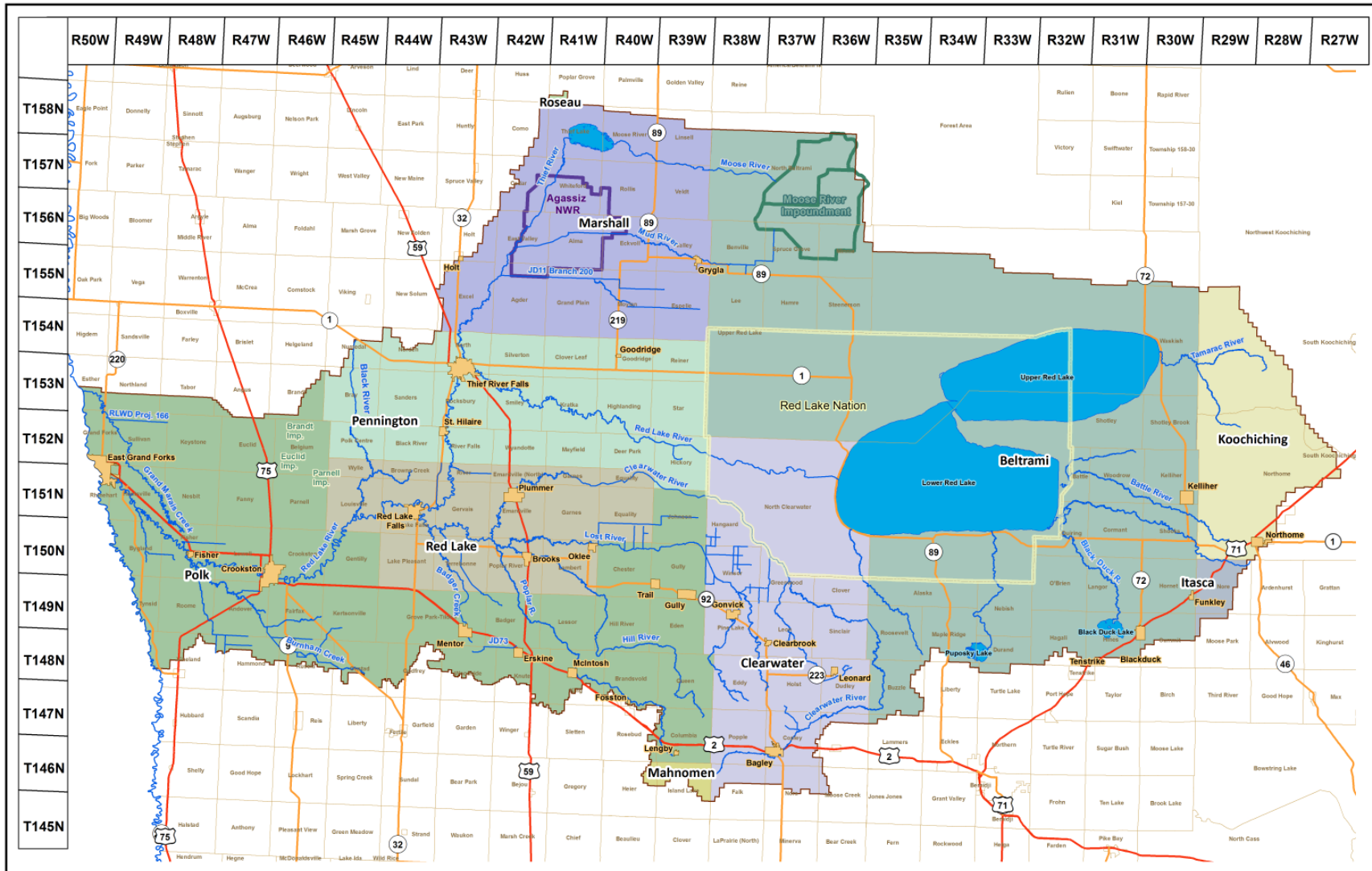
<http://www.redlakewatershed.org/monthwq.html>.

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

Learn more about your watershed at <http://www.rlwdwatersheds.org/>.

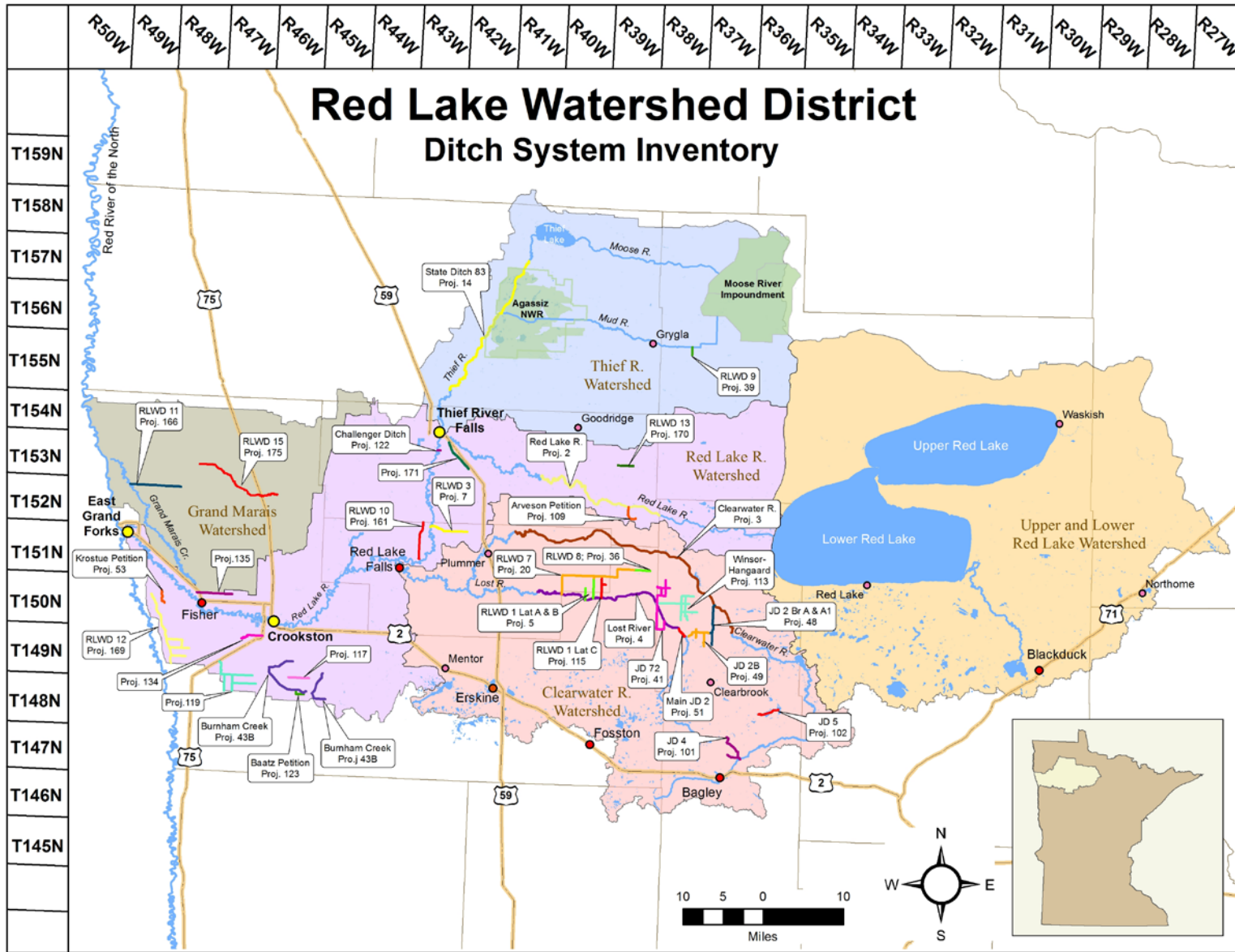
# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

May 2016



# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

May 2016



# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

May 2016

