

# RED LAKE WATERSHED DISTRICT

January 25, 2018

Agenda

9:00 a.m.

9:00 a.m.	Call to Order	Action
	Review and approve agenda	Action
	Requests to appear	Information
	January 11, 2018 Minutes	Action
	Financial Report dated January 24, 2018	Action
	General Fund Budget	Information
	Certificate of Deposit	Info./Action
	Conflict of Interest Policy Review	Info./Action
	Black River Impoundment, RLWD Project No. 176	Information
9:30 a.m.	Rob Sip, RRWMB	Information
	Four-Legged Lake, RLWD Project No. 102A	Information
	Judicial Ditch 5, RLWD Project No. 102 Landowner Petition to Clearwater County	Information
	Kiosk Panels	Info./Action
	Roseau County Buffer Strip Ordinance	Information
	Red Lake County Buffer Strip Ordinance	Information
	RLWD Advisory Committee	Info./Action
	2018 MAWD Legislative Breakfast	Information
	Administrators Update	Information
	Legal Counsel Update	Information
	Managers' updates	Information
	Adjourn	Action

## UPCOMING MEETINGS

February 8, 2018	RLWD Board Meeting, 9:00 am.
February 15, 2018	Drainage and Waters Conference, St. Cloud
February 20, 2018	RRWMB Meeting, 9:30 a.m.
February 22, 2018	RLWD Board Meeting, 9:00 a.m.

RED LAKE WATERSHED DISTRICT  
Board of Manager's Minutes  
January 11, 2018

**DRAFT**

President, Dale M. Nelson, called the meeting to order at 9:00 a.m. at the Red Lake Watershed District Office, Thief River Falls, MN.

Present were: Managers Dale M. Nelson, Terry Sorenson, Allan Page, LeRoy Ose, and Brian Dwight. Absent: Les Torgerson and Gene Tiedemann. Staff Present: Myron Jesme and Tammy Audette and Legal Counsel Sparby.

The Board reviewed the agenda. Administrator Jesme requested the addition of the Black River Impoundment, RLWD Project No. 176 to the agenda. A motion was made by Sorenson, seconded by Page, and passed by unanimous vote that the Board approve the agenda with the addition of the Black River Impoundment, RLWD Project No. 176. Motion carried.

The Board reviewed the December 28, 2017 minutes. Motion by Sorenson, seconded by Page, to approve the December 28, 2017 Board meeting minutes as presented. Motion carried.

The Board reviewed the Financial Report dated January 10, 2018. Motion by Page, seconded by Ose, to approve the Financial Report dated January 10, 2018 as presented. Motion carried.

Polk County and Clearwater County confirmed the reappointment of Manager Tiedemann and Manager Torgerson, respectively, for an additional 3-year term on the Board.

Election of officers was conducted with President Nelson turning the meeting over to Secretary LeRoy Ose.

Manager Ose called for nominations for president. Manager Sorenson, nominated Dale M. Nelson. Upon calling for further nominations three times, no further nominations were made. Motion by Sorenson, seconded by Page, for nominations to cease, and that the secretary cast a unanimous ballot for Dale M. Nelson for president of the Board. Motion carried.

Secretary Ose turned the meeting over to President Nelson to conduct elections for the remaining Board positions.

Nominations were opened for Vice-President. Manager Page nominated Gene Tiedemann. Upon calling for further nominations three times, no further nominations were made. Motion by Page, seconded by Sorenson, for nominations to cease, and that the secretary cast a unanimous ballot for Gene Tiedemann for vice-president of the Board. Motion carried.

Nominations were opened for Secretary. Manager Sorenson nominated LeRoy Ose. Upon calling for further nominations three times, no further nominations were made. Motion by Sorenson, seconded by Page, for nominations to cease, and that the secretary cast a unanimous ballot for LeRoy Ose for secretary of the Board. Motion carried.

Nominations were opened for Treasurer. Manager Ose nominated Terry Sorenson. Upon calling for further nominations three times, no further nominations were made. Motion by Ose, seconded by Page, for nominations to cease, and that the secretary cast a unanimous ballot for Terry Sorenson for treasurer of the Board. Motion carried.

President Nelson reviewed the Advisory Board members. Motion by Ose, seconded by Page, to approve the Advisory Committee members as presented. Motion carried.

The position of Delegate and Alternate to the Red River Watershed Management Board (RRWMB) was discussed. The position of Delegate would begin the first year of a 3-year term. Motion by Sorenson, seconded by Page, to appoint Manager Ose as Delegate, and Manager Torgerson as Alternate to the RRWMB. Motion carried.

Delegates and Alternate to the Minnesota Association of Watershed Districts were discussed. Motion by Page, seconded by Sorenson, to appoint Manager Ose and Tiedemann as Delegates and Manager Page as an alternate. Motion carried.

The Budget/Salary Committee was discussed by the Board. A motion was made by Ose, seconded by Page, to appoint Managers Nelson, Sorenson and Tiedemann to serve on the Budget/Salary Committee. Motion carried.

The Board discussed representatives on the Grand Marais Creek Joint Powers Board. A motion was made by Page, seconded by Sorenson, to appoint Managers Nelson, Tiedemann and Page to the Grand Marais Creek Joint Powers Board, with Manager Sorenson as an alternate. Motion carried. Administrator Jesme stated that the By-Laws of the Grand Marais Creek Joint Powers Board stated that a yearly meeting shall be called of the Joint Powers Board members. It was the consensus of the Board, to schedule a Joint Powers Board meeting for February, in conjunction with a District Board meeting.

The committees for the JD 2 and JD 72 Joint Ditch Boards were reviewed. Motion by Page, seconded by Ose, to appoint Managers Sorenson and Torgerson to the JD 2 and JD 72 Joint Ditch Boards. Motion carried.

Discussion was held on the appointment of representatives to the Pine Lake Area Project Work Team. Motion by Page, seconded by Ose, to appoint Managers Sorenson and Torgerson as Delegates and Manager Dwight as Alternate to the Pine Lake Area Project Work Team. Motion carried.

Discussion was held on the appointment of representatives to the Four Legged Lake Project Work Team. Motion by Ose, seconded by Page, to appoint Managers Sorenson and Torgerson as Delegates and Manager Dwight as Alternate to the Four Legged Lake Project Work Team. Motion carried.

Discussion was held on the appointment of representatives to the Black River Impoundment Project Work Team. Motion by Ose, seconded by Sorenson, to appoint Managers Nelson and

Page as Delegates and Manager Tiedemann as Alternate to the Black River Impoundment Project Work Team. Motion carried.

Discussion was held on the appointment of representatives to the 20% Flood Reduction Committee. Motion by Page, seconded by Sorenson, to appoint Managers Nelson, Ose and Torgerson to the 20% Flood Reduction Committee. Motion carried.

Discussion was held on the appointment to the Policy Committee and Advisory Committee for the Red Lake River One Watershed One Plan (1W1P). Motion by Ose, seconded by Page, to appoint Manager Tiedemann as Delegate and Manager Nelson as Alternate to the Policy Committee and Managers Nelson and Page to the Advisory Committee for the Red Lake River 1W1P. Motion carried.

Discussion was held on the appointment to the Policy Committee and Advisory Committee for the Thief River One Watershed One Plan (1W1P). Motion by Page, seconded by Sorenson, to appoint Manager Ose as Delegate and Manager Nelson as Alternate to the Policy Committee and Managers Nelson and Dwight to the Advisory Committee for the Thief River 1W1P. Motion carried.

Discussion was held on the appointment of representatives to the Blackduck Lake Structure Joint Powers Board. Motion by Ose, seconded by Page, to appoint Managers Dwight and Torgerson to the Blackduck Lake Structure Joint Powers Board. Motion carried.

A motion was made by Ose, seconded by Page, and passed by unanimous vote that the regularly scheduled Board meetings be held at 9:00 A.M. at the Red Lake Watershed District Office on the second and fourth Thursdays of each month for 2018.

A motion was made by Page, seconded by Ose, that the following institutions be designated as depositories for the RLWD: Northern State Bank, Border State Bank, Unity Bank North, Certificate of Deposit Account Registry Service (CDARS) through Promontory Interfinancial Network, LLC, Citizens State Bank, American State Bank, First National Bank of Bemidji, Ultima Bank, Edward Jones, with the following signatures on the signature cards at the financial institutions: Dale M. Nelson, Gene Tiedemann, LeRoy Ose, Terry Sorenson, Myron Jesme and Arlene Novak. Motion carried.

Administrator Jesme stated that the Red Lake River 1W1P, RLWD Project No. 149 was allocated \$677,551 from the BWSR Clean Water funding for a two-year funding cycle. The Planning Committee is currently working on the Work Plan and Budget to be approved by the Policy Committee and submitted to BWSR.

The Board reviewed a MnDNR Dam Inspection Report for the Euclid East Project, RLWD Project No. 60C. District staff will inspect the structure in the Spring, and report back to the Board.

The Board reviewed correspondence from BWSR regarding Determination of Adequacy for the Clearwater County Buffer Ordinance.

The Board reviewed a proposed Minnesota Association of Watershed District's resolution regarding Electronic Meeting Attendance.

#### Administrator's Update:

- Jesme will attend the January 26, 2018 RRWMB monthly meeting which will be held at the District office.
- Various staff members attended the Thief River 1W1P Public Open House held in Thief River Falls and Grygla.
- A Red Lake River 1W1P Planning Committee meeting was held January 4, 2018 at the Pennington SWCD. The meeting was held to address the approved Clean Water funding which was approved by BWSR at their December 20, 2017 meeting.
- A Judicial Ditch 72 Joint Board meeting was held January 2, 2018 to discuss the possible consolidation of various ditches that have overlapping drainage areas with that of JD 72. The Joint Board made recommendation to the Polk County Ditch Authority to move forward with landowner meetings of the respective legal drainage systems to explain why the consolidation of these systems makes sense. The Polk County Board approved moving forward with a landowner meeting to be held late February.
- A Pine Lake Environmental Assessment review committee meeting will be held on January 19, 2018 at 9:30 a.m. at the District office.
- A Four Legged Lake Project Work team meeting will be held January 19, 2018 at 11:00 a.m. at the District office. The agenda for the meeting is to try and come to a consensus on water elevations.
- A Thief River Westside Flood Damage Reduction Project meeting will be held on January 11, 2018 at 1:00 p.m. at the District office. Staff from Pennington County, MnDOT, and HDR Engineering will be in attendance.

Discussion was held on the lowering of the outlet culvert on Judicial Ditch 5, RLWD Project No. 102. It was the consensus of the Board to have Administrator Jesme and Legal Counsel Sparby draft a letter to be submitted to the Dudley Township Board in regard to lowering the culvert when conditions allow.

Rod Otterness and Wayne Johnson with the City of Thief River Falls appeared before the Board to thank the District for leadership on the Thief River Westside Flood Damage Reduction Project. Mr. Otterness stated that the City of Thief River Falls is committed to working with state legislators to lobby for potential funding.

The Board discussed the potential location of the RRWMB office. Administrator Jesme referenced a letter that the Board submitted to the RRWMB offering their assistance in locating or providing office space in Thief River Falls. Manager Dwight stated that he thought it would be beneficial to the District to have the RRWMB office located within the District office.

Legal Counsel Sparby stated that he and Administrator Jesme presented a brief history of the Four Legged Lake Project, RLWD Project No. 102A to Allan Rogalla, who was recently appointed as the new county attorney for Clearwater County.

Engineer Tony Nordby, Houston Engineering, Inc. discussed the potential of completing a Phase 1 Archaeological review on the proposed Black River Impoundment, RLWD Project No. 176. Nordby stated that he received a quote from McFarlene Consulting, LLC to complete Stage 1 of Phase 1 review in the amount of \$6,542. If additional shovel testing is required (Stage 2), the daily survey rate would be \$1,274. Nordby stated that the U.S. Army Corps of Engineers may require an archaeological review. Motion by Ose, seconded by Dwight, to authorize the completion of a Phase 1 Archaeological review not to exceed \$10,000 for the proposed Black River Impoundment, RLWD Project No. 176. Motion carried. Nordby stated that he participated in a conference call with staff from the U.S. Army Corps of Engineers and Pennington SWCD regarding wetland impacts. Staff from Houston Engineering are working on spoil design, which will decide right-of-way limits and EQIP, with approximately 34 EQIP sites determined. Nordby will present a project timeline and costs for construction for the Board's consideration at the January 25, 2018 Board meeting.

Manager Dwight encouraged the Board to support the establishment of Water Management Districts in the planning stages for the Thief River 1W1P, RLWD Project No. 149A.

Motion by Ose, seconded by Sorenson, to adjourn the meeting. Motion carried.

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LeRoy Ose, Secretary

**RED LAKE WATERSHED DISTRICT**  
**Financial Report for January 24, 2018**

<b>Ck#</b>	<b>Check Issued to:</b>	<b>Description</b>	<b>Amount</b>
online	EFTPS	Withholding for FICA, Medicare, and Federal taxes	\$ 3,889.65
online	MN Department of Revenue	Withholding taxes	727.56
online	Public Employees Retirement Assn.	PERA	2,621.58
online	EFTPS	Withholding for FICA, Medicare, and Federal taxes	195.36
online	MN Department of Revenue	Withholding taxes	50.00
36577	Putzy's Catering	TR1W1P Open house expense	400.00
36578	Jason Bruggeman	Detail 5 vehicles	500.00
36579	Craig and Lisa Swanson	Second half of land payment less closing costs	323,876.91
36580	Ihle Sparby & Haase Trust Acct.	Fees for closing of Swanson land	2,896.09
36581	Ameripride Services Inc.	Office rugs rental	30.20
36582	Blue Cross Blue Shield	Staff health insurance	6,516.00
36583	Elroy Aune	Mileage for TR1W1P	28.34
36584	Beltrami SWCD	Reimburse for TR 1W1P expenses	79.20
36585	CHS Credit Card	Gas for vehicles	59.35
36586	City of Grygla	Rental of Community Center for TR 1W1P Open House	150.00
36587	James Counter	Mileage for TR1W1P	44.14
36588	David A. Dalager	Pine Lake PWT mileage	56.68
36589	Delta Dental of MN	Dental insurance premium	437.45
36590	Mike Drangstveit	Mileage for TR1W1P	21.80
36591	Fastenal Company	Booster Cables	21.92
36592	Forum Communications Company	Final Pymt. hearing ad for Gerit Hanson Const. & TR1W1P Open house	117.05
36593	Jeffrey Franson	Mileage for TR1W1P	52.32
36594	Garden Valley Telephone Company	Monthly telephone maintenance expense	112.75
36595	Karen Gebhardt	Four Legged Lake PWT mileage	78.48
36596	HDR	* Engineering fees	69,425.02
36597	Steven Holte	Mileage for TR1W1P	8.18
36598	Houston Engineering Inc.	Black River Impoundment engineering fees	35,552.00
36599	Marshall County Environmental Service	Reimburse for TR 1W1P expenses	237.87
36600	MCI	Long distance telephone expense	54.38
36601	Northwest Beverage	H2O for office	22.50
36602	Northwest Service Cooperative	2018 dues	96.00
36603	Patricia Jo Olson	Four Legged Lake PWT mileage	75.21
36604	Pennington Fast Lube	Battery for Suburban	130.49
36605	Pennington SWCD	Reimburse for TR 1W1P expenses	522.53
36606	Larry Peterson	Pine Lake PWT mileage	62.13
36607	Kevin Sanders	Mileage for TR1W1P	40.87
online	SelectAccount	Health FSA	100.00
online	Cardmember Services	**See below for explanation	3,738.90
direct	Allan Page	Mileage	55.64
	<b>Payroll</b>		
	Check #11318 -11326		<u>12,471.53</u>
	<b>Total Checks</b>		<b>\$ 465,556.08</b>

**\*HDR**

Proj. 26 Site F Pine Lake	455.25
Proj. 121 Louisville Parnell	613.67
Proj. 171A TRF WMD	175.00
Proj. 26 Pine Lake	56,404.90
Pro. 102A Four Legged Lake	1,705.45
Proj. 178 TRF Westside FDR	<u>10,070.75</u>
<b>TOTAL</b>	<b>69,425.02</b>

**\*\*Cardmember Services**

AT&T-Cellular phone expense	264.79
ESRI-ARCGIS Desktop and Spacial	3,264.00
Amazon-Cases for Surface Pros	<u>210.11</u>
<b>TOTAL</b>	<b>3,738.90</b>

**Northern State Bank**

Balance as of January 5, 2018	1,617,609.98
Total Checks Written	\$ (465,556.08)
Receipt #016490 CDARS (Unity Bank)-Additional days interest on matured CD	15.62
Receipt #016491 Dale S. & Peggy Thompson-Deferred Management fee for Proj. 171A	967.78
Receipt #016492 Tim & Jewel Fultz-Deferred Management fee for Proj. 171A	2,346.00
Receipt #016493 RRWMB-Cost share of website maintenance for 2017 and part of 2016	1,437.27
Receipt #016494 Polk County-Second half of riparian aid funds	5,334.00
Receipt #016495 CDARS (Unity Bank) Additional days of interest on matured CD	<u>88.51</u>
Balance as of January 24, 2018	<u><u>\$ 1,162,243.08</u></u>

**Border State Bank**

Balance as of November 30, 2017	\$ 10,592.44
Receipt #016484 Monthly interest	<u>2.25</u>
Balance as of December 31, 2017	<u><u>\$ 10,594.69</u></u>



2017 GENERAL FUND BUDGET

as of December 31, 2017

(unaudited)

	2017 BUDGET	2017 Exp.	(over) under
		<b>TO 12-27-17</b>	
Manager's fees, salaries	20,000.00	16,367.40	3,632.60
Board of Manager's expense	20,000.00	17,857.39	2,142.61
Staff salaries	420,000.00	424,655.96	(4,655.96)
Payroll taxes	29,400.00	30,830.96	(1,430.96)
Employee benefits	98,700.00	84,022.90	14,677.10
Travel and meetings(inc. mileage & exp.	5,000.00	2,984.00	2,016.00
Audit	9,000.00	9,000.00	0.00
Legal	15,000.00	10,618.00	4,382.00
Office supplies	15,000.00	11,923.95	3,076.05
Office equipment	18,000.00	25,973.58	(7,973.58)
Appraiser/Viewer Expense	2,000.00	650.19	1,349.81
Professional services (inc. Eng. Fees)	20,000.00	30,746.21	(10,746.21)
Dues and subscriptions	10,000.00	8,408.00	1,592.00
Insurance and bonds	25,000.00	17,519.00	7,481.00
Repairs and maintenance-Building	15,000.00	10,699.01	4,300.99
Utilities	9,000.00	8,956.31	43.69
Advertising and publications	3,500.00	5,525.06	(2,025.06)
Telephone	10,000.00	8,989.33	1,010.67
Vehicle expense and maintenance	14,000.00	12,635.34	1,364.66
Engineering supplies	3,000.00	761.77	2,238.23
Engineering equipment	40,000.00	30,437.27	9,562.73
Interest	0.00	3,336.61	(3,336.61)
<b>TOTAL</b>	<b>801,600.00</b>	<b>772,898.24</b>	<b>28,701.76</b>
Less: Overhead	630,000.00	625,390.68	(4,609.32)
Less: Miscellaneous revenue	7,000.00	1,431.68	(5,568.32)
<b>General Fund Budget</b>	<b>164,600.00</b>	<b>146,075.88</b>	<b>18,524.12</b>

	41,640.00	TO 12-31-17
January 1, 2017 Beg. Balance	464,709.18	464,709.18
County levies revenue	0.00	0.00
Misc. revenue (not reflected in above line item)		1,805.00
Gross balance with revenue		466,514.18
Less net expenses		(146,075.88)
Subtotal- General Fund		<b>320,438.30</b>
Plus total interest earned		7,359.06
<b>General Fund Balance 12-31-17</b>		<b>327,797.36</b>

Red Lake Watershed District  
as of January 24, 2018

<u>Name of Institution</u>	<u>Purchase</u>	<u>Int. Rate</u>	<u>Mat. Date</u>	<u>*Maturity Amount</u>
10010 Northern State Bank (checking)	\$ 1,162,243.08	0.40%		\$ 1,162,243.08
10200 Border State Bank (Investor savings) Thief River Falls	\$ 10,594.69	0.25%		\$ 10,594.69
10240 CDARS-TriState Capital Bank-Pittsburgh 12 mos. CD, int. paid monthly	\$ 200,000.00	0.94553%	2/8/2018	\$ 200,000.00
10580 American State Bank, Grygla (1058) #15486 12 month CD(int. pd quarterly)	\$ 200,000.00	0.75%	3/4/2018	\$ 200,375.00
10850 CDARS-Amarillo National Bank-TX Interest direct deposited monthly	\$ 97,000.00	1.15%	3/15/2018	\$ 97,000.00
10850 CDARS-Bank Hapoalim B.M.-NY Interest direct deposited monthly	\$ 143,000.00	1.15%	3/15/2018	\$ 143,000.00
10840 Edward Jones (Ally Bank) 30 mos. CD	\$ 200,000.00	1.45%	3/30/2018	\$ 207,250.00
CDARS-Bank of America, Charlotte, NC monthly interest payment via ACH	\$ 200,000.00	1.25%	7/5/2018	\$ 200,000.00
10550 Citizens State Bank, Roseau #59137 18 mos.(int.pd semi-annually)	\$ 200,000.00	1.05%	9/3/2018	\$ 201,090.96
10760 Ultima Bank Minnesota-Fosston (1076) #16623 12 month CD	\$ 200,000.00	1.00%	10/2/2018	\$ 202,000.00
10770 CDARS-Bank of China, NY Interest direct deposited monthly	\$ 243,500.00	1.50%	10/18/2018	\$ 243,500.00
10770 CDARS-Great Plains National Bank Interest direct deposited monthly	\$ 113,000.00	1.50%	10/18/2018	\$ 113,000.00
10770 CDARS-MainStreet Bank Interest direct deposited monthly	\$ 243,500.00	1.50%	10/18/2018	\$ 243,500.00
10830 Edward Jones-Morgan Stanley Interest paid at maturity	\$ 200,000.00	1.50%	10/30/2018	\$ 203,000.00
10650 First National Bank-Bemidji-12 mos. CD #94230 Qtrly interest-direct deposit(1065)	\$ 200,000.00	1.05%	12/12/2018	\$ 202,100.00
10660 CDARS-Amarillo National Bank, TX 12 mos. CD, int. paid monthly	\$ 146,500.00	1.50%	1/17/2019	\$ 146,500.00
10660 CDARS-Conway, AR 12 mos. CD, int. paid monthly	<u>\$ 53,500.00</u>	1.50%	1/17/2019	<u>\$ 53,500.00</u>
	<u>\$ 3,812,837.77</u>			<u>\$ 3,828,653.73</u>

## **Conflict of Interest Policy**

The Board of Managers hereby adopts for themselves and successor Managers the following guidelines in an effort to avoid real and perceived conflicts of interest and to enhance the credibility of the District's actions:

1. All Managers shall comply with MSA Sec. 471.87. No Manager shall have a personal financial interest in any sale, lease, or contract entered into by the Board as it applies to MSA Sec. 471.87.
2. Disclosure. At the beginning of the discussion on any subject, all Managers shall disclose any potential conflict of interest and/or direct pecuniary interest they may have. Examples of matters which should be disclosed by the Managers include:
  - a. They own land which may be assessed.
  - b. They own land which may benefit or be damaged other than by a direct tax.
  - c. They have close relatives who have lands as described in (a) and (b) above, and that said relationship is such that it may affect their judgment.
  - d. They have close friends or business associates who have lands as described in (a) and (b) above, and that said relationship is such that it may affect their judgment.
  - e. They are a public officer, such as a township officer, which has potential interest or that may be affected by said project.
3. All Managers shall abstain from Board discussion and voting on any resolution that involves a direct pecuniary interest.
4. Each Manager shall use his own judgment in other situations and when in doubt should probably abstain from discussion and voting.
5. To avoid the appearance of wrongdoing, it is suggested that a Manager should remove himself from the Manager's chair and sit in the audience when he wishes to participate in a public discussion, particularly a public meeting on subjects where he may have a direct conflict of interest.
6. To the extent applicable, the Watershed staff is instructed to follow the above guidelines.

Adopted March 11, 1992

Amended April 8, 2010

I have reviewed this policy and agree to abide by these rules.

Signed \_\_\_\_\_

Dated \_\_\_\_\_

**Black River Impoundment Project - RLWD Project #176 Budget Update**

		Original Proposed Budget	Adjusted Proposed Budget - Current	Fees/Expenses through 1-12-18	Adjusted Proposed Budget Remaining as of 1-17-18		
1	Environmental & Permitting	\$67,125.00	\$91,177.00	\$64,397.31	\$26,779.69		
2	Project Work Team	\$57,806.00	\$53,156.00	\$46,985.52	\$6,170.48		
3	Survey	\$37,956.00	\$45,001.00	\$35,152.04	\$9,848.96		
4	Preliminary Engineering/Design	\$148,122.00	\$200,605.00	\$175,935.35	\$24,669.65		
5	Final Design/Plans/Specs	\$44,844.00	\$121,134.00	\$35,021.00	\$86,113.00		
6	Construction Engineering	\$204,032.00	\$188,230.00	\$0.00	\$188,230.00		
7	Administration	\$34,206.00	\$27,464.00	\$21,011.50	\$6,452.50		
8	EQIP Engineering (Not Part of Original Proposed Budget)	-	\$13,490.00	\$14,451.48	-\$961.48	Current Opinion of Probable Construction Cost	Project Engineering % of Construction
9	Wetland Banking (Not Part of Original Proposed Budget)	-	\$39,357.10	\$8,874.75	\$30,482.35		
	<b>Engineering Through Final Design &amp; Permitting</b>	<b>\$390,059.00</b>	<b>\$552,027.00</b>	<b>\$392,954.20</b>	<b>\$159,072.80</b>		
	<b>Engineering Through Construction</b>	<b>\$594,091.00</b>	<b>\$740,257.00</b>	<b>\$392,954.20</b>	<b>\$347,302.80</b>	<b>\$3,712,580.00</b>	<b>19.9%</b>
	<b>Engineering Through Construction W/Banking</b>		<b>\$779,614.10</b>	<b>\$401,828.95</b>	<b>\$377,785.15</b>	<b>\$3,770,000.00</b>	<b>20.7%</b>

Note: Subconsultants Work to Complete From Remaining Budget

Archeological Enviro/Permitting	\$10,000.00
Geotech Prelim Engineering	\$20,032.50
Geotech Construction Testing	\$30,000.00

**Primary Reasons for Adjusted Budget**

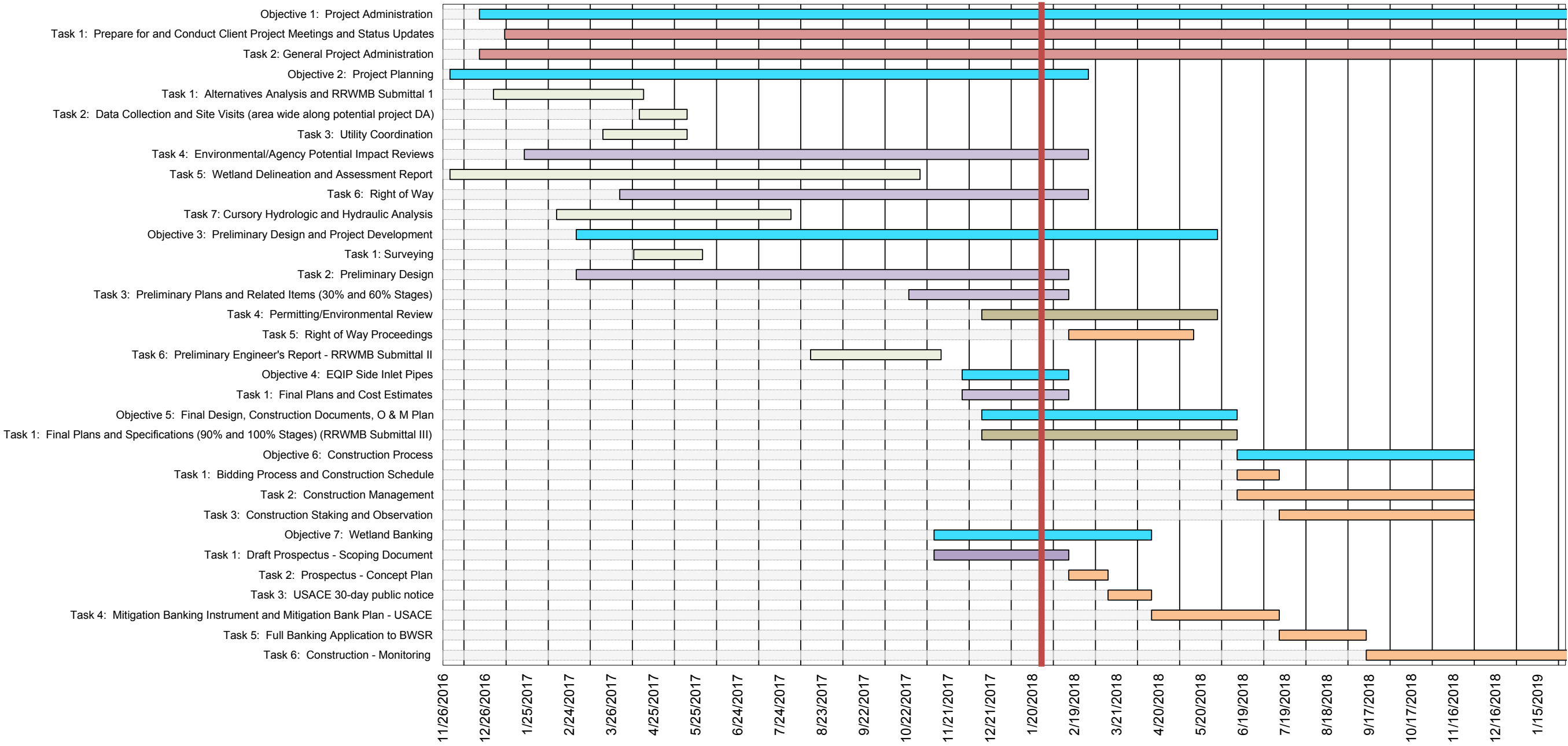
**Preliminary/Final Design**

- 1 Original Proposed Budget Scope Light on Final Design
- 2 Additional 5 Miles of Ditch Design Added Since Creation of Original Proposed Budget
- 3 Brief Analysis of 5-yr Ditch Design Compared to 10-yr

**Environmental & Permitting**

- 1 Original Impacts were Anticipated to be Minimal Based on Early Project Team Discussion
- 2 Adjusted Proposed Budget is Dependent Apon Acquisition of Permits Reflecting Current Preliminary Design

**Anticipated Project Schedule  
RLWD Black River Project  
1/19/2018**



PETITION TO THE CLEARWATER COUNTY BOARD OF COMMISSIONERS

We, the undersigned, petition the Clearwater County Board of Commissioners to rescind Clearwater County Resolution RLWD JD 5 Ditch Operation that was passed by the Board on June 20<sup>th</sup>, 2017 demanding that the lake basins be drained to a level of 1423.8' in elevation. We request that County Board pass a new resolution of support to maintain the existing elevations of the entire drainage ditch and culvert system that is Judicial Ditch 5 without any changes to the elevation of the outlet culvert. We are very concerned about the effect lowering the lake may have on current wildlife, on local water levels and on recreation. We enjoy the beauty of the lake in its current form. Four Legged Lake is important to the undersigned and we request that the Board assist the community in maintaining this valuable asset.

The undersigned land owners and community members respectively have made this request.

NAME

ADDRESS

	Radney Rhew	24001 2ND ST	Leonard - Minn
	Charlath Peterson	24002 2nd St.	Leonard MN
	Christine Johnson	24379 430th St	Leonard MN
	Annela Lindberg	23090 Sa Lin Road	Leonard, Minn.
	Melba Jones	53239 269th Ave	Leonard, MN
	Harold E	53239 269th Ave	Leonard MN
	Sheldon Mousa, trustee	mousa family trust	25072 450th St Leonard minn mousa family trust
P.P.	Ferry Mousa	fister	4430 Sherman Dr NE Bemidji MN
PP	Matt + Tanja Theisen + family	510 4 <sup>th</sup> Ave NE	Perham, Mn. 56573
	Roland Lundmark	landowner	44064 253 <sup>rd</sup> Ave Leonard, Mn. 56652
PP	Luke + Cara Fiskel	18846 185 <sup>th</sup> Ave	Park Rapids, Mn. 56470
	Brian Moen	45936 181 <sup>st</sup>	CLBK MN
	Ken & Pam Fairbairn	4355 CHERRY LN. NE.	BEMIDJI, MN. 56601
	Mary Beth Pond	17770 Aure Rd NW	Pinewood, MN 56476

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NAME

ADDRESS

Wayne A. Johnson	41450 Co. 2 Bagley
Dorothy Johnson	" " " "
Larry John	County 2 Bagley
Aaron Hinrichs	26549 410 <sup>th</sup> St Shevlin MN 56670
Wayne Hinrichs	26549 410 <sup>th</sup> St. Shevlin, MN 56676
Kelly Christensen	41071 Jackson Rd Bagley MN 56629
Wanna Sundmark	23030 Leonard Rd Elk MN 56639
Woody Sundmark	23300 Leonard Rd. Leonard Rd.
Julie Fredrickson	24106 1st Street Leonard MN 56652
Donna Coyle	23993 500 Line Rd Leonard MN 56652
Brian Johnson	Co. Rd 2 43176 Leonard, MN 56652
JAMES TOLHEISON	24379 430 <sup>th</sup> LEONARD, MN 56652
Lorraine Rhen	24001 2 <sup>nd</sup> St. Leonard, MN. 56652

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ADDRESS

Debbie MARTIN	42069 Co 23 LEONARD MN
Angette Gray	25850 Glacier Rd Leonard MN
Neil Anderson	" "
Larry Bush	25481 Glacier Rd Leonard MN
Marilyn Emery	24793 430 <sup>th</sup> St Leonard, MN
Sammy Christensen	41071 Jack Pine Rd. Bagley, MN.
John In	42576 Cty Rd 2 Leonard MN
P.P. Congdon	42576 Cty Rd 2 Leonard MN
Samuel Emery	42358 County 2 Leonard MN
Mike Emery	42358 Co 2 Leonard MN
John Hanson	42358 Co 2 Leonard MN
Stoney Verseth	41339 County 2 Bagley
JOEL VERSCHAY	41217 Co. 2 BAGLEY



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NAME

ADDRESS

Katie Verschay	41217 Co2 Bagley
COREY SYVERSON	42730 Co. Rd 2 Leonard MN
Valerie Syverson	42730 Co. Rd 2 Leonard MN
Hunter Syverson	"
Anthony J. Lundmark	25256 Redwood Rd. Leonard, MN
P.P. Christie Gordon	2608 15 <sup>th</sup> St St. Cloud, MN 56303
Beverly C. Lundmark	24240 Leonard Rd. Leonard, MN.
P.P. Ted Lundmark	24240 Leonard Rd. Leonard, MN.
P.P. Bruce Bjerke	Bjike Cir. 27403 Leonard, MN.
P.P. Deb Bjerke	Bjike Cir. 27403 Leonard, MN.
Dean Longest	44327 243 <sup>rd</sup> Ave Leonard MN
JAN GODIN	24432 LEONARD RD LEONARD MN
Michele Godin	24432 Leonard Rd Leonard MN

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NAME

ADDRESS

<i>Jim Cook</i>	<i>26937 Clearwater Lake Road, Leonard, MN. 56652</i>
<i>Rita Chesley</i>	<i>Clearbrook MN. 56634</i>
<i>Jewel Steiner</i>	<i>Clearbrook MN 56634</i>
<i>Margaret A. Stevens</i>	<i>Clearbrook MN. 56634</i>
<i>David E. Zingales</i>	<i>43082 201<sup>st</sup> C/16K MN 56634</i>
<i>Sandra M. Mark</i>	<i>" " " " "</i>
<i>David Rongstad</i>	<i>23929 400 LANE RD Leonard MN 56652</i>
<i>John Paulson</i>	<i>516 Main Ave Shenlin, MN 56674</i>
<i>P.P. Chase Ferguson</i>	<i>707 19<sup>th</sup> St. N.W. Bemidji, MN 56601</i>
<i>P.P. Olivia Paulson</i>	<i>707 19<sup>th</sup> St. N.W. Bemidji, MN 56601</i>
<i>P.P. Sandra Paulson</i>	<i>134 Brook Ave, N.E. Clearbrook, MN 56634</i>
<i>P.P. Corliss Gunning</i>	<i>810 1<sup>st</sup> St. E. Fosston, MN 56542</i>
<i>P.P. Dwight Gunning</i>	<i>810 1<sup>st</sup> St. E. Fosston, MN 56542</i>

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NAME

ADDRESS

PR. Richard. Djerino	41250 191 <sup>st</sup> Ave. Clearbrook, MN 56634
Larry Gerbracht	25347 Glacier Rd Leonard MN 56652
Carolyn Gerbracht	" "
Ryan Gerbracht	25607 Glacier Rd. Leonard Mn 56652
Lori Johnson	41709 237 <sup>th</sup> Ave Bagley Mn 56621
Miles Johnson	41709 237 <sup>th</sup> Ave Bagley Mn 56621
Norman Anderson	41811 237 <sup>th</sup> Ave Bagley
Sylvia Anderson	" " "
Marla Roberts	41958 233 <sup>rd</sup> Ave Bagley
Sheryl Severson	38849 141 <sup>st</sup> Ave "
Roby Severson	" " " "
Milo Durkin	42777 Co Rd 23 Leonard
Deanna Durkin	42777 Co Rd 23 Leonard

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<u>NAME</u>	<u>ADDRESS</u>
Randy Caskey	43055 201 <sup>ST</sup> . AVE. Clearbrook mn. 56634
P.P. Brenda Caskey	43055 201 <sup>ST</sup> . AVE. Clearbrook mn. 56634
P.P. Heidi Caskey	43055 201 <sup>ST</sup> . AVE. Clearbrook mn. 56634
P.P. Jared Caskey	43485 201 <sup>ST</sup> . AVE. Clearbrook mn. 56634
Steve Stai	40968 211 <sup>th</sup> Ave Bagley Mn 56621
Kevin Maddy	42590 191 <sup>ST</sup> Ave., Clearbrook 56634
Vic THOMPSON	47918 199 AVE CLBK 56634
Sandra Winge	23967 Bagley Lake Rd, Leonard, MN 56652
Michael Winge	23967 Bagley Lake Rd Leonard Mn 56632
Quane Winge	23967 Bagley Lake Rd, Leonard mn. 56652
Donnie Winge	23967 Bagley Lake Rd, Leonard, Mn 56652
Suey House	P.O. Box 234, CLEARBROOK, MN. 56634

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	<u>NAME</u>	<u>ADDRESS</u>
	Melanie Paulson	23619 Leonard Rd Leonard MN 56652
	Kelly Lundmark	25256 Railroad Rd, Leonard MN 56652
	Inari Solberg	44685 151 <sup>st</sup> Ave Clearbrook mn 56634
P.P.	Jeff Solberg	44685 151 <sup>st</sup> Ave Clearbrook mn 56634
P.P.	Nicholas Solberg	44685 151 <sup>st</sup> Ave Clearbrook mn 56634
	Marlene Gerbracht	25123 Glacier Rd Leonard MN 56652
P.P.	Doug Isackson	2821 Icerose Ln, Stillwater MN
P.P.	Jennifer Isackson	2821 Icerose Ln, Stillwater MN
P.P.	Roger Isackson	P.O. Bo 115, Pine wood, mn
P.P.	Ed Isackson	1445 Todd Hwy Hastings MN
P.P.	Joy Isackson	1445 Todd Hwy Hastings mn
P.P.	Adam Isackson	1445 Todd Hwy Hastings mn
P.P.	Mary Arellano	19608 Yancy St East Bethel mn 55011
P.P.	Jeff Arellano	19608 Yancy St E. Bethel mn 55011
P.P.	Pam Lien	46744 Co Hiway 52 Perham mn 56573

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NAME

ADDRESS

- P.P. Julia Lundmark Vannatta 3408 39<sup>th</sup> Ave S Mpls Mn 55406
- P.P. Debra Walsh 8458 Pleasant View Dr, Moundsview Mn 55112
- P.P. Gerald Westberg 2945 Ewing Ave N. Robbinsdale Mn 55422
- P.P. Megan Westberg 2945 Ewing Ave N. Robbinsdale Mn 55422
- P.P. Alyson O'Keeffe 172 Stevens St N., St Paul Mn 55107
- P.P. Ryan O'Keeffe 172 Stevens St N., St Paul Mn 55107
- P.P. Debra Tollefson Rantz 5428 Monte Plata Tde NE Bemidj Mn 56601
- P.P. Margaret Ende 11231 190<sup>th</sup> Ave NW Elk River Mn 55330
- P.P. Stacey Granberry 2630 196<sup>th</sup> Ave NE East Bethel Mn 55011
- P.P. Lauren Larson 4020 Arthur St NE Columbia Heights Mn 55421
- P.P. Doris Schulte 1700 125<sup>th</sup> Ln NW Coon Rapids Mn 55433
- P.P. Joe Abing 4919 Belgian Trail Inver Grove Heights Mn 55076
- P.P. Samuel Granberry 2630 196<sup>th</sup> Ave NE East Bethel Mn 55011

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<u>NAME</u>	<u>ADDRESS</u>
PP. Allison Godin	4256 Halibut Point Rd Sitka AK
Sharon Danker	44064 253rd Ave. Leonard, MN
Tyler Godin	1901 Willow Brook Ct SW Apt D Bemidji, MN
PP. Kari Godin	1901 Willow Brook Ct SW Apt D Bemidji, MN
Dan Godin Jr.	105 Spruce Ave SW Bagley MN 56621
PP. Diane Danker	26884 450 <sup>th</sup> St Leonard MN
Andrew Lundmark	44276 243rd Ave Leonard MN 56652
Heather Lundmark	" "
PP. Shannon George	11605 Fus 2 Bagley MN 56621
PP. Sara Swanson	" "
PP. Tyler George	" "
PP. Hayley George	" "
PP. Jerry L. Danker	201 West St. SW Clearbrook, MN.

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<u>NAME</u>	<u>ADDRESS</u>
p.p. Jon Jackson	Leonard, MN 56652
Sandra Sather	42994 County 23
Caroline Merseth	4800 Elliot Rd NE Bemidji
Mike J	4800 Elliot Rd NE Bemidji
Harry Björke	28793 Retreat Rd NW Pinewood
Ken Brein	25896 Clover Rd LEONARD
Loretta Björke	28793 Retreat Rd NW Pinewood
Lauri Brein	25896 Clover Rd, Leonard
Linda Sulbranson	1011 Amber Ct. NW Big Lake, MN
p.p. Janice Grauley	P.O. Box 48065 Coon Rapids MN 55448
p.p. Kae A. Grauley	P.O. Box 48065 Coon Rapids MN 55448
p.p. Emily Hinrichs	500 Line Rd., Leonard MN 56652



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ADDRESS

- PP. Orlyp Myra 222 N. Whitford St. Apt 511 Fergus Falls, MN 56537-2286
- PP. Sylvia Regard 16715 Hollow Ln. N.W. Shelton, MN 56676
- PP. Jonathan Rouland 198 Morgan Ln. Lino Lakes, MN 55014
- P.P. Eathan Rouland 198 Morgan Ln. Lino Lakes, MN 55014
- P.P. Eileen Thorsen 8650 Hazelwood Rd. Bemidji, MN 56601
- P.P. Steve Thorsen 42926 County 2 Leonard, MN 56652
- PP. Dawn Thorsen 42926 County 2 Leonard, MN 56652
- P.P. Diane Thorsen W. 253 So. 2229 Genevieve Rd. Waukesha, WI 53188
- PP. Barron Thorsen 43174 County 2 Leonard, MN 56652
- P.P. Todd Vahnoutka 360 S. Sutton Lk. Blvd. Jordan, MN 55352
- PP. Jacob Rouland 1079 95<sup>th</sup> Ave. N.E. Blaine, MN 55434
- P.P. Anne Rouland 1079 95<sup>th</sup> Ave. N.E. Blaine, MN 55434
- P.P. Brady Thorsen 8650 Hazelwood Rd. Bemidji, MN 56601

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NAME

ADDRESS

P.P. David Peterson 309 Foxwood Circle Denton, TX 76205

P.P. Rebecca Peterson 309 Foxwood Circle Denton, TX 76205

P.P. Mark Houtkooper 12433 Mattson Rd. Hibbing, MN 55746

P.P. Mike Dawes 1360 Powers St N. Big Lake, MN 55309

P.P. Gene Erickson 264 Ely St Fridley, MN 55432

P.P. Duane Heppner 30830 630<sup>th</sup> St Warroad, MN 56763

P.P. Minian Heppner 30830 630<sup>th</sup> St Warroad, MN 56763

P.P. Derek Houtkooper 201 Boundary St. Ely, MN 55731

P.P. Jessica Meyer 201 Boundary St Ely, MN 55731

P.P. Sarah Houtkooper 2820 5<sup>th</sup> Ave. E. Hibbing, MN 55776

P.P. Justin Lundmark 8736 75<sup>th</sup> St S. Cottage Grove, MN 55016

P.P. Bradley Lundmark 8736 75<sup>th</sup> St S. Cottage Grove, MN 55016

P.P. Rita Lundmark 8736 75<sup>th</sup> St S. Cottage Grove, MN 55016

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<u>NAME</u>	<u>ADDRESS</u>
P.P. Ryan Thorsen	4081 W. Tischer Rd. Duluth, MN 55803-2715
P.P. Aimee Thorsen	4081 W. Tischer Rd. Duluth, MN 55803-2715
P.P. Trent Thorsen	5659 Howard Gnesen Rd. Duluth, MN 55803-9269
P.P. Allison Thorsen	5659 Howard Gnesen Rd. Duluth, MN 55803-9269
P.P. Ross Thorsen	1609 11 <sup>th</sup> Ave. N.E. Grand Forks, N.D. 58201
P.P. Kristen Thorsen	1609 11 <sup>th</sup> Ave. N.E. Grand Forks, N.D. 58201
P.P. Mary Thorsen	298 Marsh Rd. Carson City, NV 89701
P.P. Scott Thorsen	298 Marsh Rd. Carson City, NV 89701
P.P. Cheryl Thorsen	2094 11 <sup>th</sup> Ave. S.E. #B Rochester, MN 55904-2941
P.P. Brandon Lundmark	5524 39 <sup>th</sup> Ave. S. Minneapolis, MN 55417
P.P. Kelly Sullivan	28252 Hwy. 65 Pengilly, MN 55775
P.P. Becky Lehmann	15556 Columbia Court Rosemount, MN 55068
P.P. David Lehmann	15556 Columbia Court Rosemount, MN 55068





# Reducing Floods Creating Habitat

## Holding Water Close to Where It Lands

Slowing the movement of water and holding it in impoundments is a key strategy used by Watershed Districts to protect farms and communities from food damage.



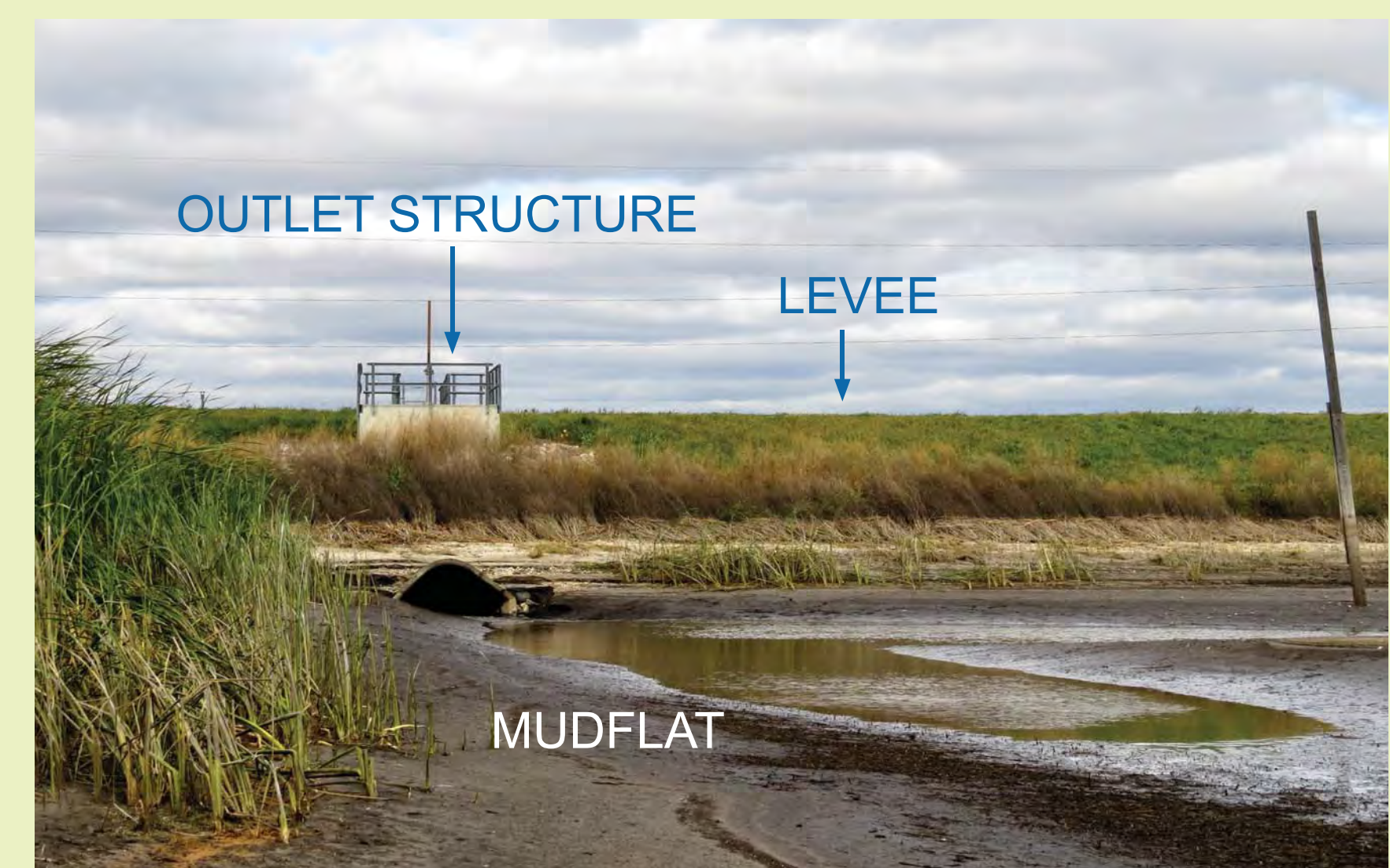
Brandt impoundment, Red Lake Watershed District

## How Impoundments Work

Spring snowmelt and stormwater runs off the land and flows through ditches into reservoirs known as impoundments.

Impoundments hold water in the spring to reduce flooding downstream and release water in the summer after the threat of flooding has passed.

Ponds, shallow and deep, are dug to create storage for water and the excavated soil is used to build the surrounding levees.



Agassiz Valley impoundment outlet, Photo: Heidi Hughes

## Attracting Birds and Wildlife



Shoreland  
Marbled Godwit  
Photo: Sandy Aubol



Open Water  
Greater White-fronted Geese  
and Tundra Swans  
Photo: Travis Bonovsky



Wetland  
Green Heron  
Photo: Sandy Aubol



Grassland  
Sandhill Crane  
Photo: Heidi Hughes



American White Pelicans loafing on a sandbar, Photo: Sandy Aubol

Norland impoundment, Background photo: Tracy Halstengard

In the spring and fall large numbers of migrating birds are attracted to the open water of impoundments and the variety of habitats there.

Depending on the water level, you may find open water, wetland with emergent vegetation, grassland, mudflats, and sandbars.

A drainage pipe with a gate to open or close is one method of controlling water movement out of an impoundment.



Norland impoundment "catwalk" over outlet structure, Photo: Tracy Halstengard

# Tallgrass Aspen Parkland

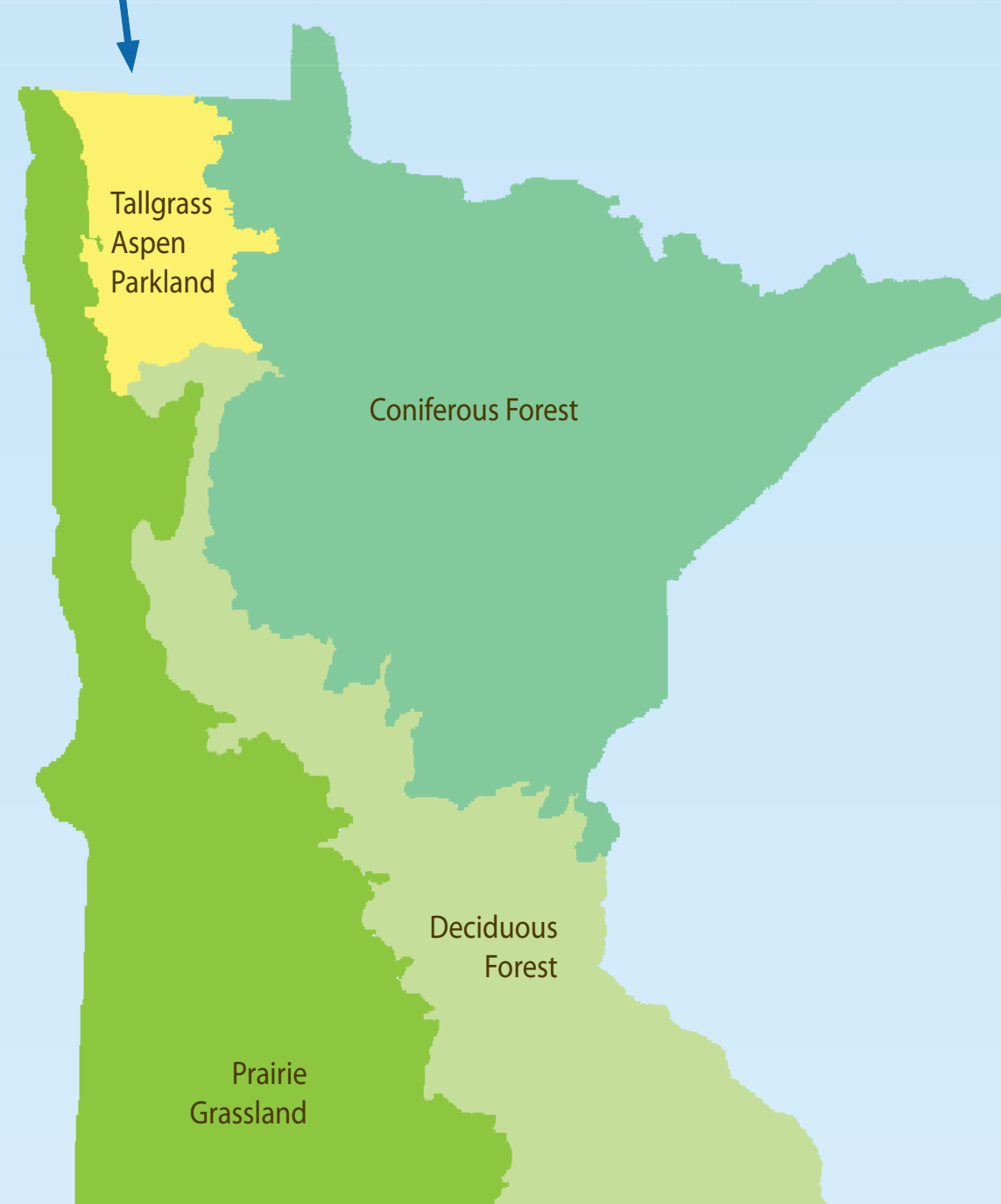
## Where The Prairie Meets The Forest

One of Minnesota's four ecological biomes, the Tallgrass Aspen Parkland is a transition zone between prairie and forest. It is a mosaic of sedge meadows and tallgrass prairies, wetlands and ancient sandy gravel beach ridges, aspen groves and shrub thickets. Once dependent on fire, today large areas of the parkland are managed by tree harvesting, brush shearing and controlled burns to maintain the prairie areas.

Minnesota is the only place in the U.S. where you can experience the Tallgrass Aspen Parkland. Though much of this region is in farmland, there are many preserves where birds and wildlife are abundant, including national wildlife refuges, state and county parks, and state wildlife management areas (WMA).



Located along the Mississippi Flyway, the watershed food management areas (blue dots on the map) offer important stopover sites for the millions of migrating birds flying overhead each year.

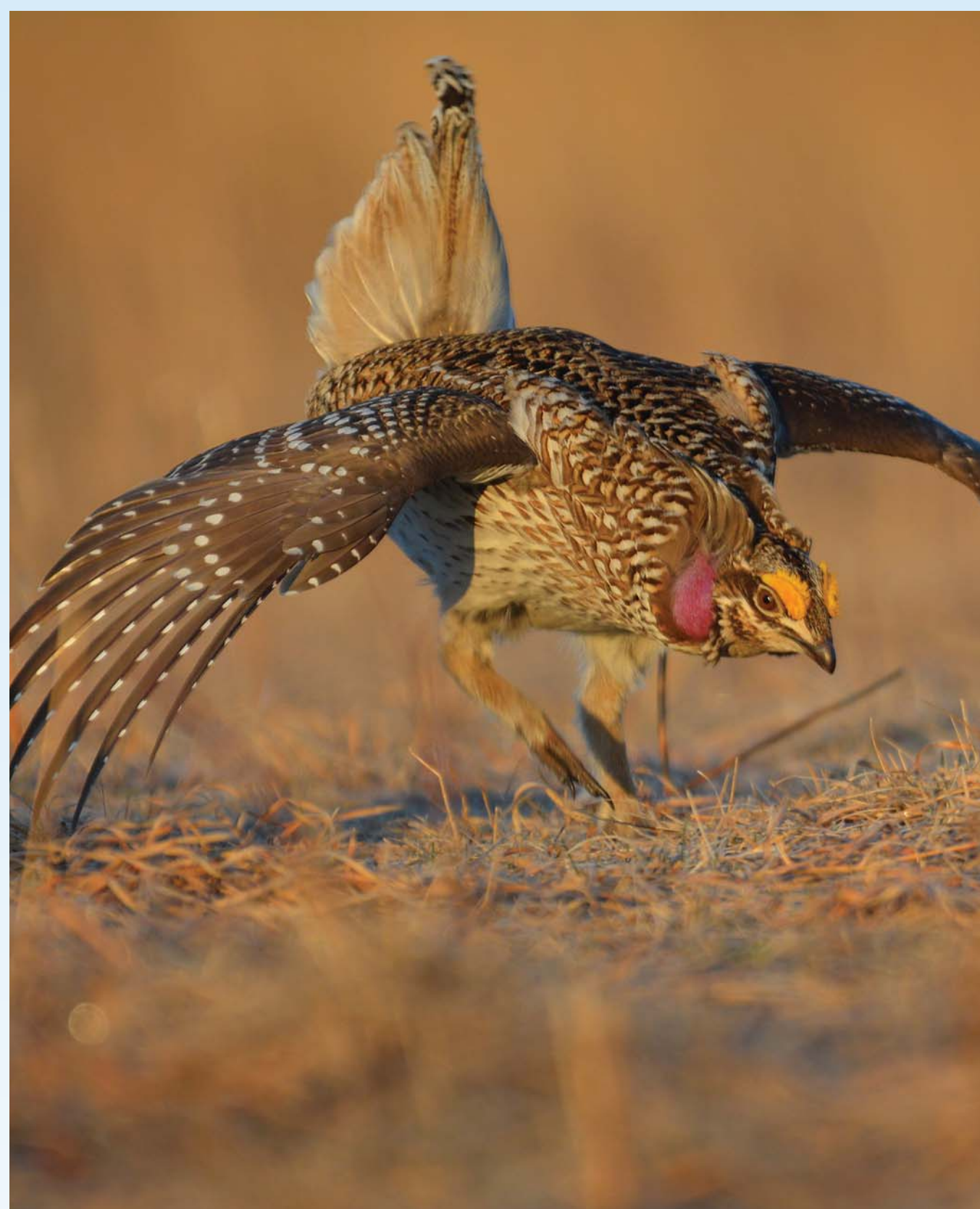


Minnesota Biomes

Sandhill Crane in flight, Photo: Travis Bonovsky



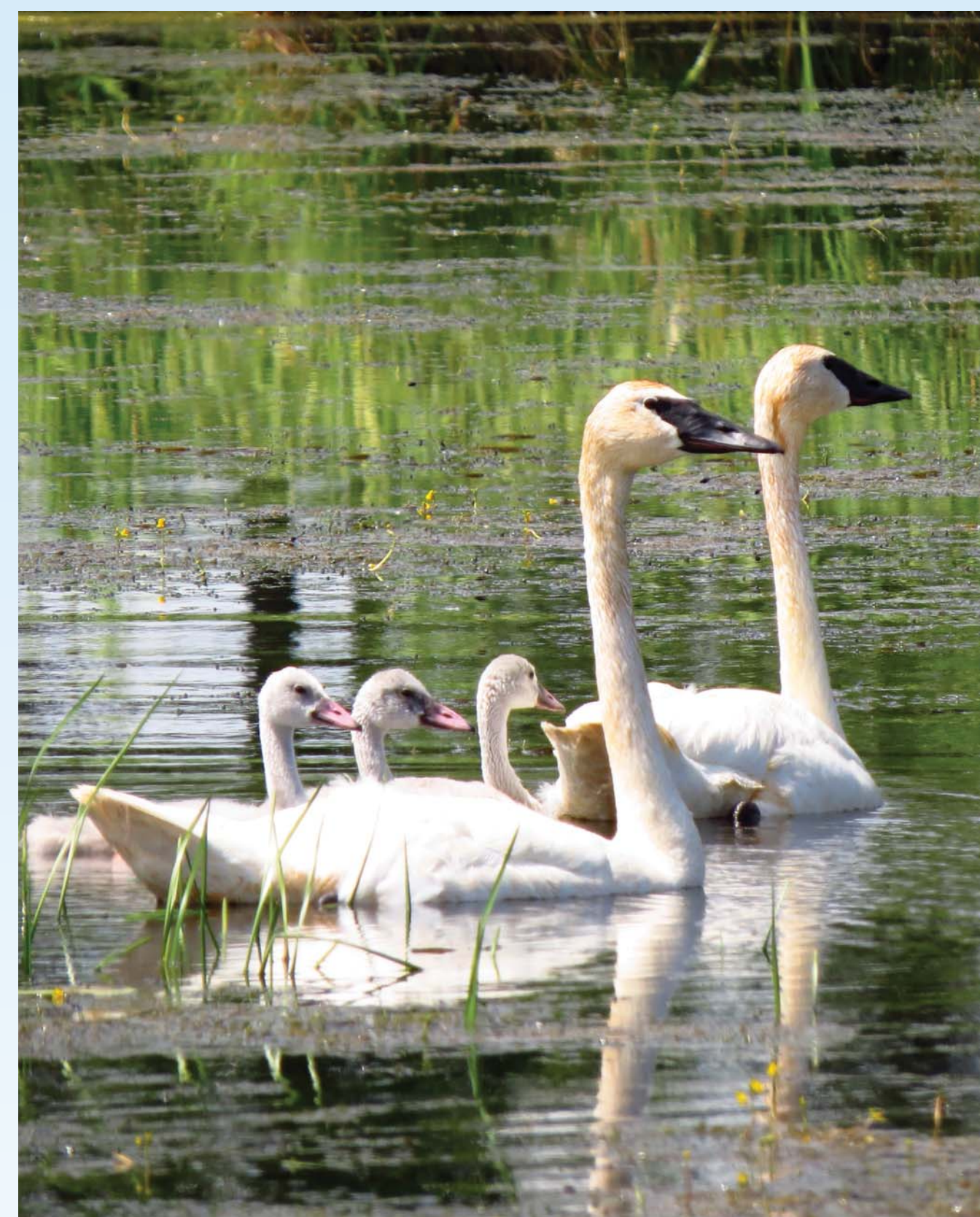
Sandhill Cranes staging before migration. Photo: Travis Bonovsky



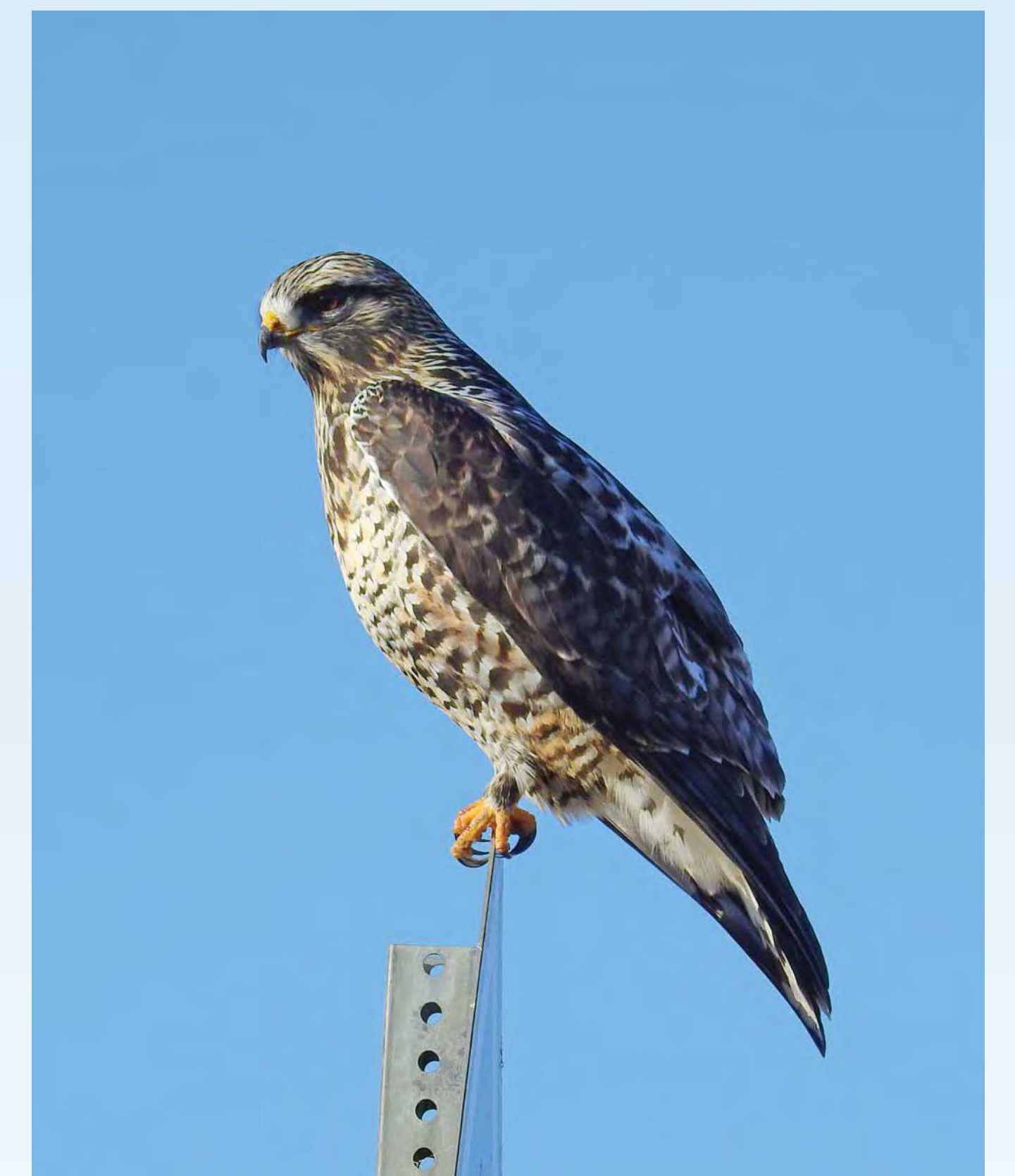
Sharp-Tailed Grouse, Photo: Travis Bonovsky



Bottle Gentian, Photo: Heidi Hughes



Trumpeter Swan family, Photo: Sandy Aubol



Rough-legged Hawk, Photo: Sandy Aubol

# Wetland Birds



Sandhill Cranes, photo: Travis Bonovsky



Lesser and Greater Yellowlegs, Photo: Sandy Aubol

Watershed District impoundments provide a variety of water depths attractive to a wide array of birds. Look for:

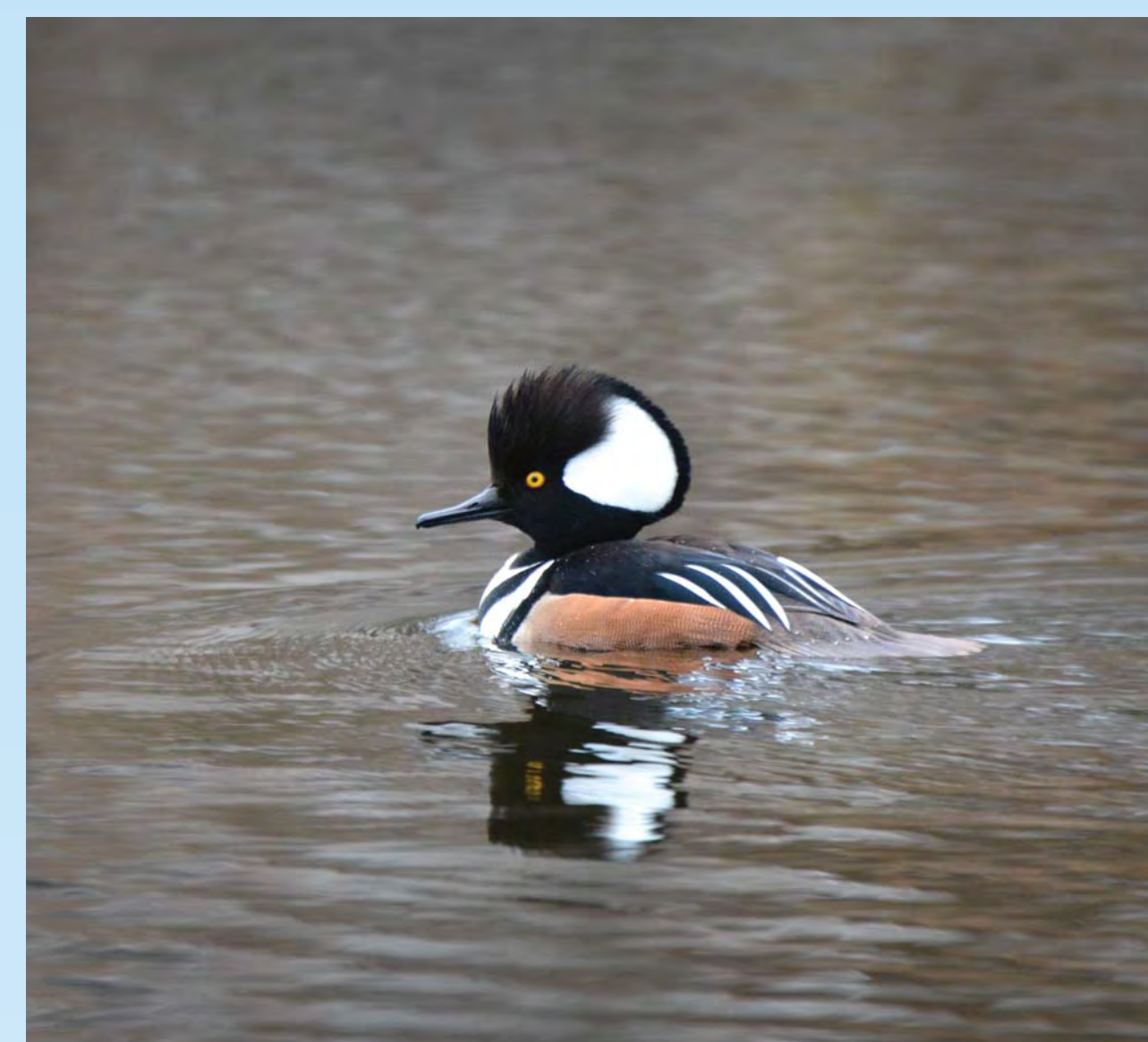
- Wading birds - herons, egrets and bitterns along the edges and marshy areas.
- Dabbling ducks and teals in shallow pond areas.
- Grebes, mergansers and diving ducks In deep open water areas.
- Shorebirds - yellowlegs, plovers along the shore on sandy beaches and mudflats.



Great Blue Heron, Photo: Travis Bonovsky



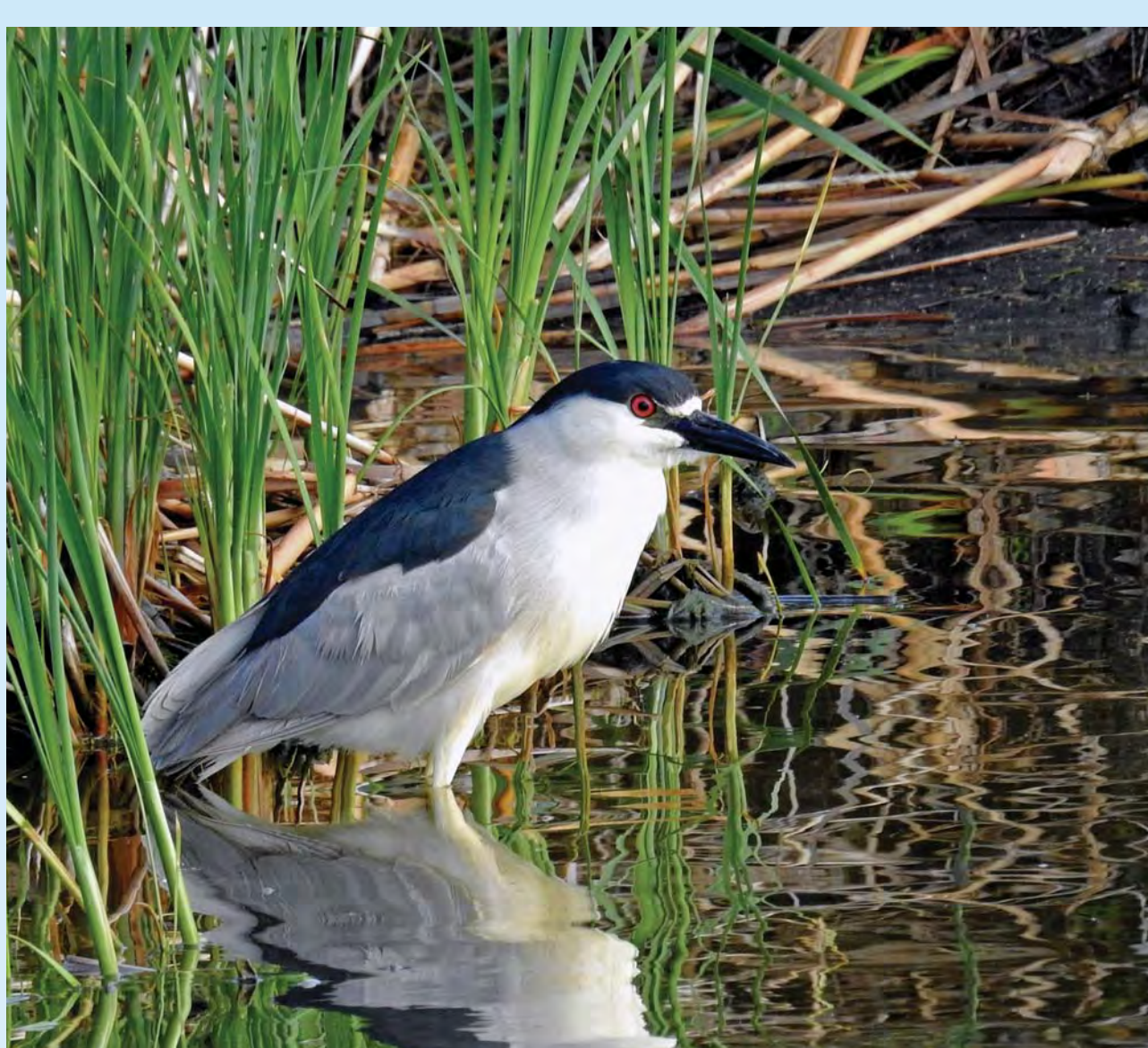
Pied-billed Grebe (juvenile), Photo: Heidi Hughes



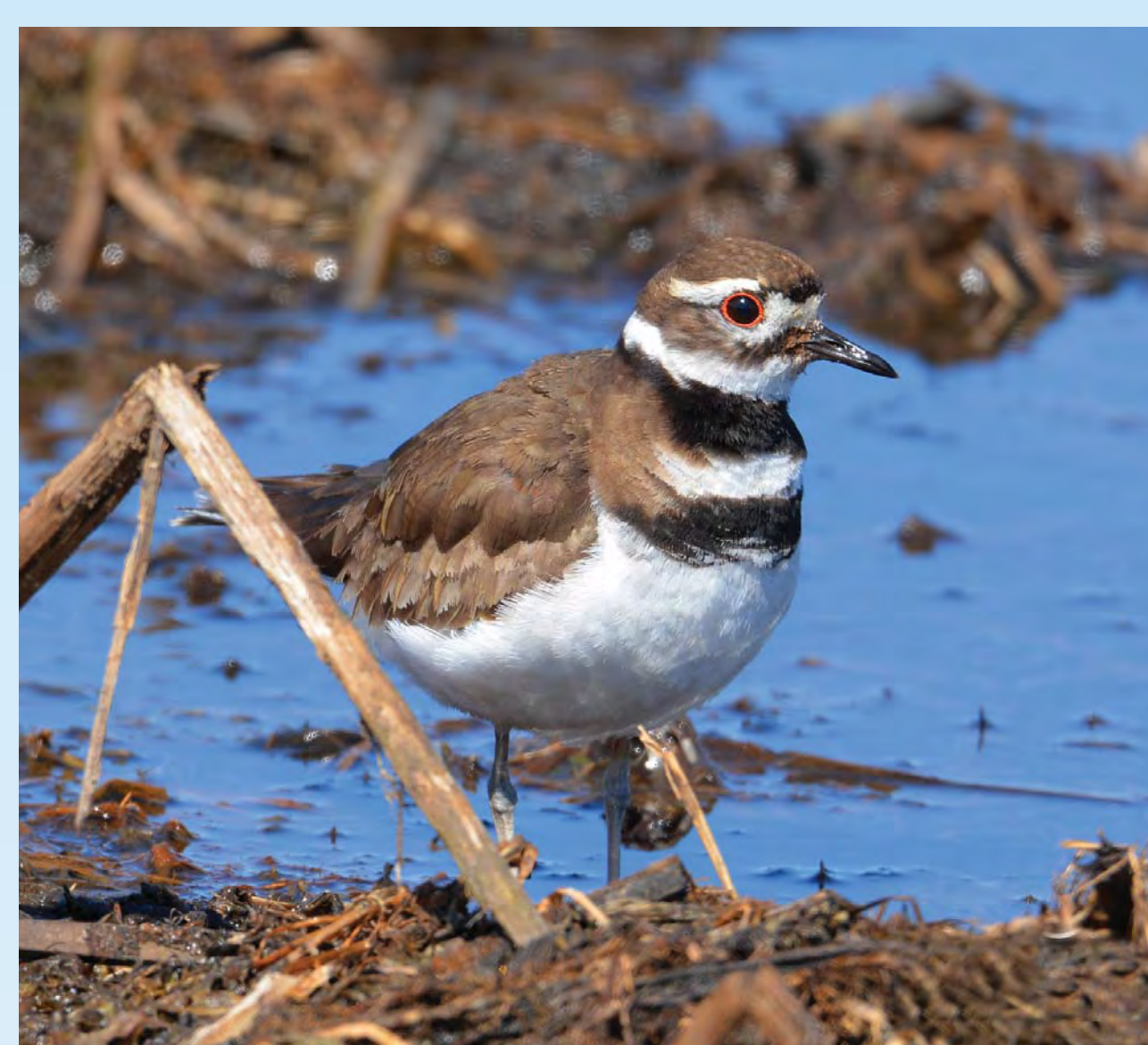
Hooded Merganser, Photo: Travis Bonovsky



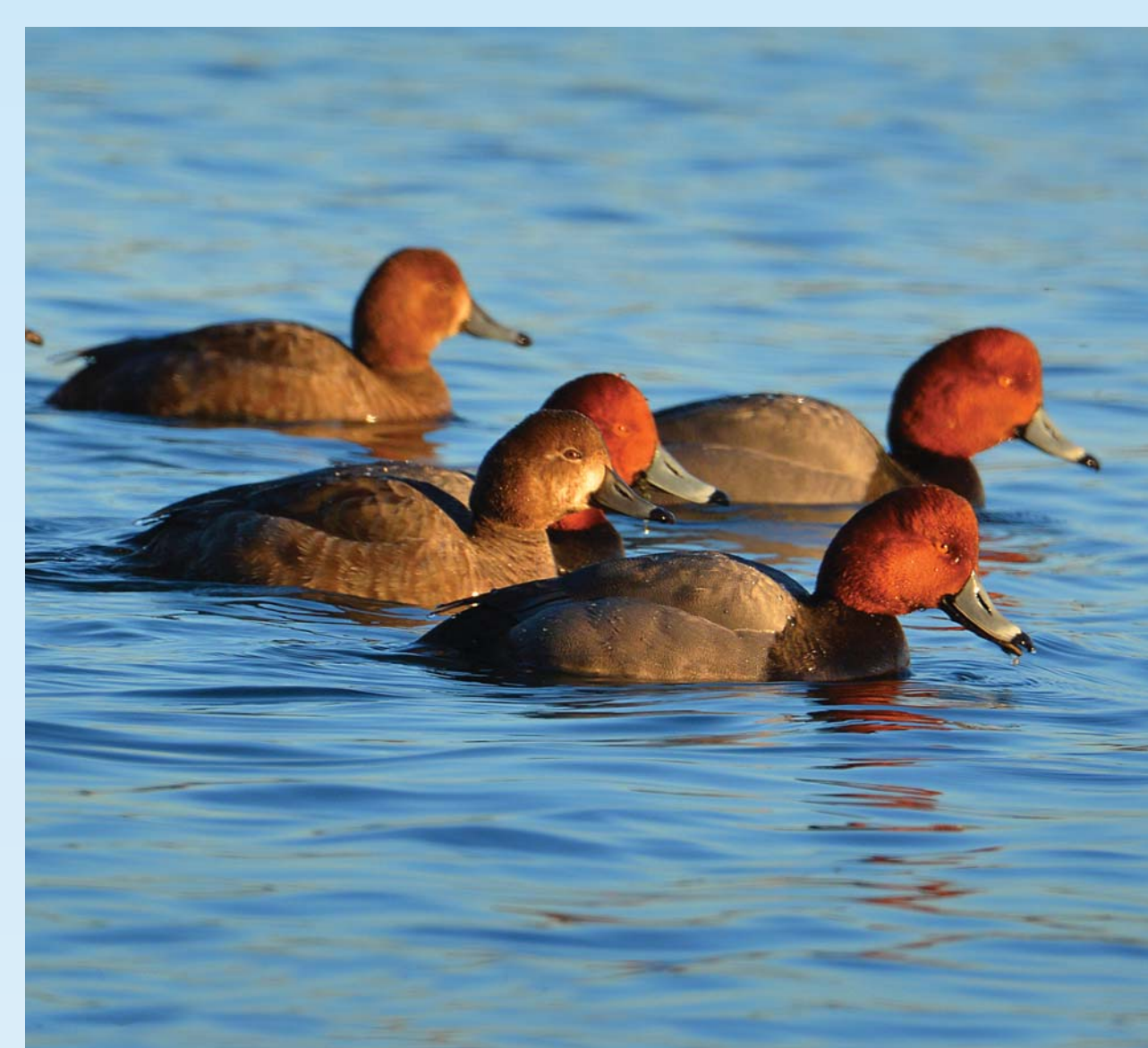
Western Grebe, Photo: Travis Bonovsky



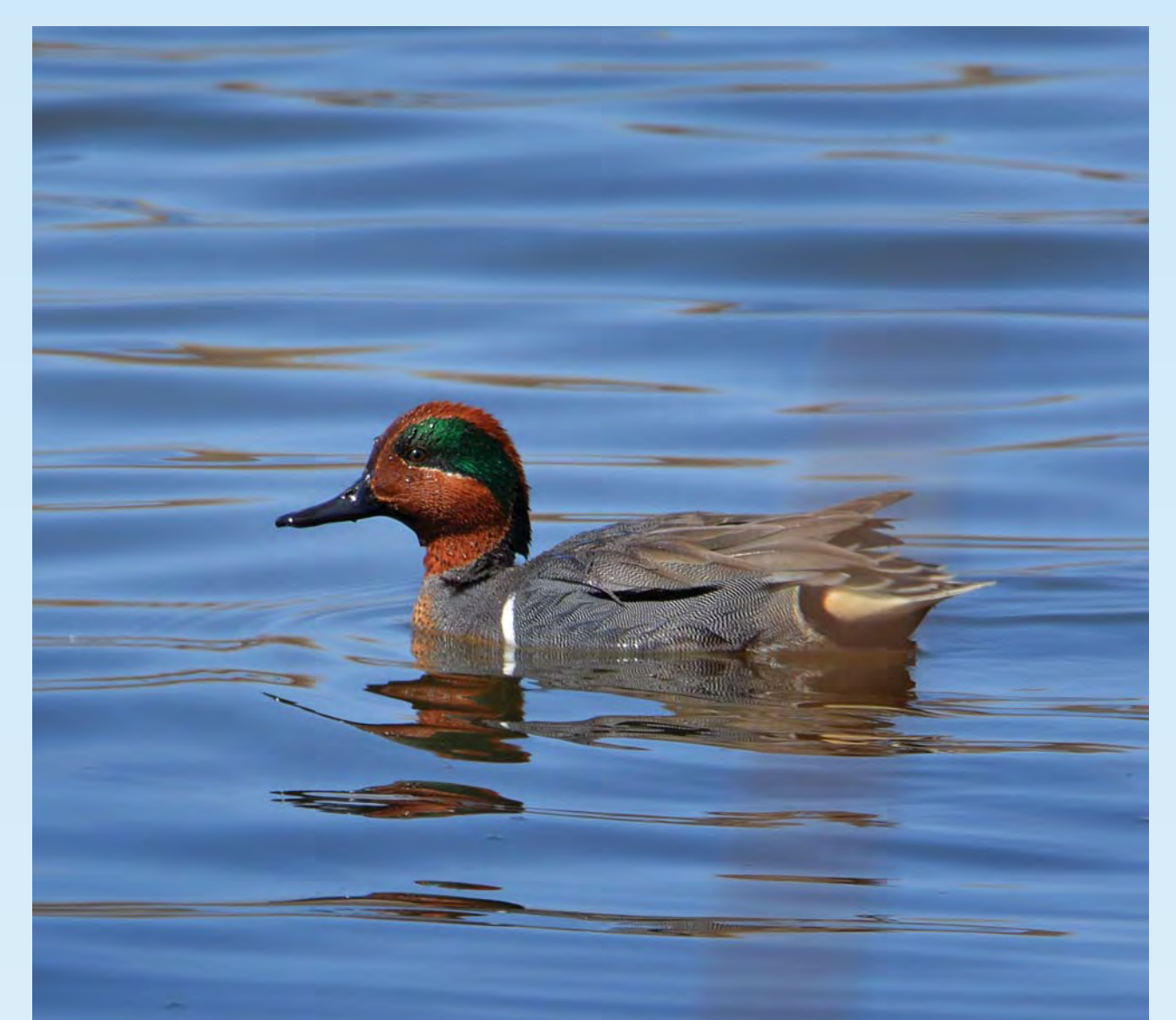
Black-crowned Night-Heron, Photo: Sandy Aubol



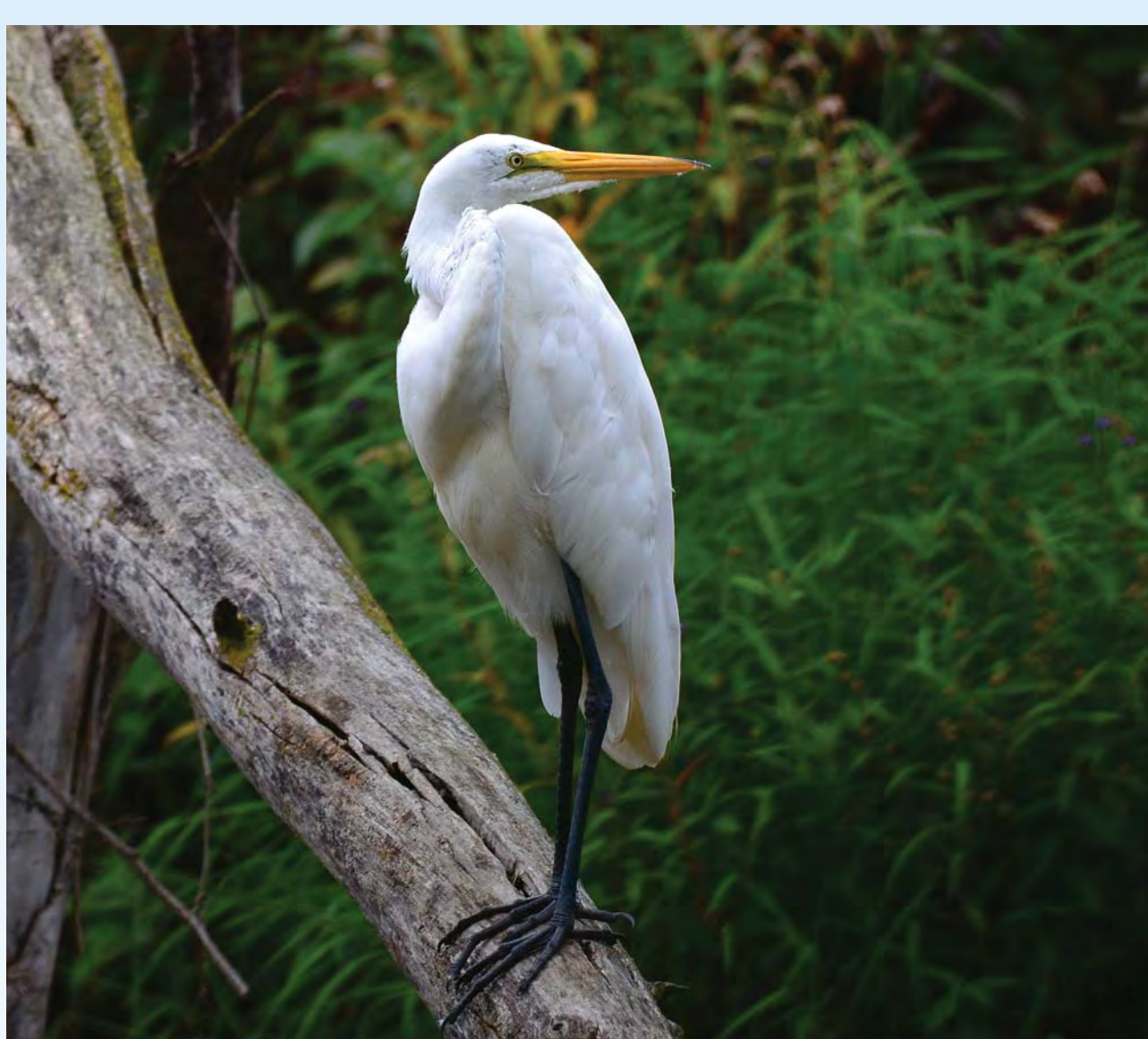
Killdeer, Photo: Travis Bonovsky



Redhead, Photo: Travis Bonovsky



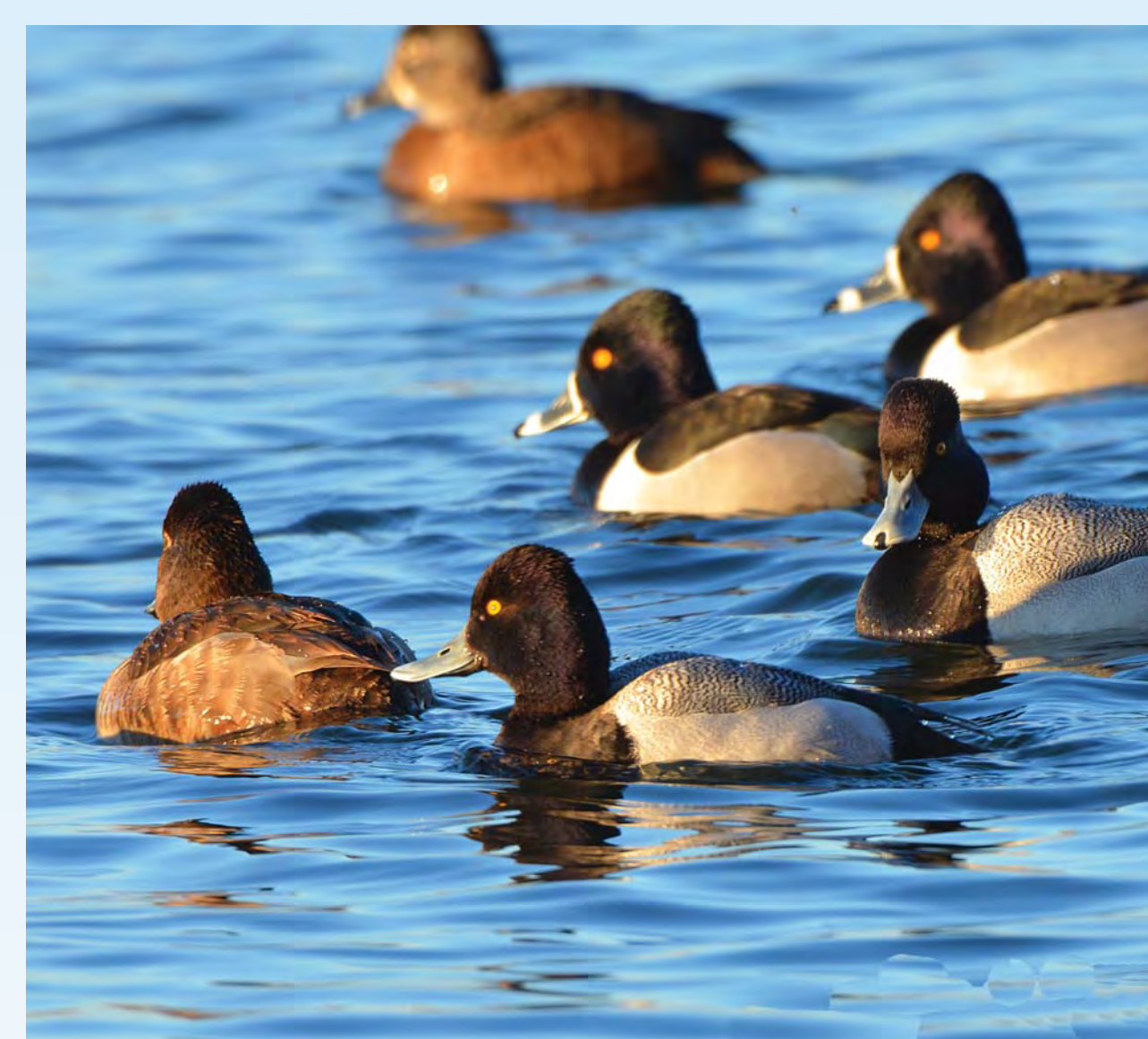
Green-winged Teal, Photo: Travis Bonovsky



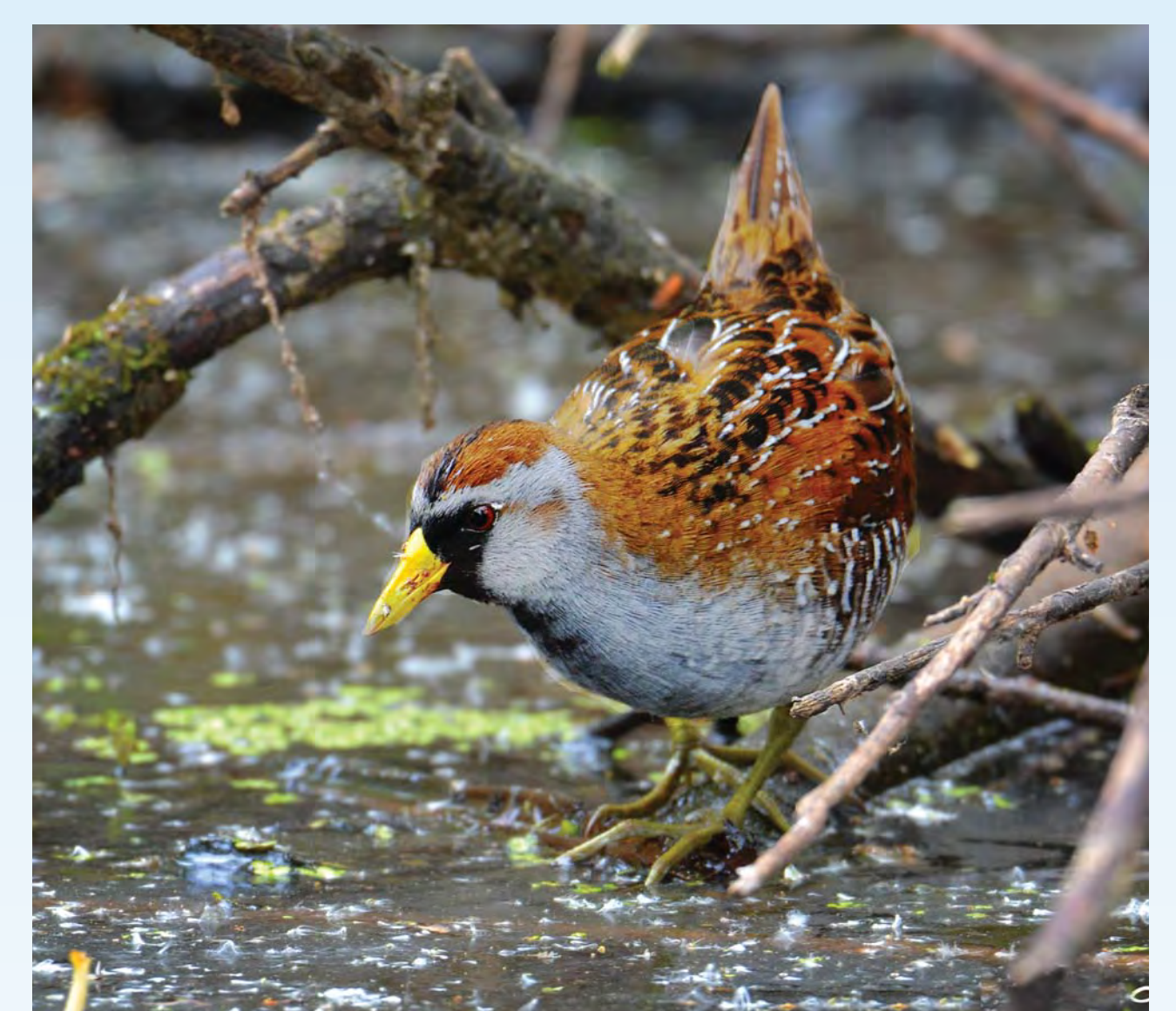
Great Egret, Photo: Travis Bonovsky



American Bittern, Photo: Sandy Aubol



Lesser Scaup, Photo: Travis Bonovsky



Sora, Photo: Travis Bonovsky



# Grassland Birds



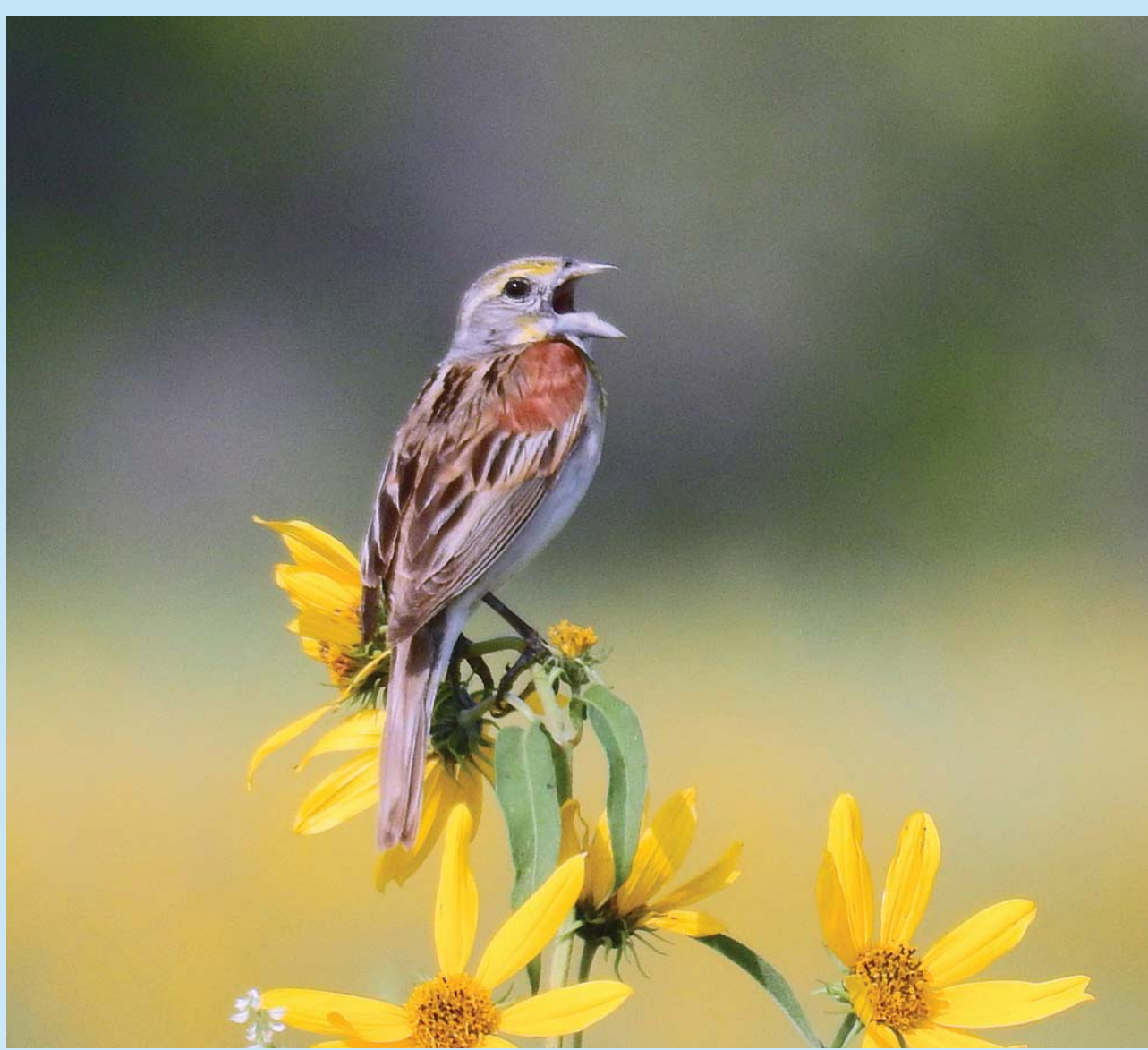
Snowy Owl, Photo: Sandy Aubol

These are some of the grassland birds found in the parklands of northwestern Minnesota. The native grasses and flowers provide abundant seeds and insects for foraging and nesting.

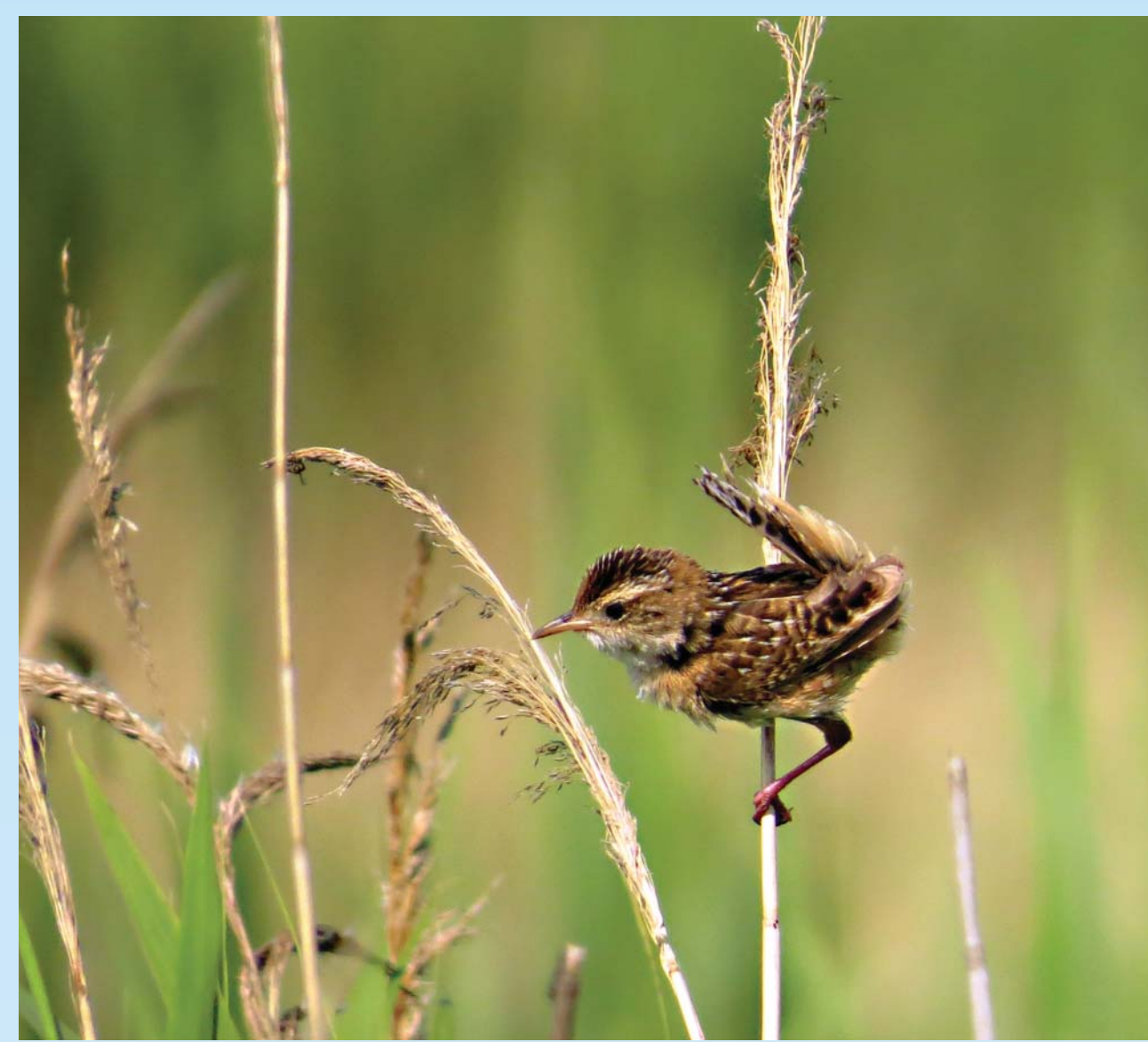
Grasslands offer nest sites for many species - waterfowl, shorebirds, waders, raptors, grouse and songbirds. They nest on the ground, in the grass or in shrubs. Delayed mowing of hay fields until August is a "bird friendly" practice that allows birds to complete a nesting cycle and time for fledglings to take flight.



Sandhill Crane, Photo: Travis Bonovsky



Dickcissel, Photo: Sandy Aubol



Sedge Wren, Photo: Sandy Aubol



American Kestrel, Photo: Heidi Hughes



Snowy Owl, Photo: Sandy Aubol



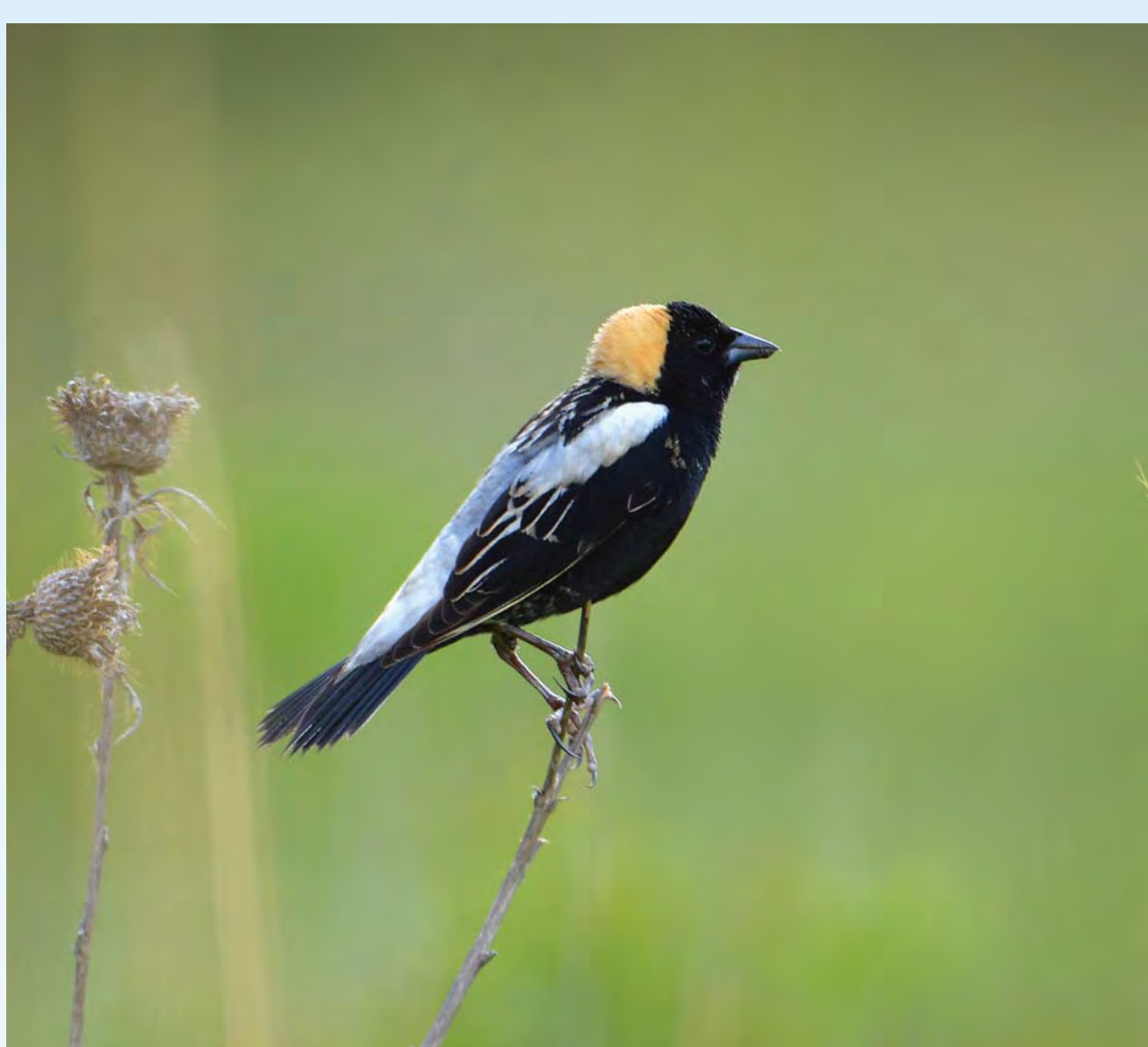
Western Meadowlark, Photo: Sandy Aubol



Clay-colored Sparrow, Photo: Sandy Aubol



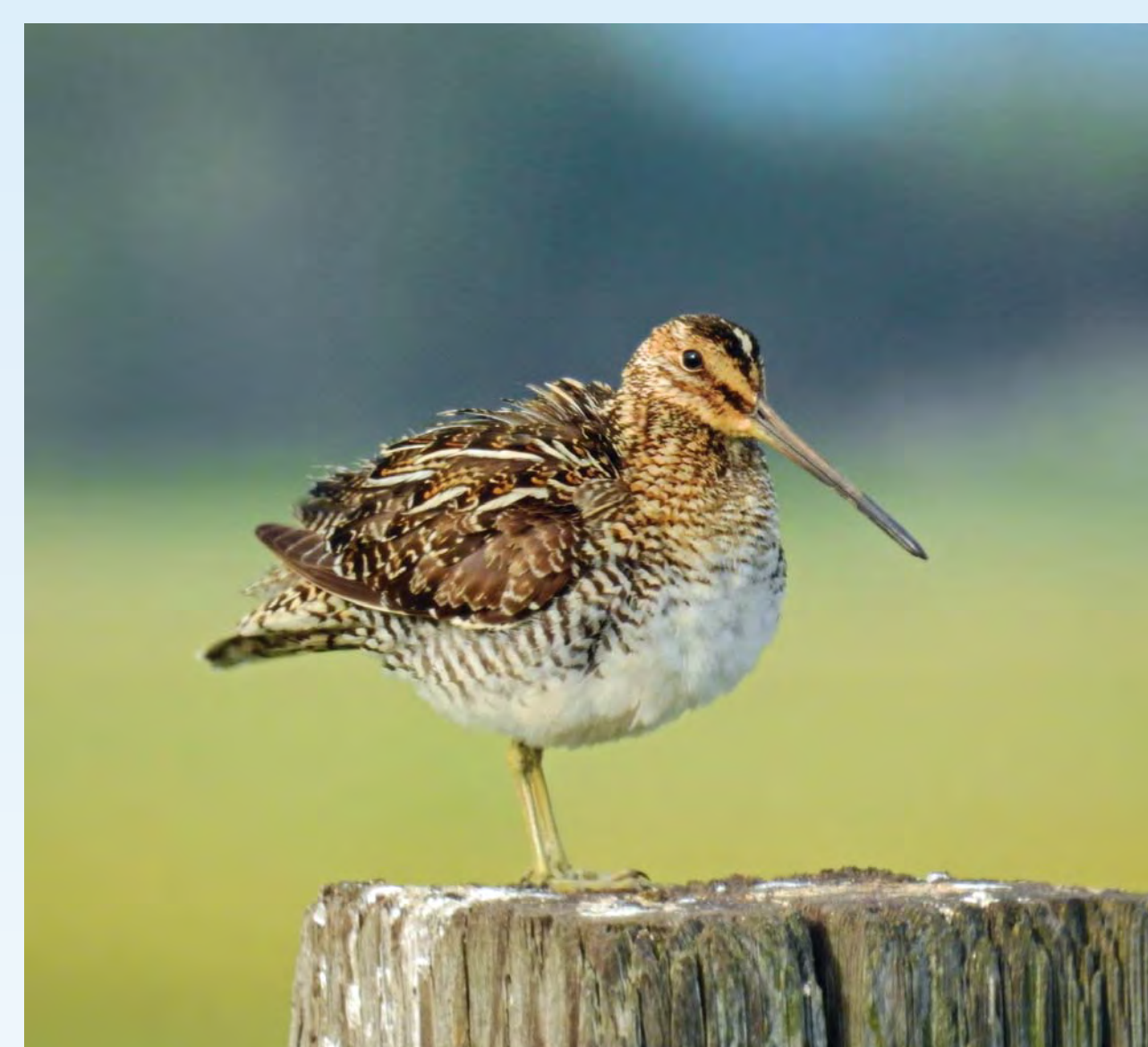
Greater Prairie-Chicken, Photo: Sandy Aubol



Bobolink, Photo: Travis Bonovsky



Upland Sandpiper, Photo: Sandy Aubol



Wilson's Snipe, Photo: Sandy Aubol



Short-eared Owl, Photo: Sandy Aubol

## MSTRWD comments of the kiosk panels

A dike is an embankment built to prevent flooding or hold water.

A levee is an embankment built to keep water flowing downstream and keep it from spilling over.

The impoundment embankments would be better described as dikes.

## **Reducing Floods Creating Habitat** page

### **How Impoundments Work** paragraph on right side

1<sup>st</sup> paragraph is fine.

2<sup>nd</sup> paragraph could state:

“Some impoundments retain a portion of the captured spring melt to be used for downstream summer augmentation. Other impoundments release water after the flooding event diminishes.”

3<sup>rd</sup> paragraph could state:

“The excavation of clay used to build the dikes creates both shallow and deep ponds providing wildlife habitat.”

The other impoundment photos should have the watershed name they are located in. Only the Red Lake Watershed District is mentioned.

I think the photo credits should be in larger font. I like the blue hued photo background idea.

If the lower right box is going to be empty, can an aerial photo of a drainage area be placed there? This would be an opportunity for the TRWD to include a photo.

**Tallgrass Aspen Parkland, Grassland Birds** and **Wetland Birds** pages are very good.

Danny

January 9, 2018

Mark S. Foldesi, Chair  
County Board of Commissioners  
Roseau County Courthouse  
606 5th Ave SW, Room 131  
Roseau, Minnesota 56751

**Sent Via Email:**

**RE: Determination of Adequacy, Roseau County Buffer Ordinance**

Dear Chairman Foldesi,

Thank you for sending a copy of the county's buffer ordinance along with a signed resolution documenting adoption by the Roseau County Board of Commissioners on November 14, 2017 to the Board of Water and Soil Resources (BWSR) for a final determination on adequacy.

We appreciate the county's efforts in making changes to the ordinance in response to our initial comment letter (dated 9/19/2017). In our review of the county's adopted ordinance, we would like to make reference to several areas of interest that the county should consider as it proceeds to administer the ordinance, as follows:

- In the review of the adopted ordinance we found the ordinance (Sections 5.2, 6.2.1, 6.2.5) prescribes specific responsibilities for the Soil and Water Conservation District that differs from the model ordinance. Those authorities are not explicitly expressed in Minn. Stat. §103F.48. This prescription of responsibilities to the SWCD does not prevent the ordinance from being determined to have adequate procedures for the purposes of Minn. Stat. 103F.48 and 103B.101, subdivision 12a. However, without a supporting agreement between the County and SWCD it is important that the county understand that it is responsible to ensure that the ordinance provides for adequate enforcement of the Buffer Law. As such, we recommend that the county work cooperatively with the SWCD on developing an agreement to perform duties that are prescribed in your ordinance.
- Section 6.1 (a) (i) adds language that could extend the 11 month statutory penalty exception. If a corrective action notice extends the penalty free timeline, it should contain findings that justify the extension.
- The ordinance does not appear to contain language regarding the statute of limitations requirements for Administrative Penalty Orders (APO). There are specific requirements associated with this authority that should be included in the ordinance since the county will be using APO procedures. Section 6.3.1 of the model ordinance contains language that the county should consider incorporating into the ordinance the next time it's amended.

BWSR has completed its final review in conformance with state law and concluded that Roseau County has adopted an ordinance, titled Roseau County Buffer Ordinance No. 40 that contains adequate provisions for compliance and enforcement of Minn. Stat. §103F.48 (the Buffer Law). Therefore, BWSR is pleased to inform you that Roseau County is determined to be "With Jurisdiction" in accordance with Minn. Stat. §103F.48 Subd. 1 (j).

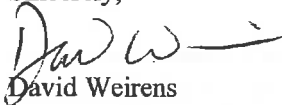
Finally, any change to this adopted ordinance must be submitted to BWSR at least 60 days prior to the effective date of the change in accordance with Procedure 9: BWSR's Review of County and Watershed District Buffer Rules, Ordinances and Official Controls. This will ensure that BWSR has adequate time for review and determination of adequacy on any proposed changes.

On behalf of BWSR, I wish to extend our appreciation for the commitment of the County Board of Commissioners and all others associated with the development of this ordinance.

Mark S. Foldesi  
January 9, 2018  
Page 2

Thank you for your cooperation on this matter. Should you have any questions, please contact Appeals and Regulatory Compliance Coordinator Travis Germundson at (651) 297-4958, or at [travis.germundson@state.mn.us](mailto:travis.germundson@state.mn.us).

Sincerely,



David Weirens  
Assistant Director Programs and Policy

cc: Jeff Pelowski, Roseau County Coordinator  
Scott Johnson, Roseau County SWCD  
Tracey Halstengard, Roseau River WD  
Daniel Money, Two Rivers WD  
Joel Praska, Middle Snake Tamarac Rivers WD  
Myron Jesme, Red Lake WD  
Warroad River WD  
DNR- Jennifer Shillcox, Dan Petrik, Stephanie Klamm  
BWSR: Travis Germundson, Tom Gile, David Leuthe, Matthew Fischer, Darren Mayers

**m** BOARD OF WATER  
AND SOIL RESOURCES

January 9, 2018

Chuck Flage, Chair  
Red Lake County Board of Commissioners  
County Courthouse  
124 Langevin Ave  
Red Lake Falls, MN 56750

Sent Via Email:

**RE: Determination of Adequacy, Red Lake County Buffer Ordinance**

Dear Chairman Flage,

Thank you for sending a copy of the county's buffer ordinance along with a signed resolution documenting adoption by the Red Lake County Board of Commissioners on September 12, 2017 to the Board of Water and Soil Resources (BWSR) for a final determination on adequacy.

We appreciate the county's efforts in making changes to the ordinance in response to our initial comment letter (dated 9/7/2017). In our review of the county's adopted ordinance, we would like to note one item the county should consider revising the next time the county proposes amendment to the ordinance as follows:

- Section 6.3.1 contains model ordinance language on statute of limitations that has been determined to be inconsistent with statute. The sentence "Any administrative enforcement proceeding including the issuance of an APO should be undertaken within three years after the alleged violation was discovered or reasonably should have been discovered by the County" can simply be removed. The correct timeframe of two years is already referenced in that section.


BWSR has completed its final review in conformance with state law and concluded that Red Lake County has adopted an ordinance, titled Red Lake County Buffer Ordinance that contains adequate provisions for compliance and enforcement of Minn. Stat. §103F.48 (the Buffer Law). Therefore, BWSR is pleased to inform you that Red Lake County is determined to be "With Jurisdiction" in accordance with Minn. Stat. §103F.48 Subd. 1 (j).

Finally, any change to this adopted ordinance must be submitted to BWSR at least 60 days prior to the effective date of the change in accordance with Procedure 9: BWSR's Review of County and Watershed District Buffer Rules, Ordinances and Official Controls. This will ensure that BWSR has adequate time for review and determination of adequacy on any proposed changes.

On behalf of BWSR, I wish to extend our appreciation for the commitment of the County Board of Commissioners and all others associated with the development of this ordinance.

Thank you for your cooperation on this matter. Should you have any questions, please contact Appeals and Regulatory Compliance Coordinator Travis Germundson at (651) 297-4958, or at [travis.germundson@state.mn.us](mailto:travis.germundson@state.mn.us).

Sincerely,



David Weirens  
Assistant Director Programs and Policy

cc: Bob Schmitz, Red Lake County Auditor  
Kurt Casavan, Red Lake County Ditch Authority  
Tanya Hanson, Red Lake SWCD  
Myron Jesme, Red Lake WD  
DNR- Jennifer Shillcox, Dan Petrik, Stephanie Klamm  
BWSR: Travis Germundson, Tom Gile, David Leuthe, Matthew Fischer, Darren Mayers

## Tammy Audette

---

**From:** Myron Jesme  
**Sent:** Monday, January 22, 2018 3:27 PM  
**To:** Wayne.Skoe@co.Koochiching.mn.us  
**Cc:** Tammy Audette  
**Subject:** Red Lake Watershed District Advisory

Wayne,

I will inform my Board of your wishes to participate on the Technical Advisory Committee for the Red Lake Watershed District. In looking at our list of members representing Upper Red Lake Area, we have Emmitt Weidneborner, Kelliher and John Ungerecht, Northome. Would you be replacing John on this committee or would both of you be members? My Board meets Thursday, January 25<sup>th</sup>, so I will let you know if you are appointed.

Thank you for showing an interest in the Red Lake Watershed District activities.

**\* Please change my e-mail in your address book from [jesme@wiktel.com](mailto:jesme@wiktel.com) to [myron.jesme@redlakewatershed.org](mailto:myron.jesme@redlakewatershed.org)**

**Myron Jesme**  
**Administrator - Red Lake Watershed District**  
1000 Pennington Avenue South  
Thief River Falls, MN. 56701  
[myron.jesme@redlakewatershed.org](mailto:myron.jesme@redlakewatershed.org)  
D : 218-681-5800  
C : 218-686-9692

## Overall Advisory Committee

John A. Nelson, Walker Brook Area  
Lloyd Wiseth, Landowner  
Steve Holte, Farmer/Landowner  
Emmitt Weidenborner, Upper Red Lake Area  
John Ungerecht, Upper Red Lake Area  
Dan Schmitz/Black River Area  
John Gunvalson, Clearwater River Area  
Roger Love, Grand Marais Area  
Dave Rodahl, Thief River Area  
Shane Bowe, Red Lake Band of Chippewa Indians  
Loiell Dyrud, Landowner

## Advisory Committee Members

### Black River Area

\*Dan Schmitz, RLF  
Curt Beyer, RLF  
Greg Dyrud, TRF

### Moose River Area

Wayne Larson, Middle River  
Elroy Aune, Gatzke

### Burnham Creek Area

Mary Ann Simmons

### Clearwater River Area

Steve Linder, Oklee  
\*John Gunvalson, Gonvick

### Lost River Area

Gary Mathis, Gonvick

### Grand Marais/Red Area

Jeep Mattson, EGF

### Poplar River Area

### Clearwater Lake Area

### Thief River Area

\*Dave Rodahl, TRF  
Larry Hagen, Gatzke  
Trent Stanley  
\*Steve Holte  
Jim Sparby

### Walker Brook Area

\*John A. Nelson, Clearbrook

### Pine Lake Area

Dave Dalager

### Red Lake River Area

Keith Driscoll, EGF

### Upper Red Lake Area

\*Emmitt Weidenborner, Kelliher  
\*John Ungerecht, Northome

### Hill River Area

Jake Martell, Oklee

\*Overall Advisory Committee Members

# MAWD LEGISLATIVE RECEPTION, BREAKFAST, AND DAY AT THE CAPITOL



**Wednesday, March 7 - Thursday, March 8, 2018**  
**Embassy Suites, 175 10th St. E**  
**St. Paul, MN 55101**



The MAWD Legislative Breakfast and Day at the Capitol provide MAWD members with a great opportunity to build relationships with key legislators and to advance our legislative agenda. MAWD will invite all legislators to join us for the Wednesday evening reception and Thursday morning breakfast. Each Watershed District is responsible for scheduling meetings with their local legislators.

## *Schedule of Events:*

### Wednesday, March 7

9:00 A.M. - 1:30 P.M. Minnesota Association of Watershed Administrators (MAWA) Meeting

2:00 P.M. - 5:00 P.M. MAWD Board of Directors Meeting

5:00 P.M. - 7:30 P.M. MAWD Legislative Reception

7:30 P.M. - 8:30 P.M. Legislative Briefing

### Thursday, March 8

7:00 A.M. - 9:00 A.M. Legislative Breakfast

9:00 A.M. - 4:00 P.M. Meet with legislators and attend legislative committee hearings at the Capitol

## *Legislative Priorities:*

The following issues have been made a priority by the MAWD Board of Directors for the 2018 legislative session. The number in parentheses behind each item indicates the year a resolution was passed by the general membership on each matter.

### **Tax and Funding Issues – High Priority**

- Modify/increase the general fund levy limit for all non-metro watershed districts to \$500,000 (16)
- Advocate for a statutory clarification to allow broader use of levy funds with new state sources of project funding - HF 2456 (16)
- Support increasing the general fund levy limit for the Middle Fork Crow River Watershed District (17)
- Support bonding requests from watershed districts for the Flood Hazard Mitigation Program (16)
- Increase per diems for managers to \$100 per day (15)
- Monitor and act on any changes to enforcement funding for the Buffer Law
- Monitor and support BWSR bonding legislation

### **Policy Issues – High Priority**

- Amend the Open Meeting Law to allow electronic meeting participation by watershed district managers (16)
- Create a Stormwater Reuse Task Force that consists of local and state officials involved in water management (17)
- Protect the integrity of Clean Water Council appointments from undue influence by state agencies (15)
- Advocate for coordination and integration of state watershed programs with local watershed implementation (17)
- Monitor and act on any Buffer Law updates/changes

### **Tax and Funding Issues – Second Priority**

- Support a \$500,000 request for flood water retention engineering in the Lac qui Parle Yellow Bank watershed (13)
- Advocate for allowing more favorable tax treatment of conservation easements (16)
- Support stable funding for the DNR's Flood Damage Reduction Grant Program (17)

### **Policy Issues – Second Priority**

- Support establishment of watershed based water management organizations in the Minnesota River Basin (15)
- Support temporary quarantine authority to control the spread of aquatic invasive species (17)
- Support limited liability protections for certified commercial salt applicators (17)



## **Red Lake Watershed District - Administrators Report**

**January 25, 2018**

**Red River Watershed Management Board** – Leroy and I attended the meeting which was at 9:30 am, January 16, 2018 at the Red Lake Watershed District office. One note from the meeting is that the Executive Director informed the Board that he has narrowed the search for the new office space to be either Ada or Fertile.

**Thief River 1W1P-** I will be taking part in a telephone conference at 9:00 am, January 29<sup>th</sup> to discuss the information gathered at the public informational meetings.

**Red Lake River 1W1P** – There was a Planning Committee meeting held at 1:00 pm, Monday, February 5<sup>th</sup> at 2:00 at the Pennington SWCD Conference room. This meeting will be held to gather additional information on projects and budget for funding that will be forthcoming. This information will then be presented to the Policy Committee at their meeting held at 9:30 am, February 21<sup>st</sup> at the Red Lake Watershed District Board Room.

**Red River Watershed Management Board Administrators meeting** – There will be an Administrators meeting held Wednesday 10:00 am at the Sand Hill Watershed District, in Fertile. The meeting agenda items include RRWMB reorganization update, 2018 Legislative agenda, MAWD resolutions, FDR funding and general discussion & district updates. We hope to be completed with the meeting by noon.

**Pine Lake** – A webinar to discuss the Environmental Assessment of Pine Lake was held at 9:30 am, January 19, 2018. There was a lot of good discussion and was well attended.

**Four-Legged Lake** – We held a PWG meeting at 11:00 am January 19, 2018 at the RLWD office. The only agenda item was to try and reach a consensus on water elevations. As you know there was no consensus on four options presented. As directed by the RLWD Board, I instructed the PWG members to submit written comments by February 1<sup>st</sup>, explaining why they could not reach a consensus.

**Thief River Westside Flood Damage Reduction Project** – I was invited to attend a Senate Finance/Bonding Committee meeting at 2:00 pm January 17<sup>th</sup> at Digi Key. This meeting was to update the committee on funding needs for the Thief River Falls area which include the TR Westside FDR Project.

**Drainage Inventory and Inspection Database** – Brady, Arlene and I are working on the “Interim Report” for the year 2017 which is due January 31, 2018. The BWSR grant in the amount of \$38,700 will allow the District staff to better document ditch maintenance and inspection reports on all public drainage systems under the jurisdiction of the RLWD. This grant expires December 31, 2018.

**Water Quality Report** – I have included in your packets, Corey’s water quality report dated July/August 2017.

By Corey Hanson, Red Lake Watershed District Water Quality Coordinator. 1/23/2018

- ✓ District Monitoring
- ✓ Longitudinal Sampling
- ✓ Tindolph Beach Closure and Investigative Water Quality Sampling
- ✓ Fecal DNA Analysis for the Mud River and Walker Brook
- ✓ Clearwater River Watershed Restoration and Protection Strategy
- ✓ Red Lake River Watershed Restoration and Protection Strategy
- ✓ Thief River Watershed Restoration and Protection Strategy

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

The RLWD water quality program received help for a part of the summer from an intern, Bryanna Grefthen, who worked RLWD from July 10, 2017 until August 11, 2017. A full round of district monitoring was completed during the month of August.

Monitoring for blue-green algae problems in the Mud River in Grylga resumed. Samples were regularly collected and a dissolved oxygen logger was deployed. Water was tested for the presence of algal toxins using Abraxis test kits. The tests indicated that algal toxins were absent in all the samples that were collected in 2017.

High concentrations of total suspended solids (in excess of state water quality standards) were found in:

- Moose River at CSAH 54 – 64 mg/L
- Thief River at 380<sup>th</sup> St NE (north boundary of Agassiz National Wildlife Refuge) – 64 mg/L

A relatively high turbidity reading was found in the Moose River in early August. Abnormally high turbidity readings and total suspended solids concentrations were found in the Thief River upstream of Agassiz National Wildlife Refuge. The issue was investigated on 8/10/2017. The cloudiness in the water in the Thief River began somewhere between 400<sup>th</sup> St. NE and CSAH 6. There was no runoff occurring at the time. If the channel bottom was being disturbed within that reach, the clay particles from that disturbance would have stayed in suspension for a long time.



High concentrations of *E. coli* bacteria (>126 MPN/100ml) were found in:

- Blackduck River
- Burnham Creek at 180<sup>th</sup> Ave SW, downstream of the Spring Gravel stream restoration project (>2,419.6 MPN/100ml)
- Clear Brook
  - CSAH 92 (three times)
  - CSAH 5
  - Main St S
  - Railroad Ave NE
- Clearwater River at CSAH 2
- Darrigan's Creek (1,935 MPN/100ml)
- Hill River
  - 350<sup>th</sup> St. (downstream of a livestock operation)
  - 345<sup>th</sup> Ave SE
  - 340<sup>th</sup> St. SE (west crossing)
  - 290<sup>th</sup> St. SE
  - 290<sup>th</sup> Ave SE (twice)
  - 250<sup>th</sup> Ave SE
  - County Road 129 (240<sup>th</sup> Ave SE)
  - County Road 130 (230<sup>th</sup> Ave SE)
  - County Road 119 near Brooks
- Lost River
  - CSAH 8 near Gonvick
  - South Pine Lake Road (Pine Lake inlet)
  - 109<sup>th</sup> Ave, upstream of Pine Lake
  - Lindberg Lake Road
  - 141<sup>st</sup> Ave
- Moose River at CSAH 54
- Mud River
  - Grygla City Park
  - CSAH 54
  - Dylan Road
  - Flintlock Road
- Nasset Creek
  - Both crossings of Nasset Cr Dr
  - 410<sup>th</sup> St. (1,732.9 MPN/100ml at 410<sup>th</sup> St.)
- North Cormorant River (>2,419.6 MPN/100ml)
- O' Briens Creek
- Ruffy Brook at CSAH 11
- Silver Creek
  - CSAH 18
  - 161<sup>st</sup> Ave.
  - 159<sup>th</sup> Ave. twice, 1250 MPN/100ml daily geometric mean on 8/16/2017
  - 470<sup>th</sup> St.
  - 500<sup>th</sup> St.
- South Cormorant River
- Thief River at 140<sup>th</sup> Ave NE near Thief River Falls

High concentrations of total phosphorus that exceeded stream eutrophication standards were found in:

- Beau Gerlot Creek at County Road 114
- Blackduck River
- Chief's Coulee at Dewey Ave. in Thief River Falls
- Clear Brook
  - CSAH 92 (twice)
  - CSAH 5
  - Main St S
  - Railroad Ave NE
  - CSAH 74 (west crossing)
- Clearwater River at CSAH 10
- Cyr Creek
- Darrigan's Creek
- Grand Marais Creek at 110<sup>th</sup> St NW
- Heartsville Coulee at 13<sup>th</sup> St. SE
- Hill River
  - 290<sup>th</sup> Ave SE
  - CSAH 35
  - 335<sup>th</sup> Ave SE
- Lost River
  - Lindberg Lake Road
  - 109<sup>th</sup> Ave, upstream of Pine Lake
  - South Pine Lake Road (Pine Lake inlet)
  - CSAH 28
  - CSAH 5 in Oklee
  - County Road 119 near Brooks
- Lower Badger Creek
- Moose River at CSAH 54
- Nasset Creek
  - Both crossings of Nasset Cr Dr
  - 410<sup>th</sup> St. (1,732.9 MPN/100ml at 410<sup>th</sup> St.)
- North Cormorant River
- O' Briens Creek
- Polk County Ditch 2
- Poplar River
  - 310<sup>th</sup> St. SE
  - CSAH 30 near Fosston
  - County Road 118 (twice, mostly orthophosphorus)
- Red Lake County Ditch 23 (twice, nearly all orthophosphorus)
- Ruffy Brook at CSAH 11
- Silver Creek at CR 111
- South Cormorant River
- Thief River at 380<sup>th</sup> St NE (north boundary of Agassiz National Wildlife Refuge)

Low dissolved oxygen concentrations (<5 mg/L) were found in:

- Branch 200 of Judicial Ditch 11
- Burnham Creek at CSAH 48
- Chief's Coulee at Dewey Ave. in Thief River Falls
- Clear Brook
  - CSAH 74 (west crossing)
  - CSAH 92
- Clearwater River
  - CSAH 10 (during wild rice paddy drainage), eight days
  - Tower Road near Bagley
- Grand Marais Creek at 110<sup>th</sup> St NW (twice)
- Hill River
  - CSAH 29 (Cross Lake outlet), twice
  - CSAH 3 (twice)
  - 355<sup>th</sup> St. SE (twice)
  - 350<sup>th</sup> St. SE
  - 340<sup>th</sup> St. SE (twice)
  - 380<sup>th</sup> Ave. SE (twice)
  - 365<sup>th</sup> Ave. SE
  - Hill River Lake outlet
  - CSAH 35 (twice)
  - 320<sup>th</sup> St. SE
  - 310<sup>th</sup> St. SE
  - 290<sup>th</sup> Ave SE
- Little Black River at CR 102
- Lost River
  - 141<sup>st</sup> Ave
  - Lindberg Lake Road
  - 109<sup>th</sup> Ave, upstream of Pine Lake (three days)
  - South Pine Lake Road (Pine Lake inlet)
  - 530<sup>th</sup> St. (Anderson Lake outlet)
  - CSAH 28 (twice)
- Lower Badger Creek
- Moose River at Highway 89
- O' Briens Creek
- Polk County Ditch 14 (Maple Lake outlet), twice
- Poplar River Diversion at the Badger Lake inlet
- Red Lake County Ditch 23 (four days)
- Silver Creek
  - 161<sup>st</sup> Ave.
  - CSAH 18
  - 139<sup>th</sup> Ave (Anderson Lake inlet)
- Thief River at 380<sup>th</sup> St NE (north boundary of Agassiz National Wildlife Refuge)
- Walker Brook at CSAH 19 (twice)

High concentrations of biochemical oxygen demand (>2.0 mg/L in the Central River Nutrient Region and >3.5 mg/L in the Southern River Nutrient Region) were found in:

- Clearwater River at CSAH 10
- Mud River at Highway 89
- Poplar River
  - 310<sup>th</sup> St. SE
  - CSAH 30 near Fosston
- Red Lake River at CSAH 219
- Thief River at 140<sup>th</sup> Ave NE near Thief River Falls

Some notably good water quality monitoring results include:

- Very low *E. coli* bacteria concentrations (<10 MPN/100ml) in
  - Gentilly Creek
  - Hill River at the outlet of Hill River Lake
  - Judicial Ditch 30, Polk County Ditch 2
  - Lower Badger Creek
  - Polk County Ditch 14 (Maple Lake outlet)
- Very low TSS (1 mg/L or less) in
  - Clear Brook (all crossings)
  - Clearwater River
    - Klondike Bridge in Red Lake Falls
    - CSAH 12 (Terrebonne Bridge)
    - CSAH 11
    - CSAH 14
    - CSAH 2
    - Tower Road near Bagley
  - Hill River
    - County Road 119 near Brooks
    - 290<sup>th</sup> Ave SE
    - CSAH 35
    - 335<sup>th</sup> Ave SE
  - Judicial Ditch 73
  - Lost River
    - County Road 119 north of Brooks
    - CSAH 8
    - 109<sup>th</sup> Ave, upstream of Pine Lake
    - 141<sup>st</sup> Ave, upstream of Pine Lake
    - Lindberg Lake Road
  - Mud River in Grygla
  - Nasset Creek
  - Poplar River at 310<sup>th</sup> St. SE
  - Red Lake County Ditch 23
  - Thief River at CSAH 7
- Lower Red Lake River sites in Crookston, Fisher, and East Grand Forks met the 65 mg/L.

- It is also notable that the 8/10/2017 sample collected in Chief's Coulee met *E. coli* standards (67.7 MPN/100ml). It's just the second time that an *E. coli* concentration lower than 126 MPN/100ml has been recorded at the Dewey Avenue crossing. Unfortunately, concentrations of other pollutants were very high.
  - 5.05 mg/L of ammonia nitrogen
  - 1.54 mg/L of total phosphorus
  - 7.77 mg/L of total Kjeldahl nitrogen

### **Dissolved Oxygen Logger Deployments**

Dissolved oxygen loggers were deployed in streams that were in need of additional data. The loggers were programmed to record dissolved oxygen concentrations at 30-minute intervals. The around-the-clock monitoring is necessary to record actual daily minimum concentrations and to record the amount of fluctuation that occurs in one day. Seasonal water quality staff deployed loggers, retrieved loggers, downloaded data, cleaned the loggers, calibrated the loggers during each round of deployments, and collected extra field measurements at dissolved oxygen logger deployment sites.



In early July, dissolved oxygen loggers were deployed in Cyr Creek, Red Lake County Ditch 23, Hill River, Burnham Creek, and the Clearwater River. In late July, Eureka Manta dissolved oxygen loggers were deployed in Grand Marais Creek and Polk County Ditch 2. The Minnesota Pollution Control Agency also deployed a dissolved oxygen logger in Cyr Creek for their stream metabolism study. The MPCA was studying the stream to get a better understanding of what is causing low dissolved oxygen levels. The RLWD dissolved oxygen logger was removed from Cyr Creek in mid-July because the creek went dry.

Cyr Creek stopped flowing in mid-July (Culvert under 220<sup>th</sup> St. SW on 8/7/17)



The Pennington County Ditch 23, Burnham Creek, and Cyr Creek channels went dry, so the dissolved oxygen loggers and pipes were removed from those sites. One of the loggers from the dry sites was then moved to Nasset Creek and another was moved to the Lost River at CSAH 2.

Dissolved oxygen logger deployment in the Lost River at CSAH 2

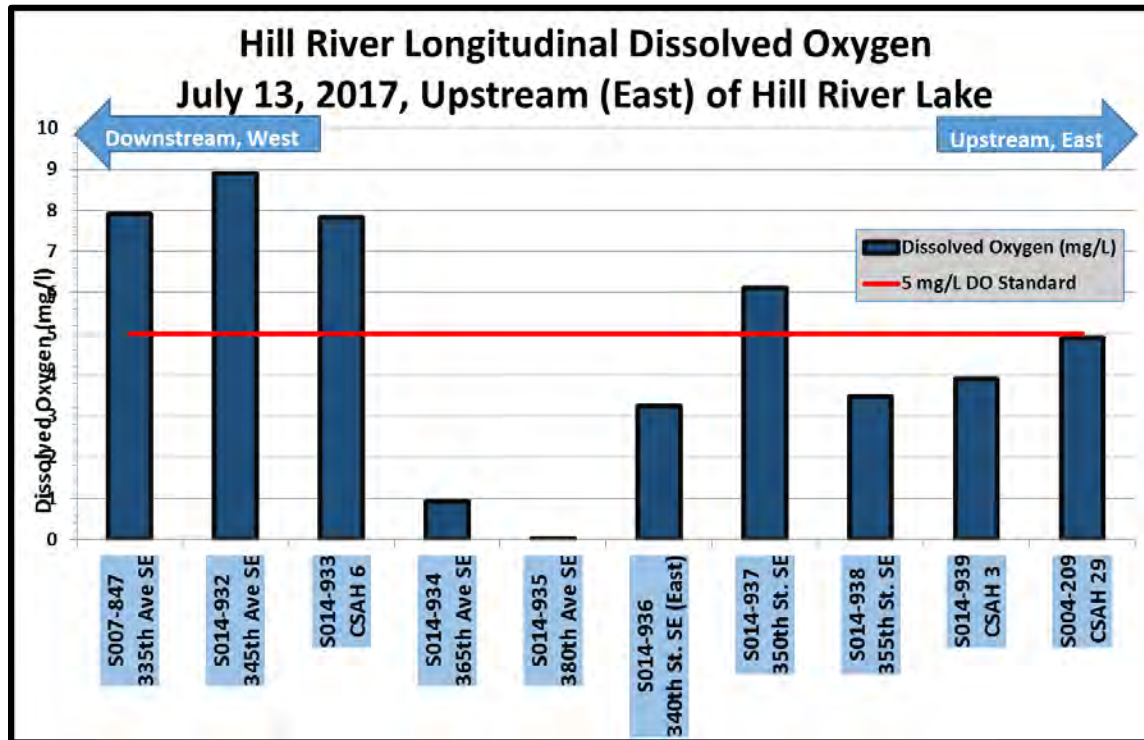




**Longitudinal Water Quality Sampling**

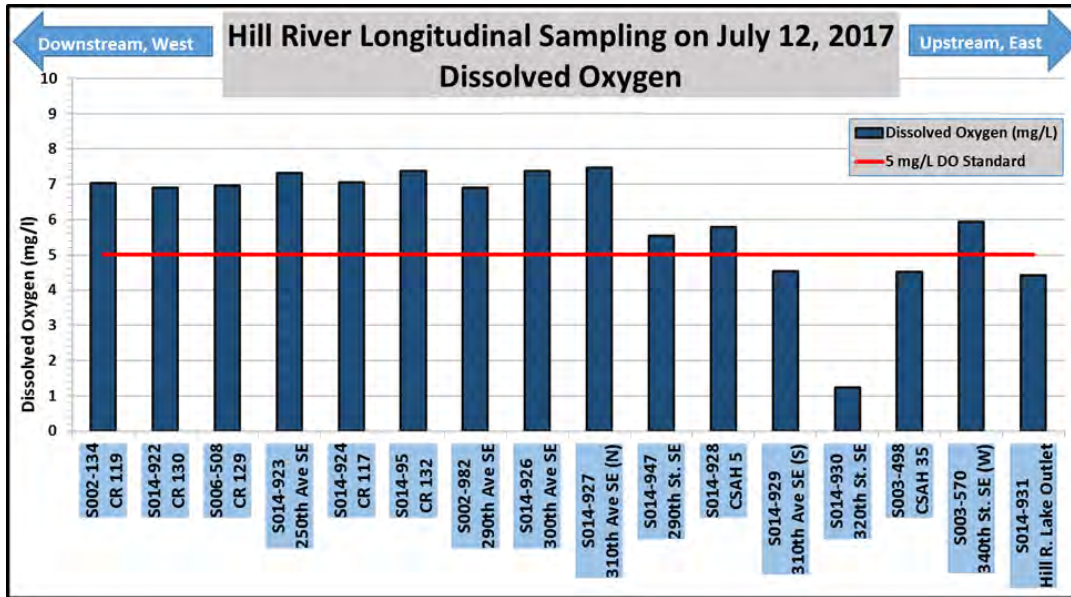
Longitudinal sampling at a series of accessible sampling stations along a stream can provide a snapshot of water quality conditions. That snapshot can be examined to identify reaches of streams in which water quality is degraded and reaches in which it improves. Areas where water quality declines can be examined for pollutant sources and landscape features that may be contributing to water quality problems.

Seasonal water quality staff collected longitudinal dissolved oxygen samples along the Hill River on multiple occasions during the summer of 2017. Similar patterns in dissolved oxygen concentrations were found in both rounds of measurements. Dissolved oxygen levels are being negatively affected between Cross Lake and Olga. The dissolved oxygen concentrations in the Hill River appear to be depressed along the reach that flows north, shortly downstream of Hill River Lake. The reach has a relatively low gradient and flows through wetlands where decomposition of organic material consumes dissolved oxygen and there is a lack of turbulence for reoxygenation. As the Hill River turns to the west, near 310<sup>th</sup> Ave SE, the gradient increases and dissolved oxygen concentrations also increase.

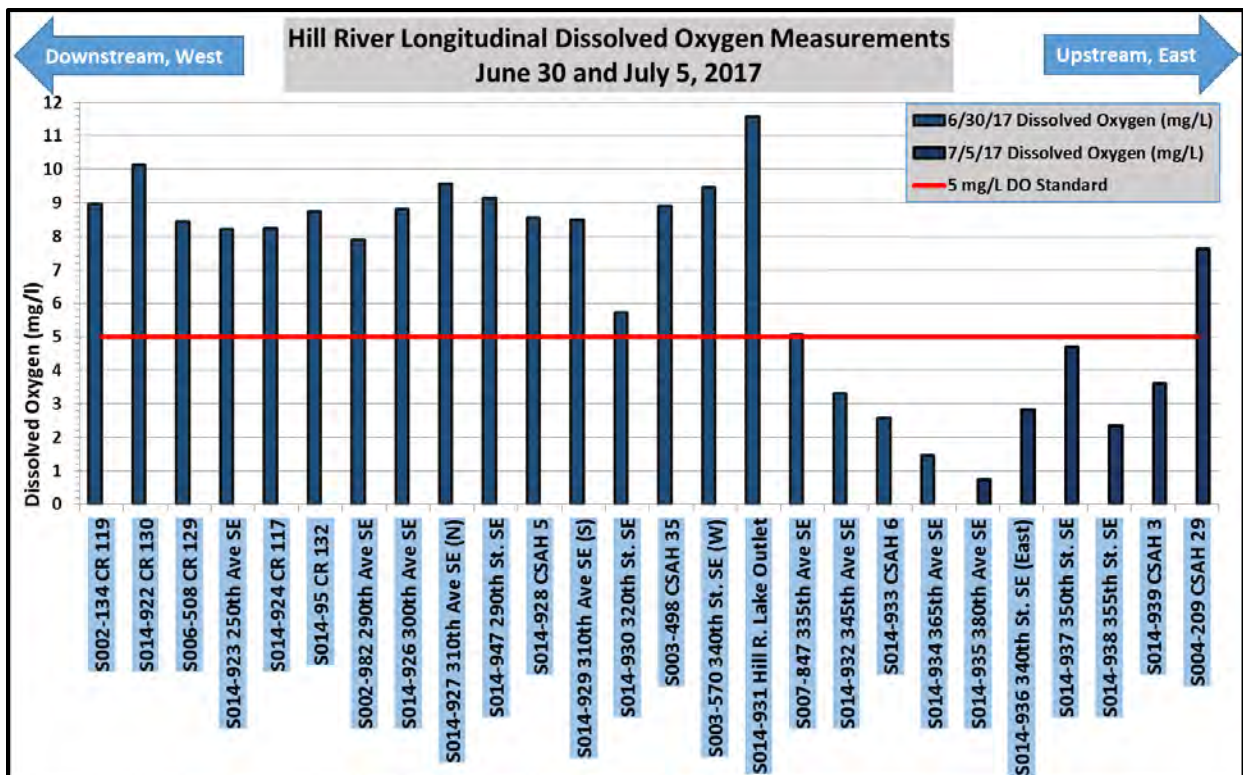


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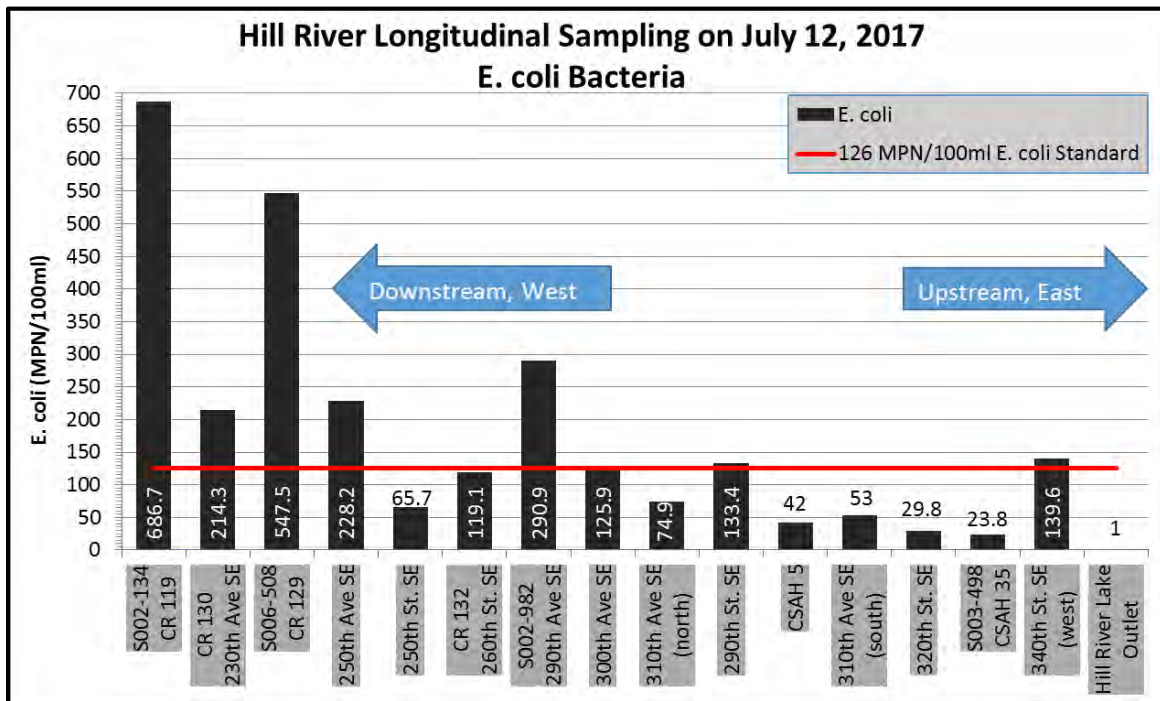
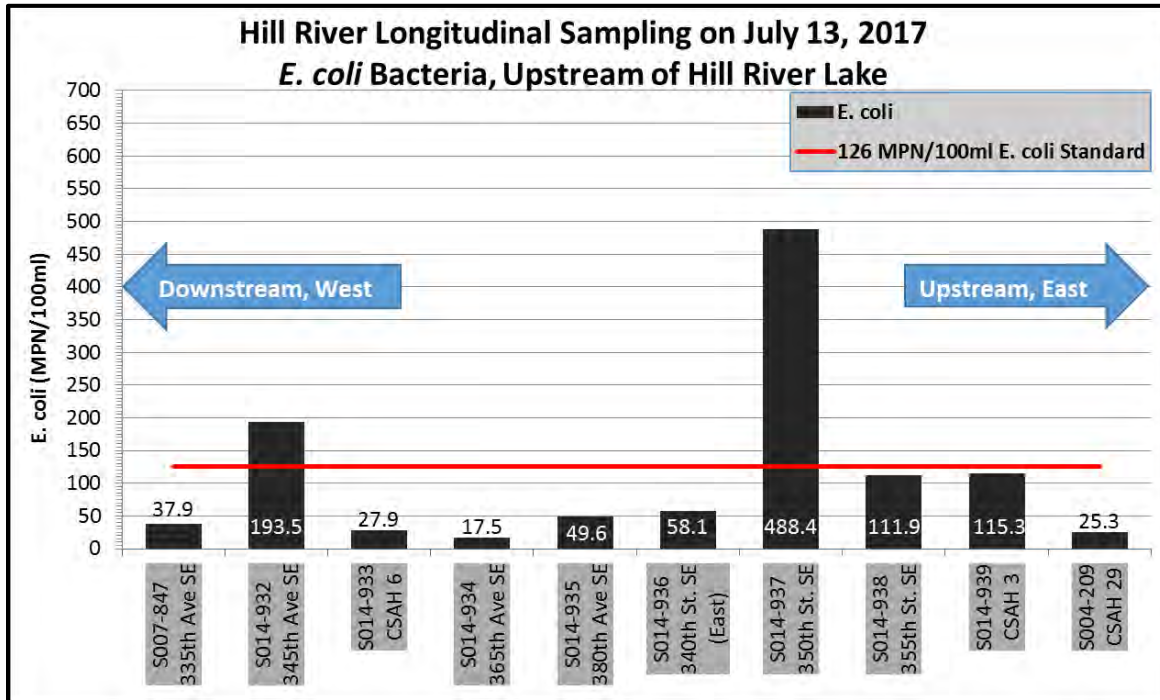
Seasonal staff collected longitudinal samples along the Hill River downstream of Hill River Lake on July 12, 2017 and along the Hill River upstream of Hill River Lake on July 13, 2017. Something is causing very low dissolved oxygen levels in the Hill River near Olga. The longitudinal dissolved oxygen measurements downstream of Hill River Lake confirmed what assessment statistics and biological sampling results have suggested.



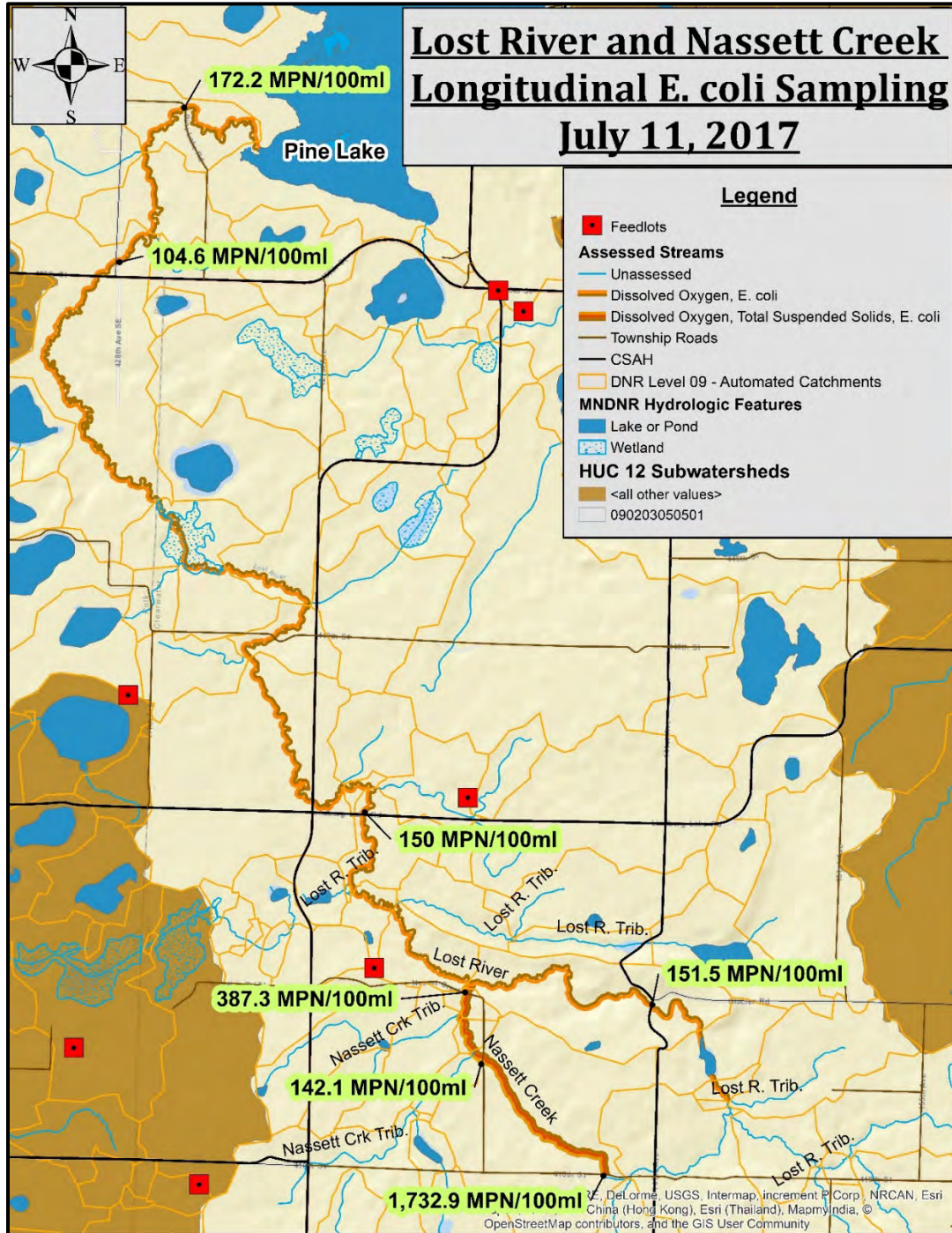
# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

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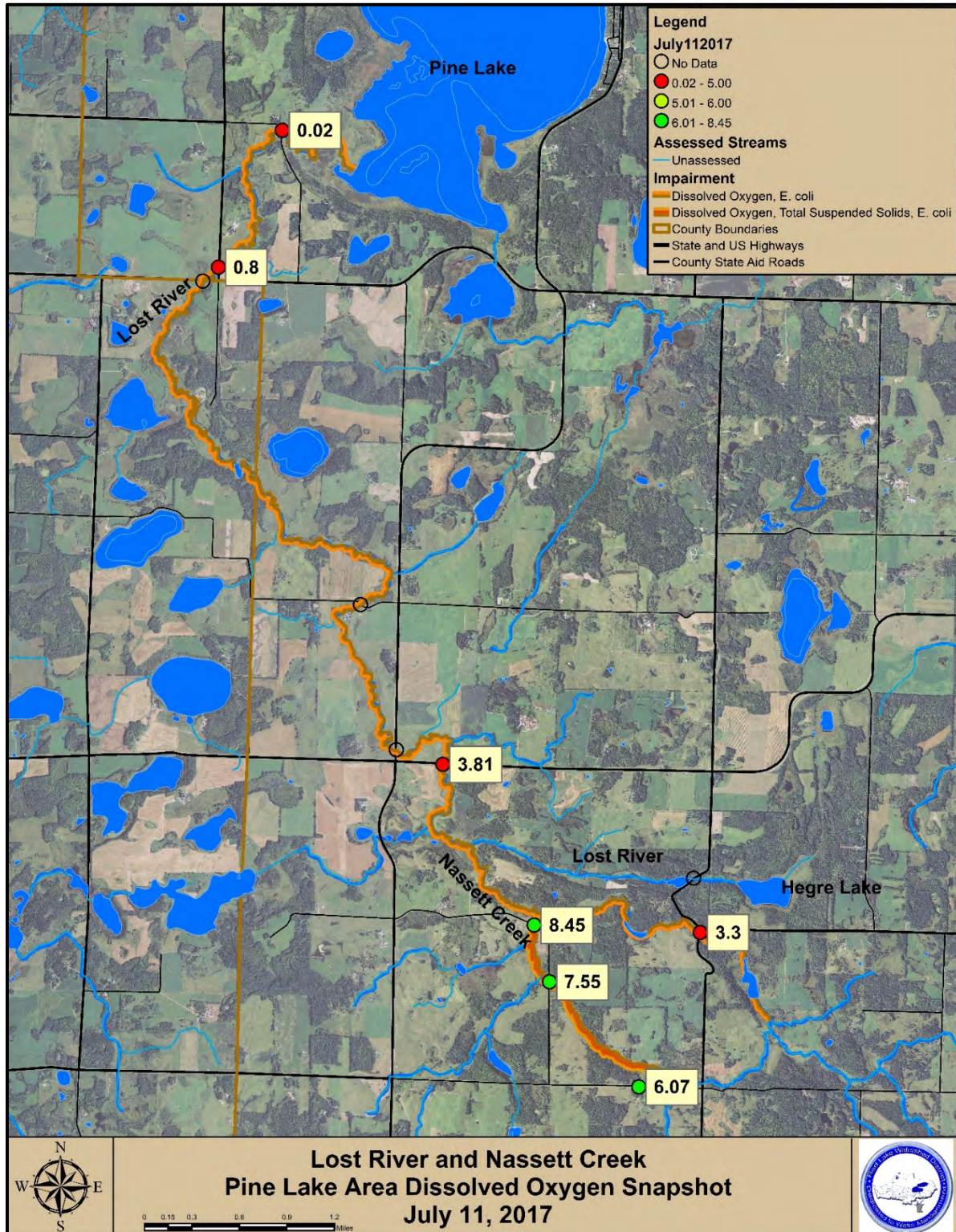
Longitudinal sampling along the Hill River also revealed areas in which there are significant increases in concentrations of *E. coli* bacteria.



Seasonal water quality staff collected *E. coli* longitudinal samples at crossings of Nasset Creek and the Lost River near Pine Lake on July 11, 2017. *E. coli* increased along the reach between the two crossings of Nasset Creek Drive (two furthest downstream crossings) where livestock have access to the stream. There was a sheen on the water in the Lost River.



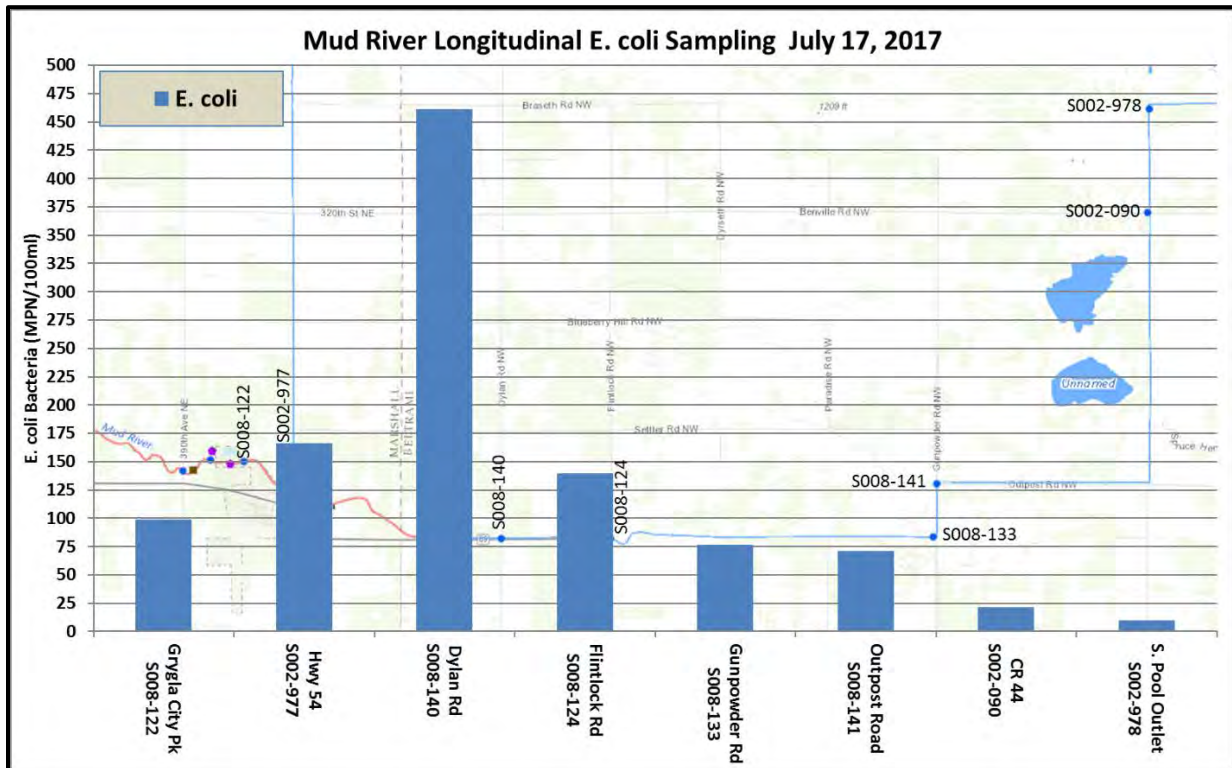
Dissolved oxygen levels were good within Nasset Creek, but low throughout the Lost River upstream of Pine Lake. Dissolved oxygen levels were near zero in the Lost River near the Pine Lake inlet.



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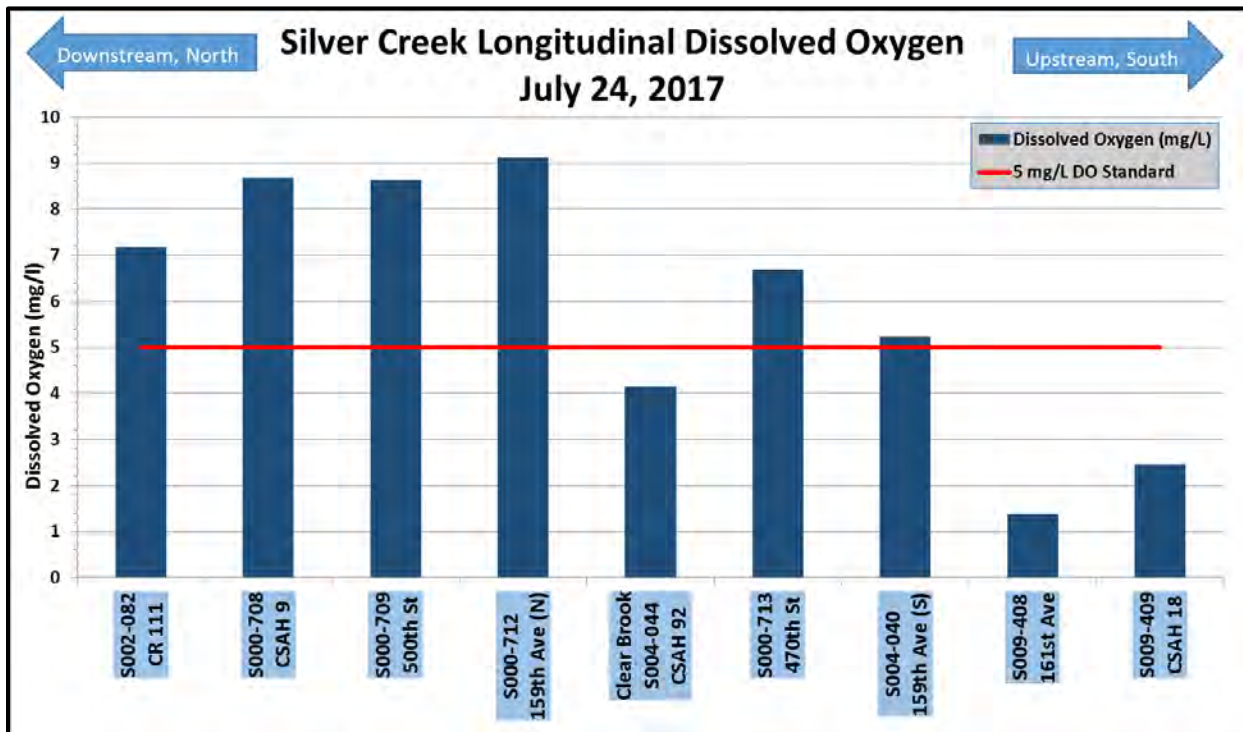
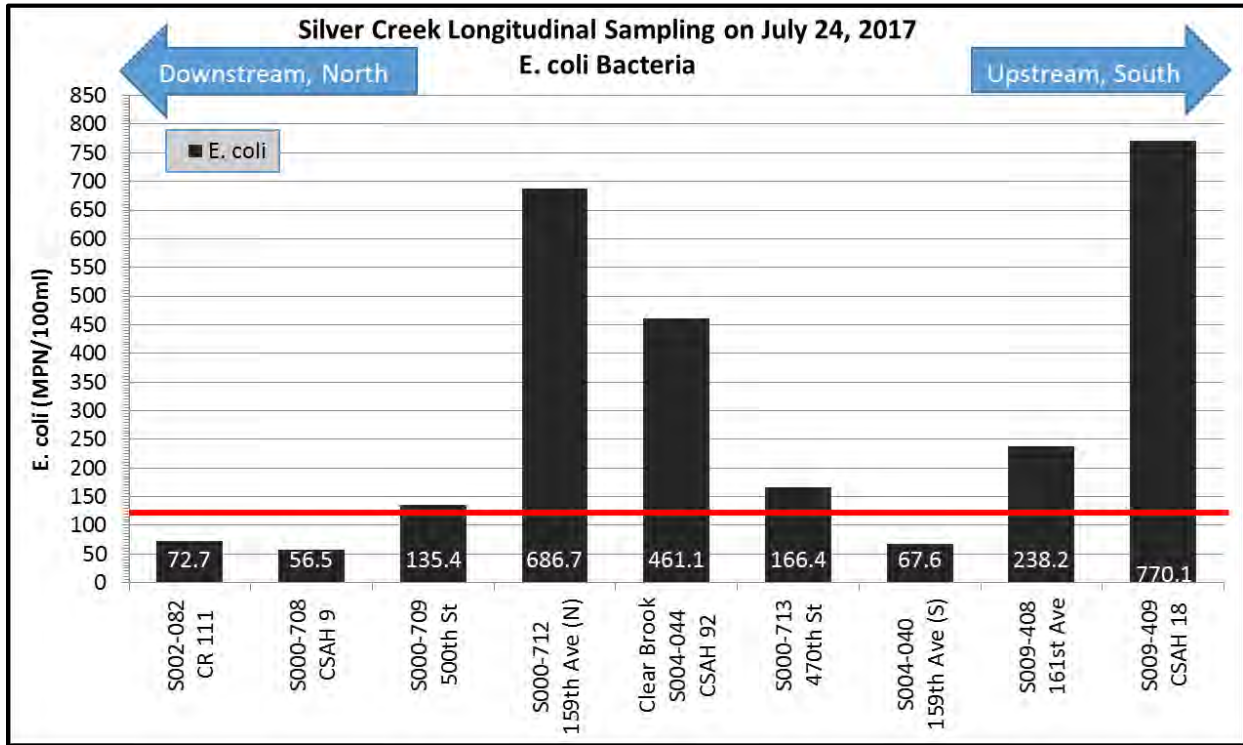
Seasonal water quality staff collected longitudinal *E. coli* samples along the Mud River between the outlet of the Moose River impoundment and Grygla to identify the source of the *E. coli* impairment in Grygla. The *E. coli* concentration leaving the impoundment was very low (9.8 MPN/100ml). Concentrations rose above the 126 MPN/100ml at the Flintlock Road crossing and peaked at the Dylan Road crossing. The concentration at CSAH 54 was 166.4 MPN/100ml. There was a decrease between CSAH 54 and the Grygla City Park.



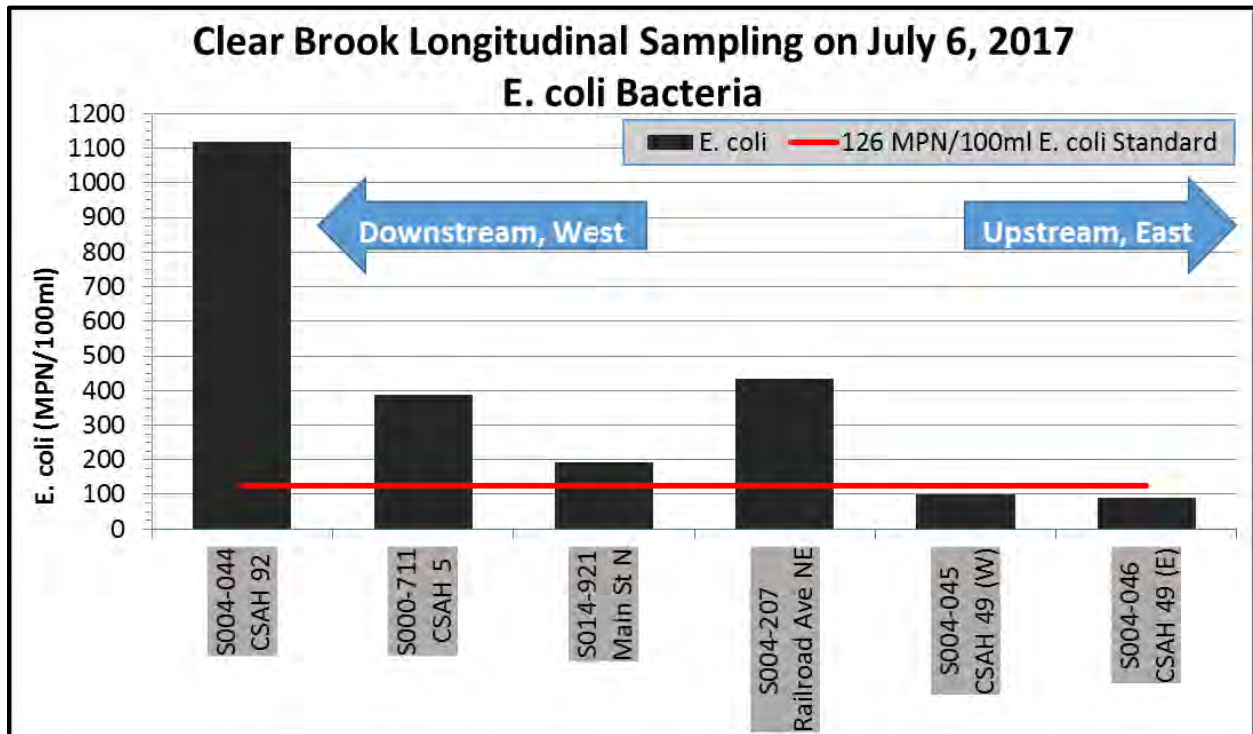
# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

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Seasonal water quality staff collected longitudinal *E. coli* samples along Silver Creek and its tributaries on July 24, 2017. Clear Brook, and the section of land around the confluence of Clear Brook and Silver Creek remains the area where restoration efforts should be focused.



Longitudinal sampling along Clear Brook found that *E. coli* concentrations are high at all the crossing that are within the town of Clearbrook. There was a large increase between CSAH 5 and CSAH 92.

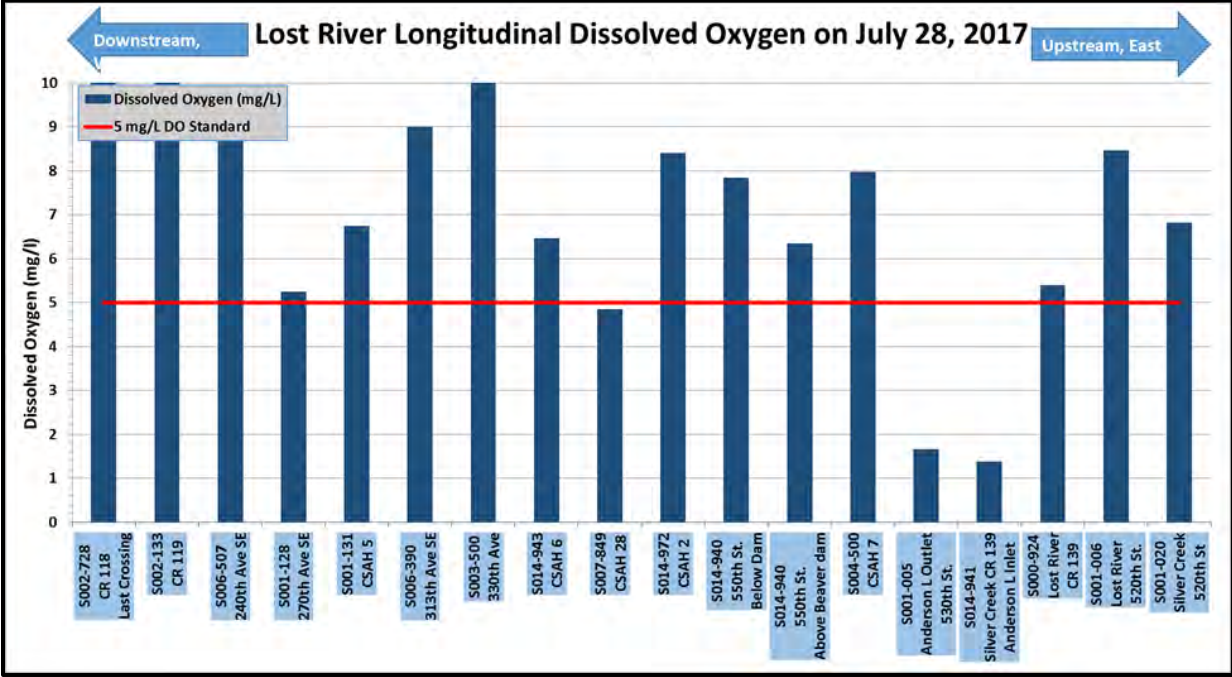


High *E. coli* concentrations have been recorded near the outlet of Maple Lake at the CSAH 10 crossing of Polk County Ditch 14. High concentrations of bacteria in lake water would be a health hazard. So, investigative samples were collected to see if the bacteria were coming from the lake or from the wetland between the lake and CSAH 10. Samples were collected at CSAH 10 and at the outlet structure on 7/25/2017. *E. coli* was a very low 5.2 MPN/100ml at the outlet structure and increased to 124.6 MPN/100mL (very near the 126 MPN/100mL standard) within the short distance between the two crossings. Waterfowl within the wetland through which the channel flows would be the primary suspected source of excess *E. coli* bacteria.



<b>RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT</b>	<b>July - August 2017</b>
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Seasonal water quality staff recorded dissolved oxygen measurements along a long stretch of the Lost River on July 28, 2017 that included the dissolved oxygen-impaired assessment unit number 09020305-645 (Anderson Lake to CSAH 28).



**Using DNA Analysis to Identify Sources of *E. coli* Bacteria**

A microbial source tracking sample was collected from the Mud River in Grygla. The sample was sent to the Source Molecular Laboratory in Miami, Florida to determine the source of fecal bacteria through DNA analysis. Human and ruminant (livestock) fecal DNA markers were found in the sample.

Date	Site Name	S-Code	E. coli (CFU/100ml)	Analysis Requested	Quantification	DNA Analytical Results	Contribution to Fecal Pollution
7/18/2017	Mud R. @ Grygla	S008-122	62	Bird Fecal ID		Not Detected	
7/18/2017	Mud R. @ Grygla	S008-122	62	Ruminant Bacteroidetes ID	Low, Not Quantified	Detected	Potential Contributor
7/18/2017	Mud R. @ Grygla	S008-122	62	Beaver Fecal ID		Not Detected	
7/18/2017	Mud R. @ Grygla	S008-122	62	Goose Bacteroidetes ID		Not Detected	
7/18/2017	Mud R. @ Grygla	S008-122	62	Human Bacteroidetes ID 1	1.76E+02	Detected	Contributes at low levels
7/18/2017	Mud R. @ Grygla	S008-122	62	Human Bacteroidetes ID 2		Not Detected	

A microbial source tracking sample was also collected from Walker Brook near Bagley. Tests did not find evidence of beaver, goose, or human fecal DNA markers. Low levels of bird fecal DNA markers and moderate levels of ruminant (livestock) fecal DNA markers were found.

### Lafave Park and Tindolph Beach Sampling



The beach in LaFave Park in Thief River Falls (Tindolph Beach) was closed due to poor water quality in August of 2017. RLWD staff collected water samples that were analyzed for the presence of algal toxins and for *E. coli* bacteria concentrations. The water appeared green with algae and duckweed. The ground was covered with goose droppings. A representative of the KTRF radio station spoke with RLWD staff while RLWD staff were at the beach collecting samples and asked if the results could be shared. Test results were shared with local media. No algal toxins were found in the samples. *E. coli* concentrations, however, were very high. *E. coli* samples were collected from the west side, east side, and center of the beach area. The samples were collected at an approximate depth of 2 feet (knee-deep). Concentrations ranged from 1,413.6 MPN/100ml to 2,419.6 MPN/100ml and emphatically validated the city's decision to close the beach. The Minnesota Pollution Control Agency's acute standard for *E. coli* bacteria is 1,260 MPN/100ml and the chronic (monthly geometric mean) standard is 126 MPN/100ml.



*E. coli* concentrations from the beach area:

- West edge of the beach area: 2,419.6 MPN/100ml
- Center of the beach area: 1,413.6 MPN/100ml
- East edge of the beach area: 1,986.3 MPN/100ml
- Overall geometric mean: 1,894 MPN/100ml

The situation was featured in most local news outlets in both video and print. Below, are some links to news videos and articles about the closing of the beach.

- <https://www.youtube.com/watch?v=U5qYnTEi5F8>
- <https://www.youtube.com/watch?v=k8t5rbw0vTk>
- <http://www.grandforksherald.com/news/4313653-e-coli-found-waters-near-closed-thief-river-falls-beach>
- <http://www.thiefriverfallsonline.com/thief-river-falls-news/samples-reveal-e-coli-present-at-beach/>
- <http://www.thiefriverfallsonline.com/thief-river-falls-news/tindolph-beach-sample-reveals-serious-health-risk/>



To answer a question about water quality in the open-water portion of the Thief River Falls Reservoir, *E. coli* samples were collected from the 1<sup>st</sup> Street Bridge. The results of those samples were relatively low and did not exceed any water quality standards. *E. coli* poses a threat to aquatic recreation, but not as much of a threat to aquatic life. The fish in the river should be just as safe as they usually are, as long as they are properly handled, cleaned, and prepared. The *E. coli* concentration in the Red Lake River at the 1st Street Bridge in Thief River Falls was roughly 73 MPN/100ml on August 17, 2017. That concentration is lower than the MPCA's 126 MPN/100ml (chronic) standard for *E. coli* bacteria. So, the *E. coli* problem at Tindolph Beach does not seem to be causing a problem downstream within the open-water portion of the reservoir, most likely due to dilution.

### **Red Lake Watershed District Stream Gaging and Flow Monitoring**

HOBO water level loggers continued to collect water level measurements at 24 monitoring sites throughout the Clearwater, Red Lake River, Thief River, and Grand Marais Creek watersheds. Summer water quality staff received training on flow measurement methods. Flows were measured in the Clearwater River at County Road 127 to improve the flow rating curve for that location and improve the accuracy of TMDL calculations.

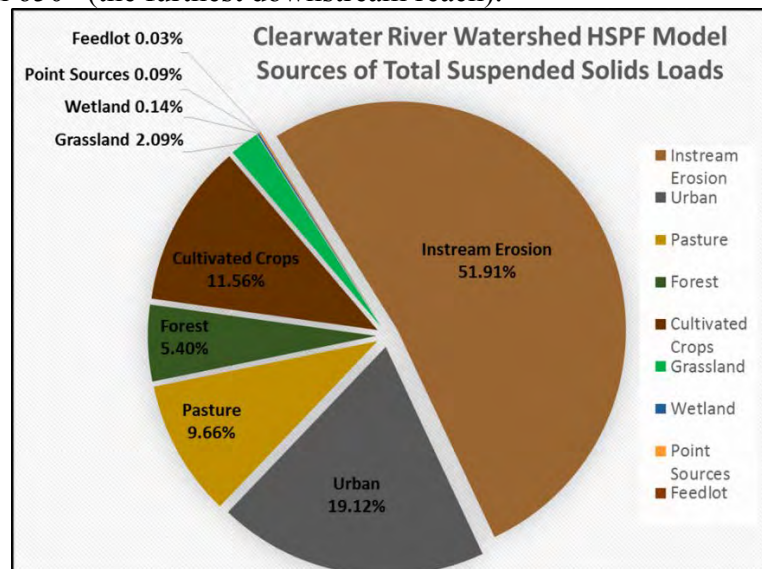
### **Clearwater River Watershed Restoration and Protection Strategy (WRAPS) Project**

- Objective 1 – Existing Data
  - The dissolved oxygen impairments of two reaches of the Clearwater River (channelized and natural portions) between the Ruffy Brook confluence and the Lost River confluence were officially removed from the list of impaired waters by the MPCA. The dissolved oxygen impairment of Walker Brook will also be removed from the Draft 2018 303(d) List of Impaired Waters.
- Objective 8 – Data analysis
  - Longitudinal total suspended solids assessment for the Clearwater River.
- Objective 9 – Civic Engagement
  - RLWD, MPCA, and RMB Labs staff coordinated to plan a fall open house event.
    - RMB Labs staff produced a draft newsletter to inform residents about water quality conditions in the watershed and publicize the open house event. The newsletter was reviewed by RLWD and MPCA staff. RLWD staff created a map of impaired waters and a table that lists impaired waters that were used in the newsletter.
  - “Water Minute” radio announcements were written
    - **Clearwater WRAPS Water Minute Text**
      - The Clearwater River is located in northwestern Minnesota. It begins in a series of lakes and wetlands near Bagley and flows downstream to Red Lake River in Red Lake Falls.
      - Significant tributaries of the Clearwater River include the Lost River, Ruffy Brook, and Lower Badger Creek.
      - Lakes found within the watershed include Clearwater Lake, Pine Lake, Maple Lake, and many smaller lakes.
      - The Clearwater River has an excellent fishery, including walleye, channel catfish, northern pike, bass, and even rainbow trout.
      - The river offers enjoyable scenery, accesses, and even some mild rapids for kayaking and canoeing adventures.
      - Water from the Clearwater River uniquely supports cultivation of wild rice within paddies, north of Clearbrook.
      - The Clearwater River watershed has areas of exceptionally clean water, especially in the headwaters and the Clearwater Lake area. However, some streams in the watershed are being investigated because they have too much sediment, too much *E. coli* bacteria, or too little dissolved oxygen. Plans are currently being written to describe strategies for fixing these problems.

- Learn more by contacting the Red Lake Watershed District or visiting [www.rlwdwatersheds.org](http://www.rlwdwatersheds.org).
- **Watershed Restoration and Protection Projects Water Minute**
  - The Minnesota Pollution Control Agency uses a watershed-based approach to restoring and protecting Minnesota's rivers, lakes, and wetlands. Throughout a 10-year cycle, state and local organizations work within each of the state's 80 major watersheds to evaluate water conditions, identify problems, set priorities, establish goals for improvement, and take actions designed to restore or protect water quality. When each watershed's 10-year cycle is completed, a new cycle of monitoring, assessment and implementation begins.
  - The Red Lake Watershed District is currently drafting the results of the study of the Clearwater River Watershed. This study was designed to determine the condition of this water resource and, then, create plans that will guide efforts to protect and restore water quality throughout the watershed.
  - Local citizens can help become involved with implementation strategies for restoration and protection of the Clearwater River Watershed study. Public meetings are being scheduled for September 25<sup>th</sup> in Mentor and Red Lake Falls. For more information, please contact the Minnesota Pollution Control Agency or the Red Lake Watershed District. Information about the Clearwater River can be found online at [www.rlwdwatersheds.org](http://www.rlwdwatersheds.org).
- **Dissolved Oxygen Water Minute**
  - We all know that humans need to breathe oxygen to survive. Fish and other animals that live in the water also need oxygen to survive. Waters that have high levels of dissolved oxygen are considered healthy. Waters that have low levels of dissolved oxygen are considered unhealthy.
  - Minnesota's waters are tested for oxygen on a periodic basis. When a water body doesn't have enough oxygen, a plan is written to correct that pollution. Low dissolved oxygen can be caused by pollution from runoff. When oxygen levels get too low for fish to breathe, a lake may experience a fish kill.
  - We can ensure healthy oxygen levels and good fish habitat by:
    - Reducing pollution
    - Keeping extra sediment and yard waste out of streams and lakes
    - Protecting stream and ditch banks with vegetative buffers
    - Allowing trees, shrubs, and native plants to grow and provide shade along streambanks, and
    - Restoring stream channels
  - By working together, we all can do our part in protecting and restoring Minnesota's lakes and streams. For more information, contact the Minnesota Pollution Control Agency or the Red Lake Watershed District.
- ***E. coli* Bacteria Water Minute**
  - The waters of Minnesota are an important resource. Unfortunately, they sometimes contain unsafe concentrations of bacteria. These bacteria

originate in the guts of warm-blooded animals such as pets, wildlife, livestock and us. Septic systems and wastewater treatment facilities treat most of the bacteria that originates from humans. High bacteria concentrations are often caused by groups of animals near water, such as.

- Animal feedlots
- Birds under bridges; and
- Flocks of waterfowl;
- The concentrations of bacteria in lakes and streams are used as indicators of the overall health of the water body. Minnesota’s waters are tested for bacteria on a periodic basis. When a water body has too much bacteria, a plan is written to correct that pollution.
- Help us keep excess bacteria out of our waters by:
  - Keeping livestock fenced away from lakes and streams
  - Making sure septic systems are properly functioning
  - Picking up pet waste
  - Not feeding waterfowl
- By working together, we can do our part in protecting and restoring Minnesota’s lakes and streams. For more information, please contact the Minnesota Pollution Control Agency or the Red Lake Watershed District.
- RLWD staff contacted the Maple Lake Improvement District to plan for a WRAPS discussion at a future meeting.
- Maple Lake Improvement District and Clearwater Lake Area Association members were added to the list of contacts for the Clearwater River WRAPS
- A mailing list was created for the 2017 Clearwater River WRAPS newsletter.
- Objective 10 – Reports
  - Clearwater River watershed population records and trends
  - Red Lake County Ditch 23 Stressors
  - Map of trend analysis sites
  - Revised Clearwater River HSPF sediment source graph using simulated data for “Reach 650” (the furthest downstream reach).

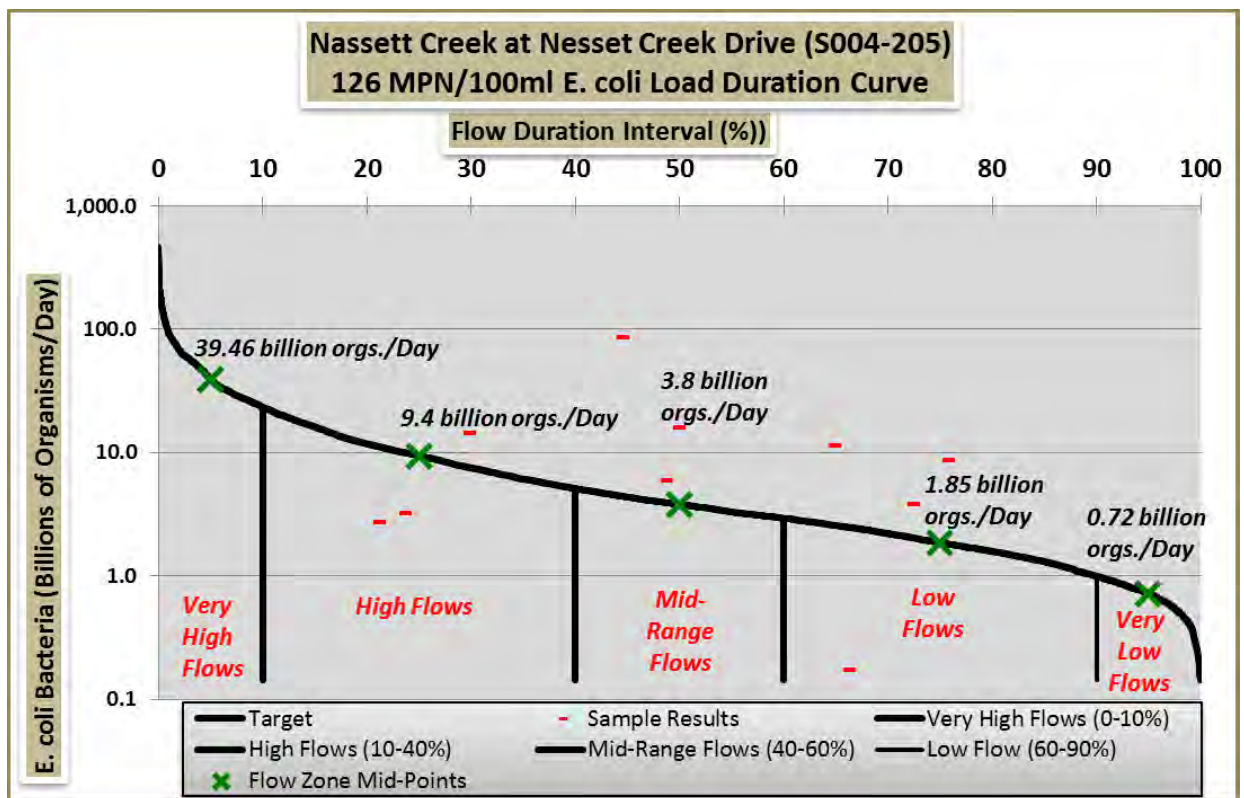


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o The Nasset Creek *E. coli* TMDL was calculated.

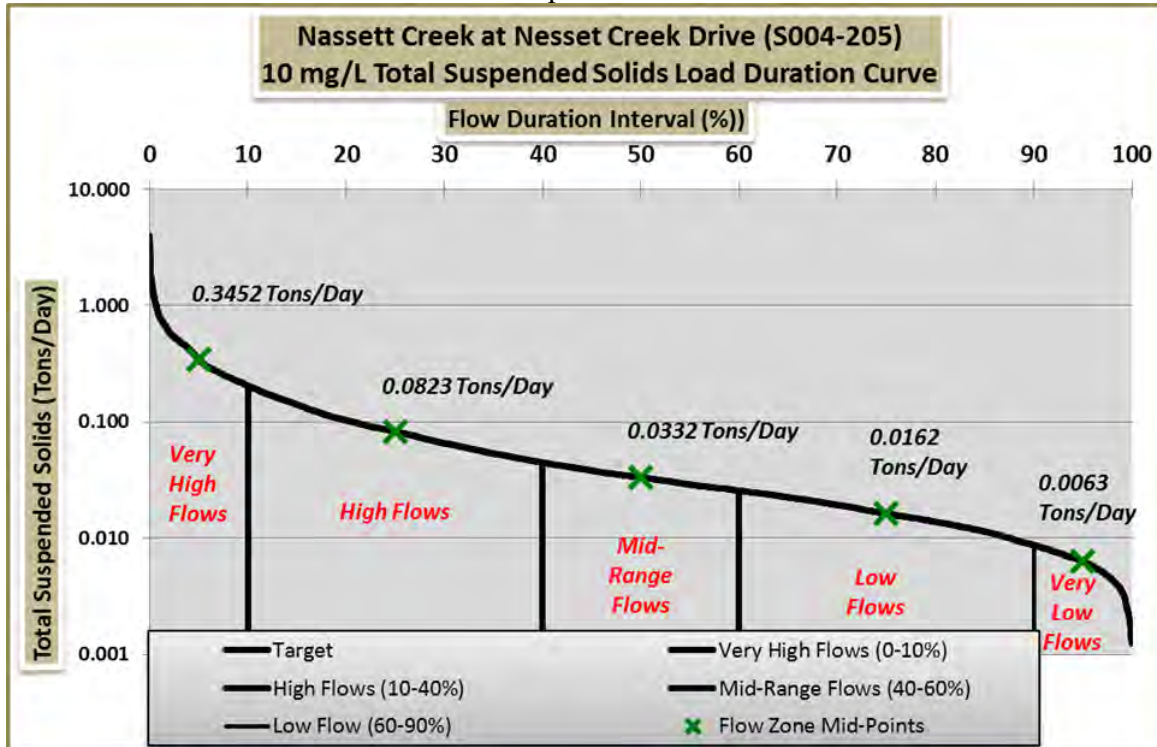
Nasset Creek (09020305-545) Annual <i>E. coli</i> Load Reductions	Very High Flows	High Flows	Mid-Range Flows	Low Flows	No Flow	Total
Current Daily Load (10 <sup>9</sup> orgs/day)	131.39	79.23	148.44	34.41	No Data	--
Load Allocation (10 <sup>9</sup> orgs/day)	35.51	8.46	3.42	1.67	0.65	--
Load reduction (10 <sup>9</sup> orgs/day)	95.88	70.77	145.02	32.74	-	--
% of Flows Represented	10%	30%	20%	30.0%	10.0%	100%
# of Days Represented	36.5	109.5	73.0	109.5	36.5	365.00
Annual Load Reduction (10 <sup>9</sup> orgs/year)	3,499.47	7,749.05	10,586.68	3,585.52	-	<b>25,420.71</b>
Total Current Load	4,795.58	8,675.73	10,836.07	3,768.23	0	28,075.61
Percent Reduction	<b>73.0%</b>	<b>89.3%</b>	<b>97.7%</b>	<b>95.2%</b>	0.0%	<b>90.5%</b>



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- The Nasset Creek total suspended solids TMDL was calculated



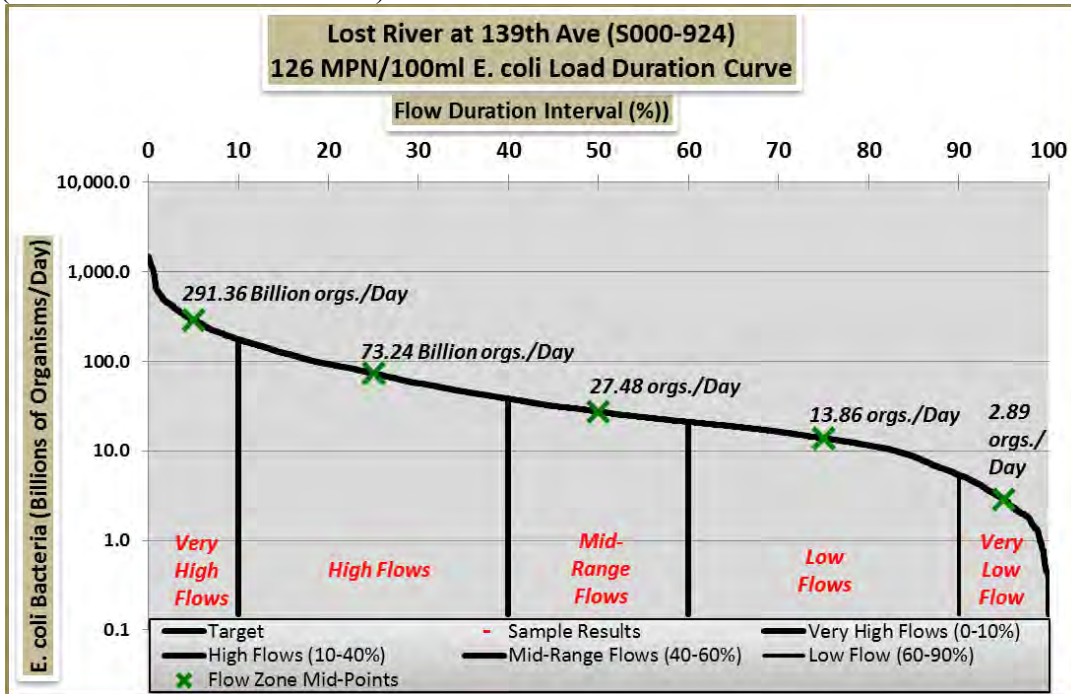
EQulS Site ID: S004-205 HSPF Modeled Flow Data Drainage Area (square miles): 6.15 %MS4 Urban: 0.00 Total WWTF Design Flow (mgd): 0	Loading Capacity and Load Allocations for Total Suspended Solids in Nasset Creek at Nasset Creek Drive AUDID: 09020305-545				
	Duration Curve Zone				
TMDL Component	Very High	High	Mid	Low	Very Low
<b>TOTAL DAILY LOADING CAPACITY at 10 mg/L</b>	0.345	0.082	0.033	0.016	0.006
<b>Wasteload Allocation</b>	Values expressed as Tons per Day of Sediment				
No WWTF in this watershed	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>Daily Load Allocation</b>	0.311	0.074	0.030	0.015	0.006
<b>Daily Margin of Safety</b>	0.035	0.008	0.003	0.002	0.001
	Values expressed as Tons per Day of Sediment				
<b>TOTAL MONTHLY LOADING CAPACITY</b>	0.345	0.082	0.033	0.016	0.006
<b>Wasteload Allocation</b>	Values expressed as Tons per Day of Sediment				
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 - No Towns or Cities in this watershed</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%
	Values expressed as Tons per Day of Sediment				
<b>MEDIAN FLOW</b>	12.799	3.050	1.231	0.601	0.234
<b>FLOW DURATION INTERVAL OF MEDIAN FLOW</b>	5%	25%	50%	75%	95%



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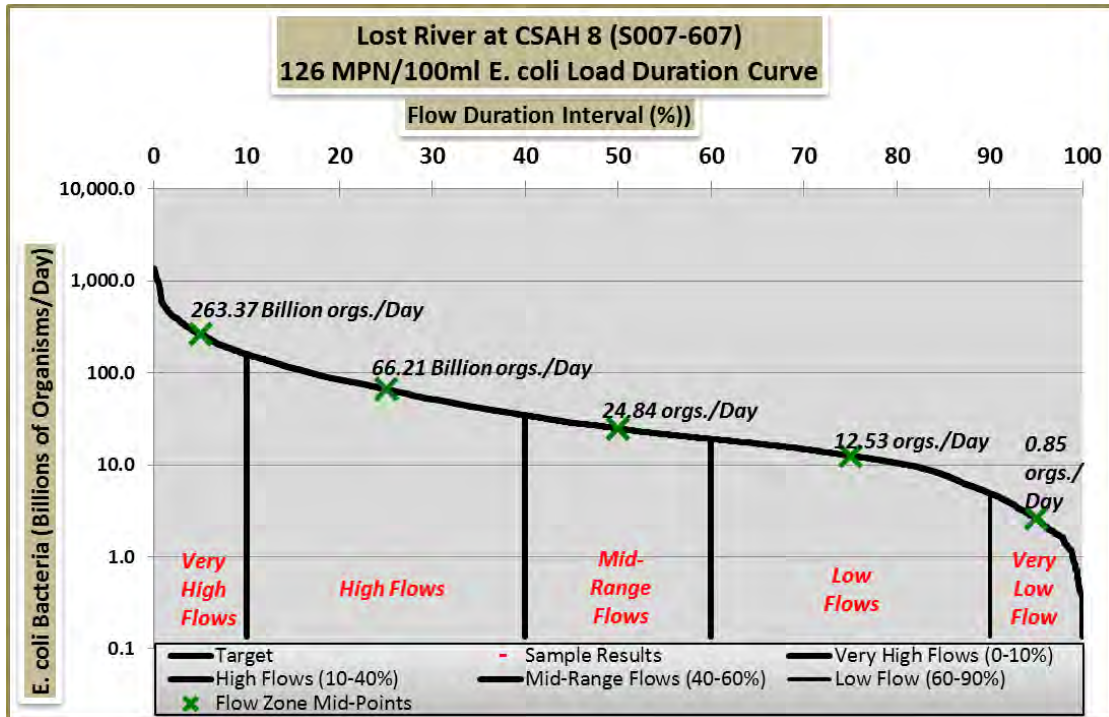
- *E. coli* TMDLs were calculated for two sites along the 09020305-512 reach of the Lost River (Pine Lake to Anderson Lake).



	AUDID 09020305-512 Lost River at 139th Ave (S000-924) Loading Capacity and Load Allocations for <i>E. coli</i>				
	Duration Curve Zone				
	Very High	High	Mid-Range	Low	Very Low
Drainage Area (square miles):	54.56				
Monitoring Site Flow record used to develop flow zones and loading capacities: S000-924 (EQUS)					
<i>E. coli</i> Standard:	126 MPN/100ml				
%MS4 Urban:	0.00				
Total WWTF Design Flow (mgd):	0.00				
TMDL Component	Values expressed as Billions of Organisms per Day				
<b>TOTAL DAILY LOADING CAPACITY</b>	291.36	73.24	27.48	13.86	2.89
<b>Wasteload Allocation</b>					
Gonvick WWTF MN0020541-SD-1	18.66	18.66	18.66	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>	243.56	47.26	6.08	12.48	2.60
<b>Daily Margin of Safety</b>	29.14	7.32	2.75	1.39	0.29
	Values expressed as Billions of Organisms per Day				
<b>TOTAL MONTHLY LOADING CAPACITY</b>	291.36	73.24	27.48	13.86	2.89
<b>Wasteload Allocation</b>					
Permitted Wastewater Treatment Facilities	6%	25%	68%	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>	84%	65%	22%	90%	90%
<b>Margin of Safety</b>	10%	10%	10%	10%	10%
	Values expressed as Billions of Organisms per Day				
<b>MEDIAN FLOW</b>	94.51	23.76	8.92	4.50	0.94
<b>MEDIAN OF FLOW DURATION ZONE</b>	5%	25%	50%	75.0%	95.0%

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2017

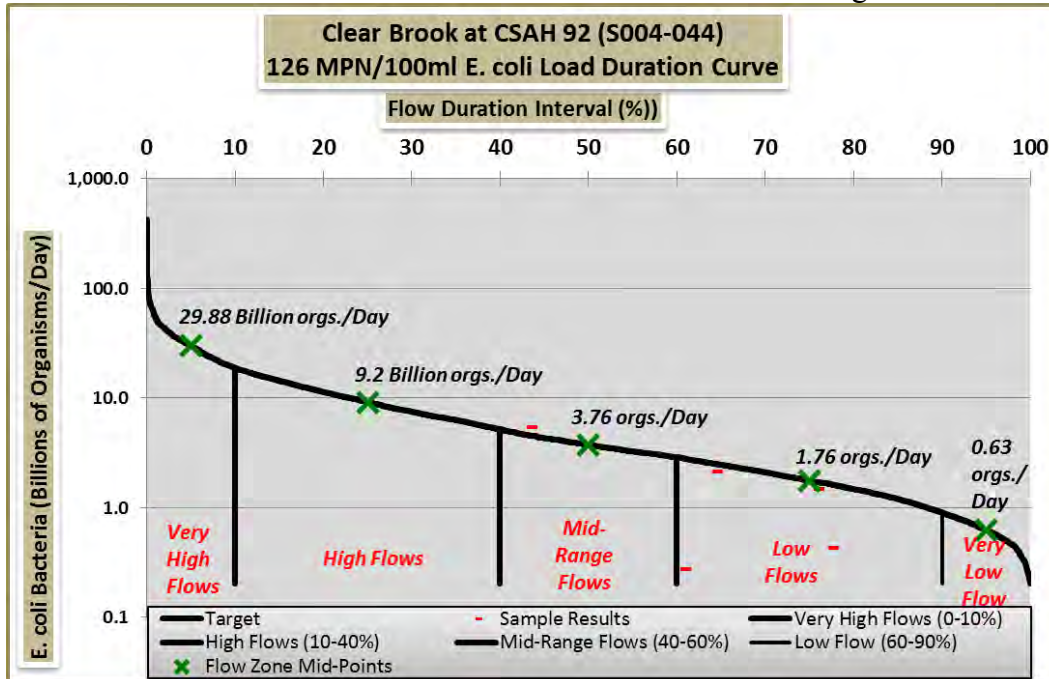


Drainage Area (square miles): 54.56 Monitoring Site Flow record used to develop flow zones and loading capacities: S000-924 (EQuIS) E. coli Standard: 126 MPN/100ml %MS4 Urban: 0.00 Total WWTF Design Flow (mgd): 0.00	<b>AUID 09020305-512</b> <b>Lost River at 139th Ave (S000-924)</b> <b>Loading Capacity and Load Allocations for E. coli</b>						
	<b>Duration Curve Zone</b>						
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 15%;">Very High</th> <th style="width: 15%;">High</th> <th style="width: 15%;">Mid-Range</th> <th style="width: 15%;">Low</th> <th style="width: 15%;">Very Low</th> </tr> </thead> </table>		Very High	High	Mid-Range	Low	Very Low
	Very High	High	Mid-Range	Low	Very Low		
TMDL Component	Values expressed as Billions of Organisms per Day						
<b>TOTAL DAILY LOADING CAPACITY</b>	291.36    73.24    27.48    13.86    2.89						
<b>Wasteload Allocation</b>							
Gonvick WWTF MN0020541-SD-1	18.66    18.66    18.66    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>	243.56    47.26    6.08    12.48    2.60						
<b>Daily Margin of Safety</b>	29.14    7.32    2.75    1.39    0.29						
	Values expressed as Billions of Organisms per Day						
<b>TOTAL MONTHLY LOADING CAPACITY</b>	291.36    73.24    27.48    13.86    2.89						
<b>Wasteload Allocation</b>							
Permitted Wastewater Treatment Facilities	6%    25%    68%    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>	84%    65%    22%    90%    90%						
<b>Margin of Safety</b>	10%    10%    10%    10%    10%						
	Values expressed as Billions of Organisms per Day						
MEDIAN FLOW	94.51    23.76    8.92    4.50    0.94						
MEDIAN OF FLOW DURATION ZONE	5%    25%    50%    75.0%    95.0%						

# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

**July - August  
2017**

- An *E. coli* TMDL was calculated for the CSAH 92 crossing of Clear Brook.

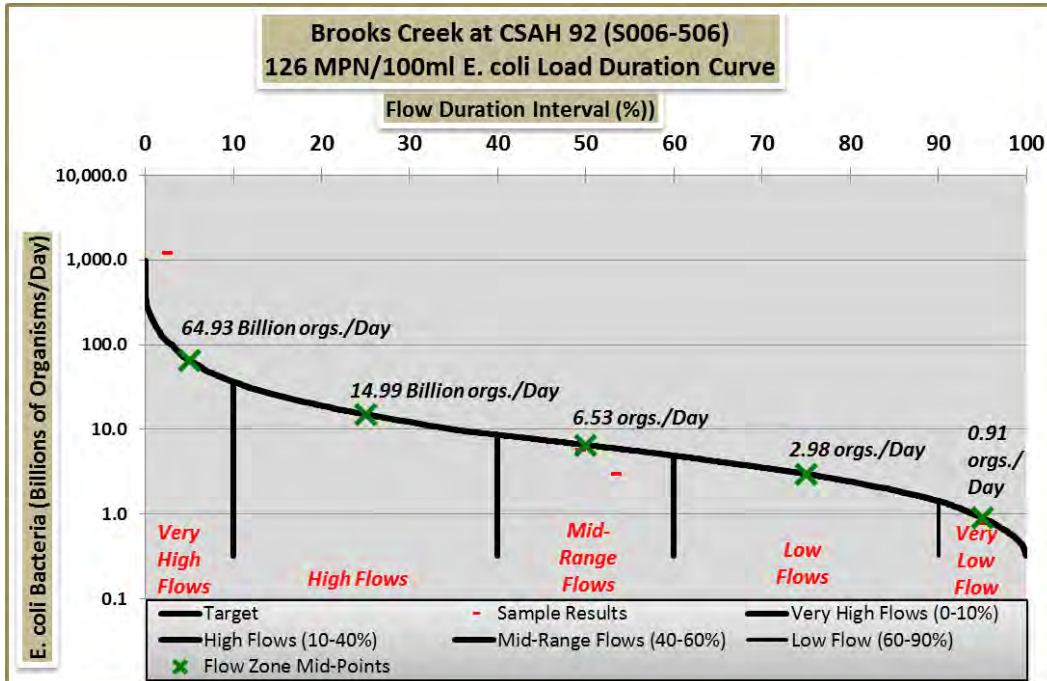


	AUID 09020305-526 Clear Brook at CSAH 92 (S004-044) Loading Capacity and Load Allocations for <i>E. coli</i>				
	Duration Curve Zone				
	Very High	High	Mid-Range	Low	No Flow
Drainage Area (square miles):	Values expressed as Billions of Organisms per Day				
Monitoring Site Flow record used to develop flow zones and loading capacities: S004-044 (EQuls)	29.88	9.20	3.76	1.76	0.63
<i>E. coli</i> Standard:					
%MS4 Urban:					
Total WWTF Design Flow (mgd):					
<b>TMDL Component</b>					
<b>TOTAL DAILY LOADING CAPACITY</b>	29.88	9.20	3.76	1.76	0.63
<b>Wasteload Allocation</b>					
Permitted Wastewater Treatment Facilities (none)	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>	26.89	8.28	3.38	1.58	0.57
<b>Daily Margin of Safety</b>	2.99	0.92	0.38	0.18	0.06
	Values expressed as Billions of Organisms per Day				
<b>TOTAL MONTHLY LOADING CAPACITY</b>	29.88	9.20	3.76	1.76	0.63
<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%
	Values expressed as Billions of Organisms per Day				
<b>MEDIAN FLOW</b>	9.69	2.98	1.22	0.57	0.20
<b>MEDIAN OF FLOW DURATION ZONE</b>	5%	25%	50%	75.0%	95.0%

# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

July - August  
2017

- An *E. coli* TMDL was calculated for Brooks Creek.

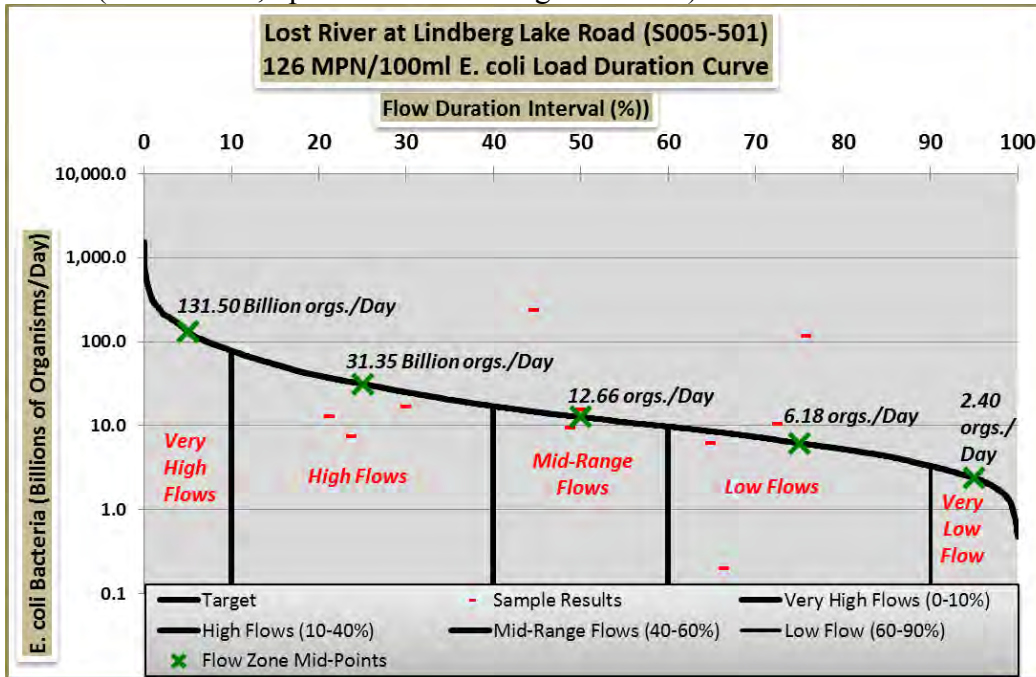


Drainage Area (square miles):	23.49	<b>AUID 09020305-578</b>				
Monitoring Site Flow record used to develop flow zones and loading capacities: S004-044 (EQuls)		<b>Brooks Creek at CSAH 92 (S004-044)</b>				
<i>E. coli</i> Standard:	126 MPN/100ml	<b>Loading Capacity and Load Allocations for <i>E. coli</i></b>				
%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>		64.93	14.99	6.53	2.98	0.91
<b>Wasteload Allocation</b>						
Permitted Wastewater Treatment Facilities (none)		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>		58.44	13.49	5.88	2.68	0.82
<b>Daily Margin of Safety</b>		6.49	1.50	0.65	0.30	0.09
		Values expressed as Billions of Organisms per Day				
<b>TOTAL MONTHLY LOADING CAPACITY</b>		64.93	14.99	6.53	2.98	0.91
<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%
		Values expressed as Billions of Organisms per Day				
<b>MEDIAN FLOW</b>		21.06	4.86	2.12	0.97	0.29
<b>MEDIAN OF FLOW DURATION ZONE</b>		5%	25%	50%	75.0%	95.0%

# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

July - August  
2017

- An *E. coli* TMDL was calculated for the 09020305-530 reach of the Lost River (Headwaters, upstream of Lindberg lake Road)

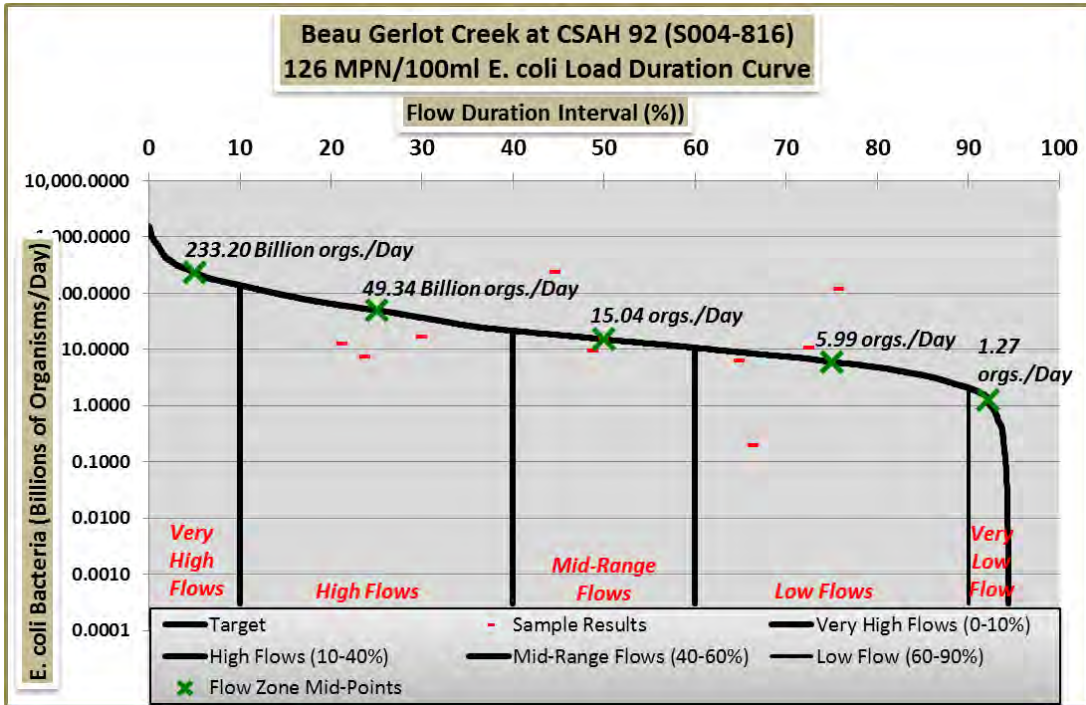


	AUID 09020305-530 Lost River at Lindberg Lake Road (S005-501) Loading Capacity and Load Allocations for <i>E. coli</i>				
	Duration Curve Zone				
	Very High	High	Mid-Range	Low	Very Low
Drainage Area (square miles):	Values expressed as Billions of Organisms per Day				
Monitoring Site Flow record used to develop flow zones and loading capacities: S005-501 (EQuIS)	131.50	31.35	12.66	6.18	2.40
<i>E. coli</i> Standard:					
%MS4 Urban:					
Total WWTF Design Flow (mgd):					
TMDL Component					
<b>TOTAL DAILY LOADING CAPACITY</b>	131.50	31.35	12.66	6.18	2.40
<b>Wasteload Allocation</b>					
Permitted Wastewater Treatment Facilities (none)	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>	118.35	28.22	11.39	5.56	2.16
<b>Daily Margin of Safety</b>	13.15	3.14	1.27	0.62	0.24
	Values expressed as Billions of Organisms per Day				
<b>TOTAL MONTHLY LOADING CAPACITY</b>	131.50	31.35	12.66	6.18	2.40
<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%
	Values expressed as Billions of Organisms per Day				
MEDIAN FLOW (93.74% of HSPF Reach 441 Discharge)	42.66	10.17	4.11	2.01	0.78
MEDIAN OF FLOW DURATION ZONE	5%	25%	50%	75.0%	95.0%

# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

**July - August  
2017**

- o An *E. coli* TMDL was calculated for Beau Gerlot Creek

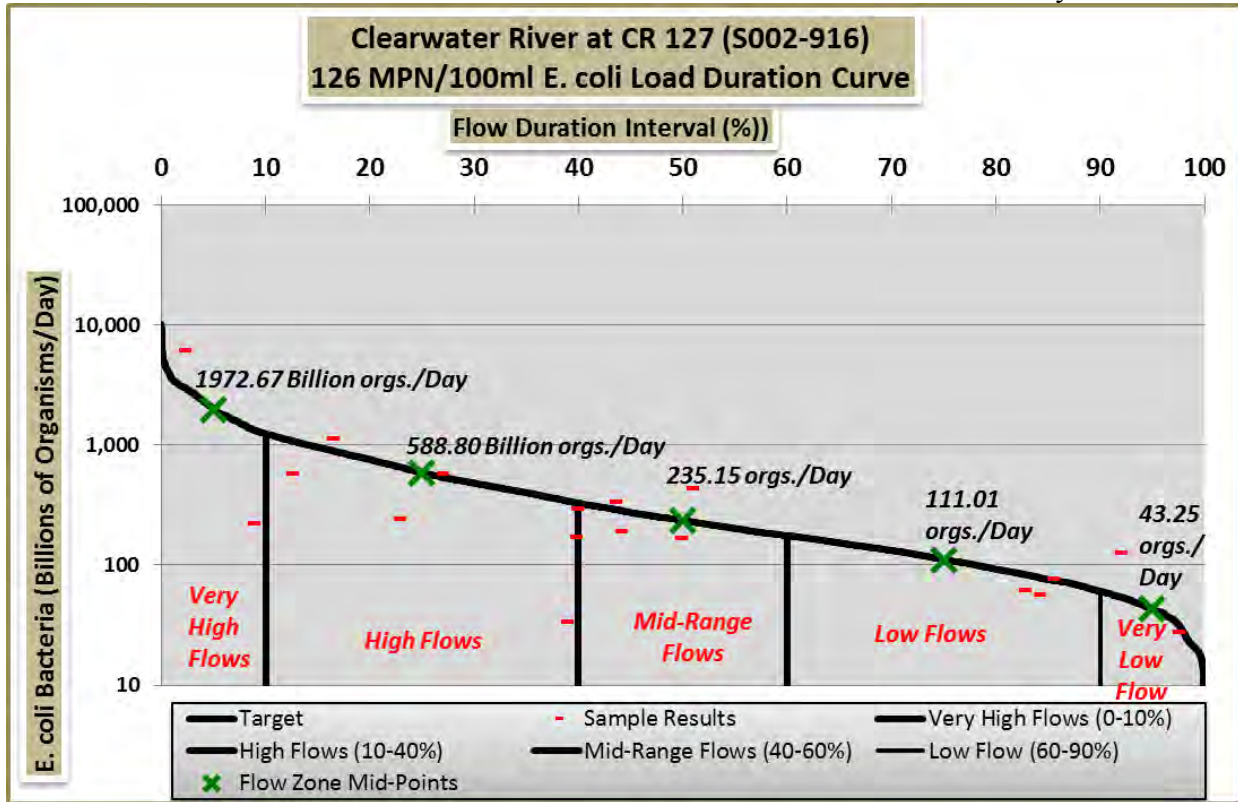


Drainage Area (square miles): 23.76 Monitoring Site Flow record used to develop flow zones and loading capacities: S004-816 (EQUIS) <i>E. coli</i> Standard: 126 MPN/100ml %MS4 Urban: 0.00 Total WWTF Design Flow (mgd): 0.00		AUID 09020305-651 Beau Gerlot Creek at CSAH 92 (S004-816) Loading Capacity and Load Allocations for <i>E. coli</i>				
		Duration Curve Zone				
		Very High	High	Mid-Range	Low	Very Low
TMDL Component		Values expressed as Billions of Organisms per Day				
<b>TOTAL DAILY LOADING CAPACITY</b>		233.20	49.34	15.04	5.99	1.27
<b>Wasteload Allocation</b>						
Permitted Wastewater Treatment Facilities (none)		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>		209.88	44.41	13.54	5.39	1.14
<b>Daily Margin of Safety</b>		23.32	4.93	1.50	0.60	0.13
		Values expressed as Billions of Organisms per Day				
<b>TOTAL MONTHLY LOADING CAPACITY</b>		233.20	49.34	15.04	5.99	1.27
<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%
		Values expressed as Billions of Organisms per Day				
MEDIAN FLOW (91.15% of HSPF Reach 601 Discharge)		75.65	16.01	4.88	1.94	0.41
MEDIAN OF FLOW DURATION ZONE		5%	25%	50%	75.0%	95.0%

# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

July - August  
2017

- An *E. coli* TMDL was calculated for the Clearwater River at County Road 127.



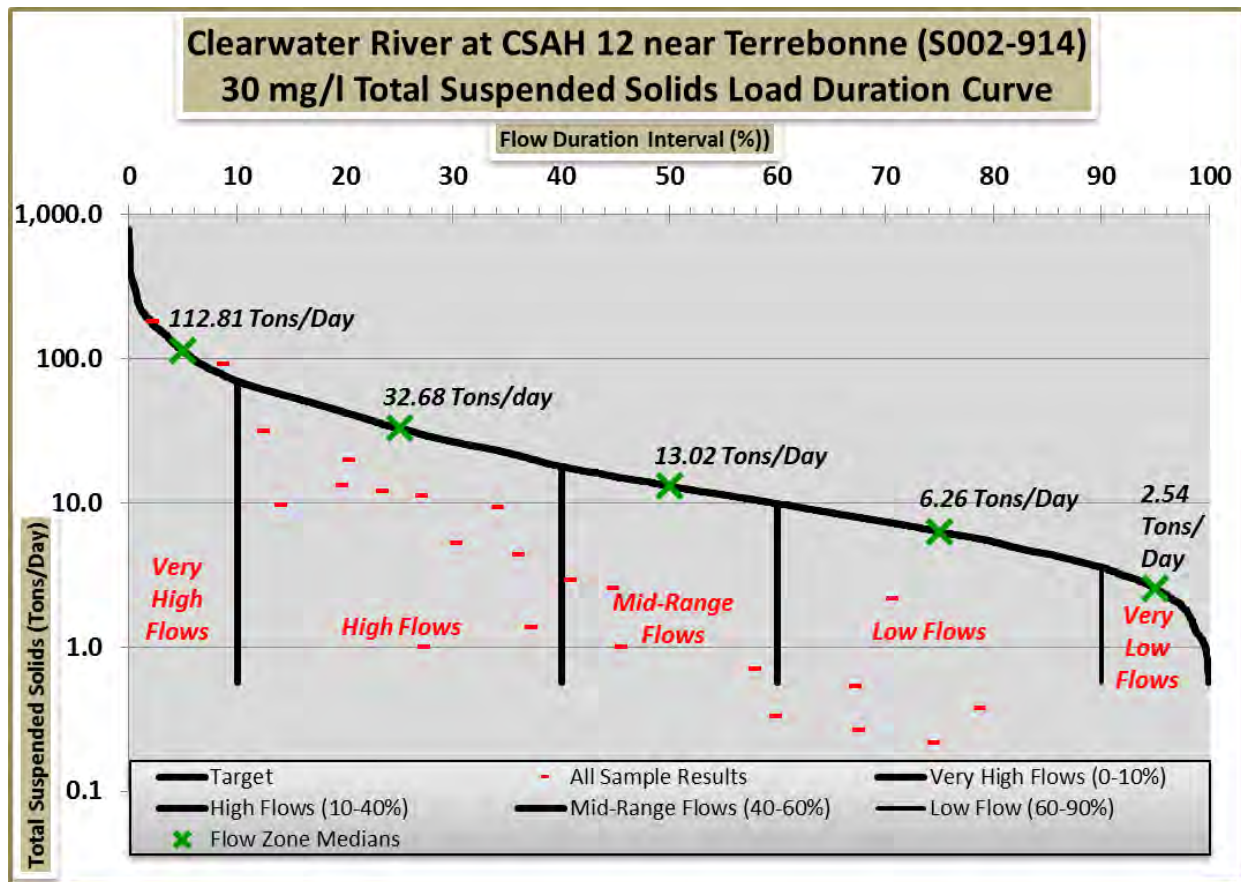
Clearwater River (09020305-647) Annual <i>E. coli</i> Load Reductions at S002-916	Very High Flows	High Flows	Mid-Range Flows	Low Flows	No Flow	Total
Current Daily Load ( $10^9$ orgs/day)	3,217.70	433.03	283.60	50.52	-	--
Load Allocation ( $10^9$ orgs/day)	1,775.40	529.92	211.64	99.91	38.93	--
Load reduction ( $10^9$ orgs/day)	1,442.30	(96.89)	71.96	(49.39)	(38.93)	--
% of Flows Represented	10%	30%	20%	30.0%	10.0%	100%
# of Days Represented	36.5	109.5	73.0	109.5	36.5	365.00
Annual Load Reduction ( $10^9$ orgs/year)	52,644.05	-	5,253.13	-	-	<b>57,897.19</b>
Total Current Load	117,446.23	47,416.95	20,702.60	5,531.94	0	191,097.72
Percent Reduction	<b>44.8%</b>	<b>0.0%</b>	<b>25.4%</b>	<b>0.0%</b>	0.0%	<b>30.3%</b>

# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

July - August  
2017

- A total suspended solids TMDL was calculated for the Clearwater River at the CSAH 12 Bridge near Terrebonne.

Clearwater River at CSAH 12 (AUID 09020305-511, Site S002-914)	Very High Flows	High Flow	Mid-Range Flows	Low Flows	Very Low (No) Flow	Annual Total
Total Suspended Solids Load Reductions						
Current Daily Load (tons/day)	136.335744	10.7761509	1.5143719	0.71931189	0	
Load Allocation (tons/day)	95.7822932	27.6802375	10.9717714	5.2285638	2.06555586	--
Load reduction (tons/day)	40.5534508	-16.904087	-9.4573995	-4.5092519	-2.0655559	--
% of Flows Represented	10%	30%	20%	30%	10%	100%
# of Days Represented	36.5	109.5	73.0	109.5	36.5	365
Annual Load Reduction (tons/year)	1480.2	0.0	0.0	0.0	0.0	1,480.20
Total Current Load	4976.25465	1179.98852	110.549149	78.7646517	0	6345.55697
Percent Reduction	29.7%	0.0%	0.0%	0.0%	0.0%	23.3%



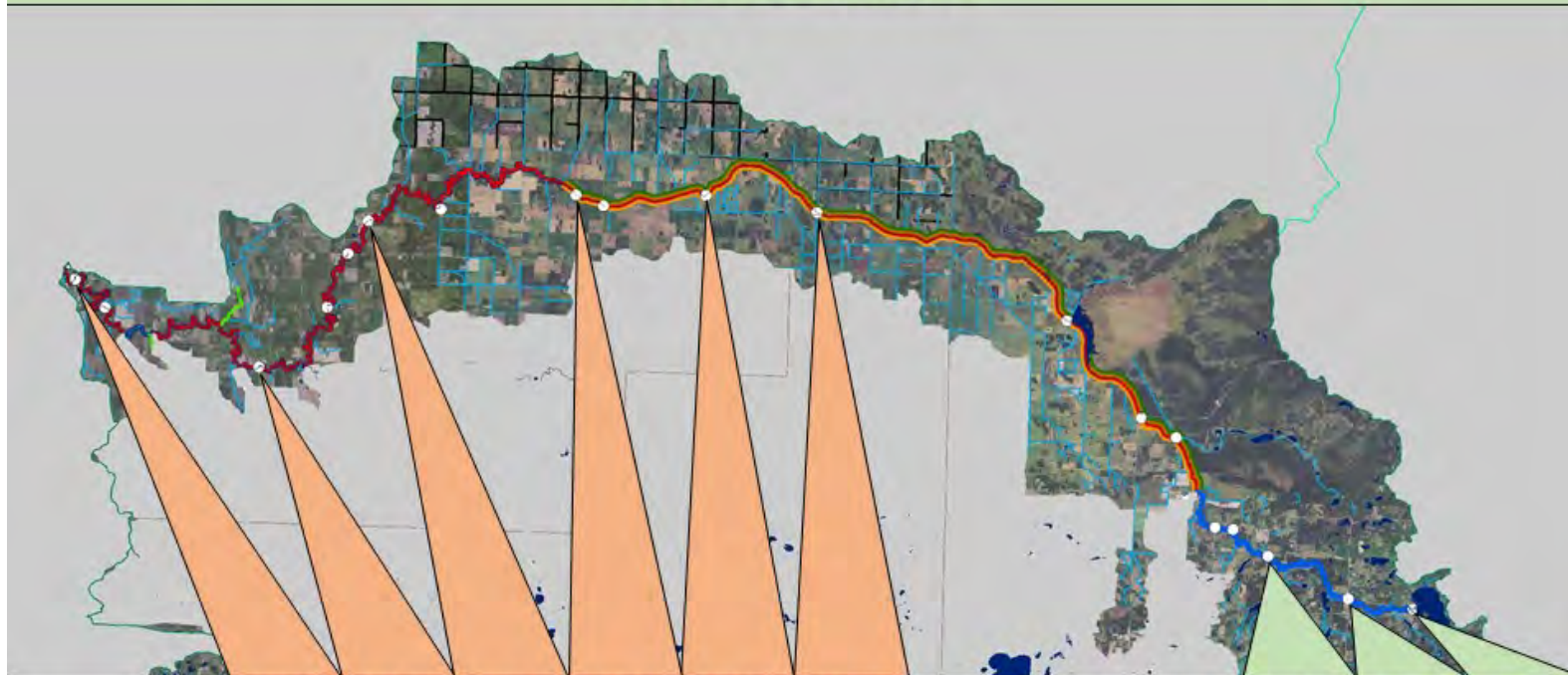
- An *E. coli* load allocation methodology section was written.
- An *E. coli* wasteload section was written.
- A microbial source tracking section was written.
- A map was created to show longitudinal site-specific assessment results for the Clearwater River between Clearwater Lake and the Red Lake River.
- The narrative portion of the total suspended solids TMDL Summary section in the TMDL was written.



- A section for the permitted sources of lake pollutants was written.
- Cameron Lake characterization, sources, and solutions were documented.
- Verified Long Lake (04-0295-00, near Pinewood) sampling data with Beltrami County staff. There are no obvious sources of excess pollutants near the lake. It might be difficult to identify the cause of the impairment.
- A Hill River stressor identification section was written.
- A list of Watershed-wide restoration and protection strategies was started.
- A map of Clearwater River HUC10 subwatersheds was created.
- The biological stressor summary section for the Clearwater River WRAPS was written.
- A Lost River stressor section was written.
- Clearwater River watershed index of biotic integrity maps were created.
- Causes of low dissolved oxygen in the Poplar River Diversion were documented.
- Permitted sources of total suspended solids were described in a section of the TMDL.
- A section for the non-permitted (nonpoint) sources of total suspended solids was started.
  - Wind erosion
  - Stormwater
  - Nasset Creek TSS sources (cattle in the stream)
- Photos of completed projects were found for inclusion in the reasonable assurances section of the report.
- A section for the sources of *E. coli* bacteria was started and sources for the following categories/areas were described:
  - Permitted *E. coli* sources
  - Nasset Creek *E. coli* sources
  - Lower Badger Creek *E. coli* sources
  - Poplar River (09020305-504) *E. coli* sources
  - Lost River (09020305-512) *E. coli* sources
  - Ruffy Brook *E. coli* sources
  - Clear Brook *E. coli* sources
  - Silver Creek *E. coli* sources and 2017 longitudinal sampling results
  - Lost River (09020305-529) *E. coli* sources and 2017 longitudinal sampling results
  - Lost River (09020305-530) *E. coli* sources (combined with 09020305-529)
  - Hill River (09020305-539) *E. coli* sources
  - Judicial Ditch 73 *E. coli* sources
  - Terrebonne Creek *E. coli* sources
- Completed maps:

# Clearwater River

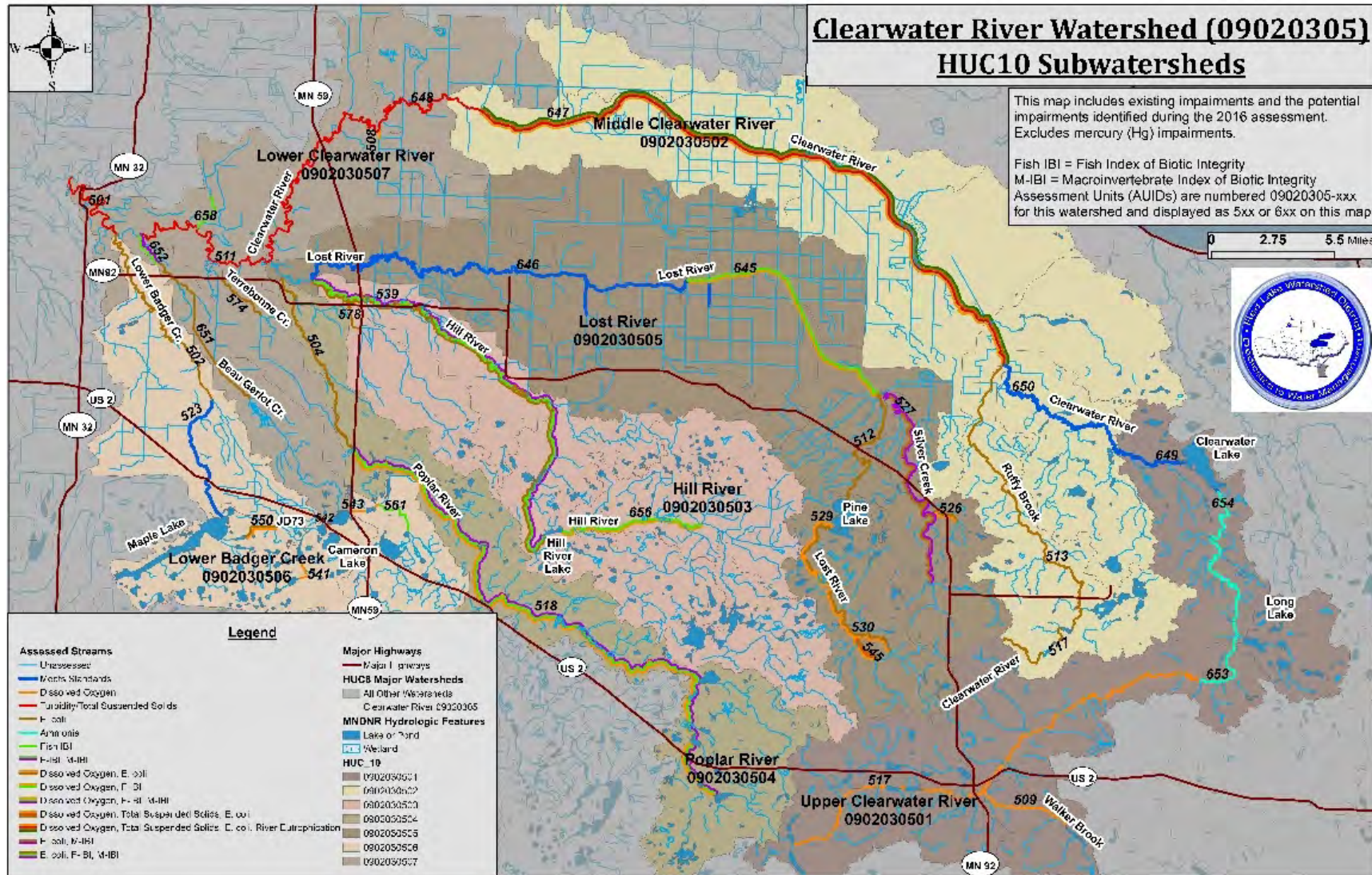
## Site-By-Site Assessment Results for Total Suspended Solids 2007-2016 Data



Site ID:	S002-118	S002-914	S002-124	S002-916	S003-174	S002-121		Site ID:	S002-752	S001-461	S002-119
AUID (09020305-XXX)	501	511	648	647	647	647		AUID (09020305-XXX)	650	649	649
Street/Road:	Bottineau Ave	CSAH 12	Minnesota St. N	280th Ave SE	CSAH 10	370th Ave SE		Street/Road:	CSAH 11	CSAH 14 (249th Ave)	Clearwater Lake Rd.
Percentage of TSS Samples > 30 mg/L	27.0%	11.4%	25.0%	13.6%	16.1%	10.2%		Percentage of TSS Samples > 15 mg/L	0.0%	0.0%	0.0%
Percentage of Secchi Tube Transparency <25 cm	20.4%	0.0%	14.1%	0.0%	No Data	6.6%		Percentage of Secchi Tube Transparency <40 cm	0.0%	0.0%	0.0%
Number of April-Sept. Days with TSS Samples:	226	35	112	22	31	49		Number of April-Sept. Days with TSS Samples:	12	7	20

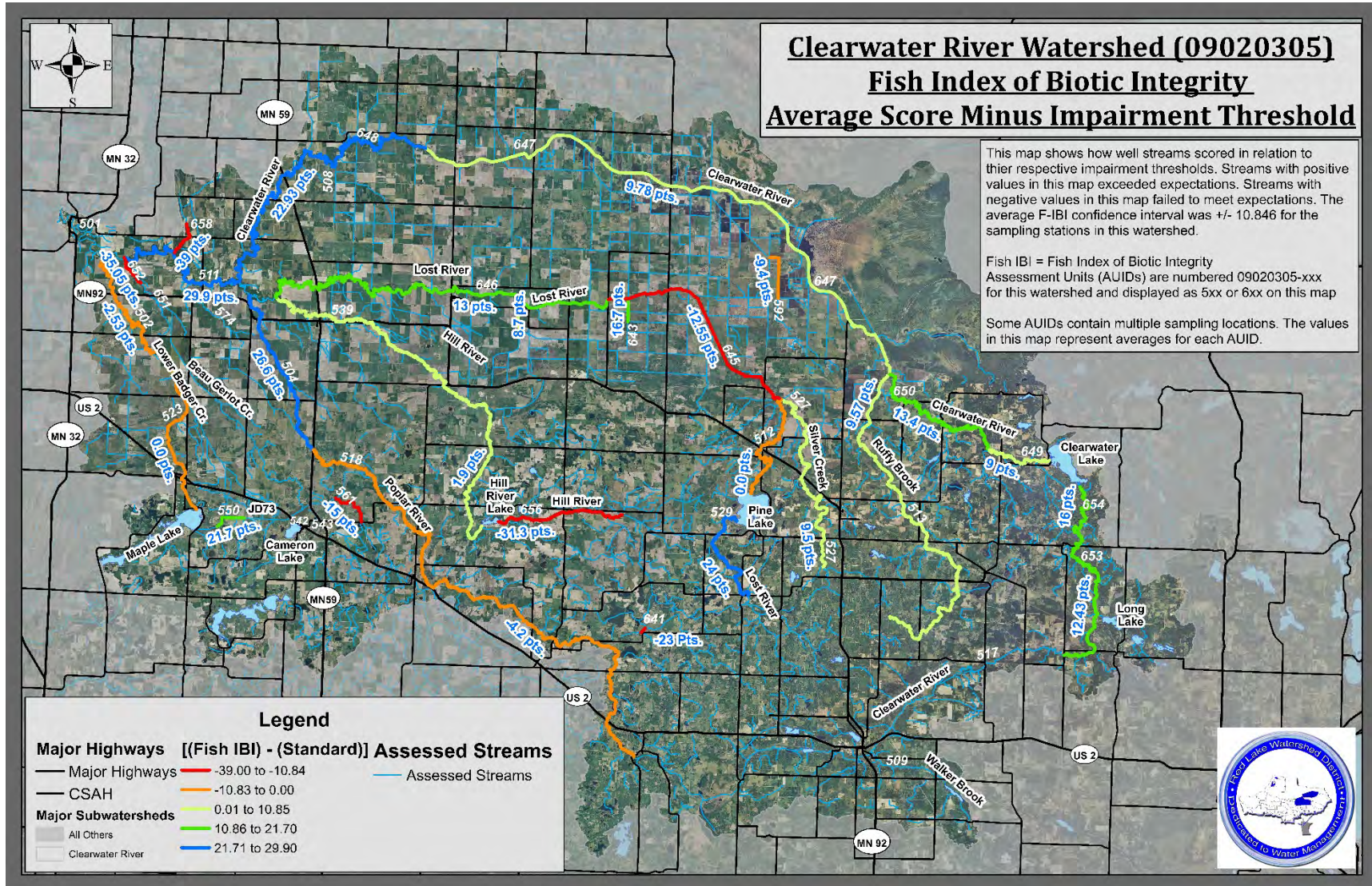
# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

July - August  
2017



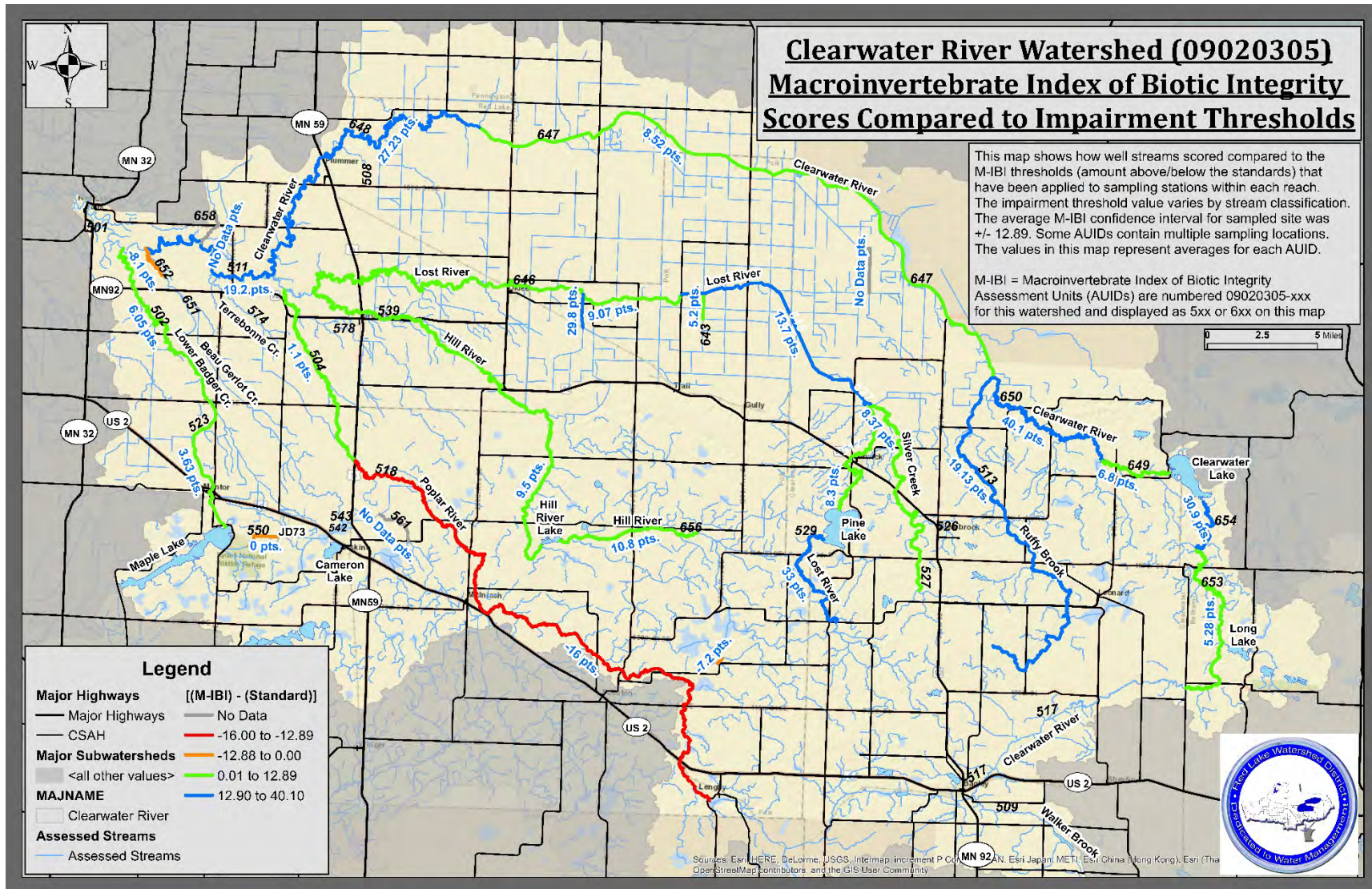
# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

July - August  
2017



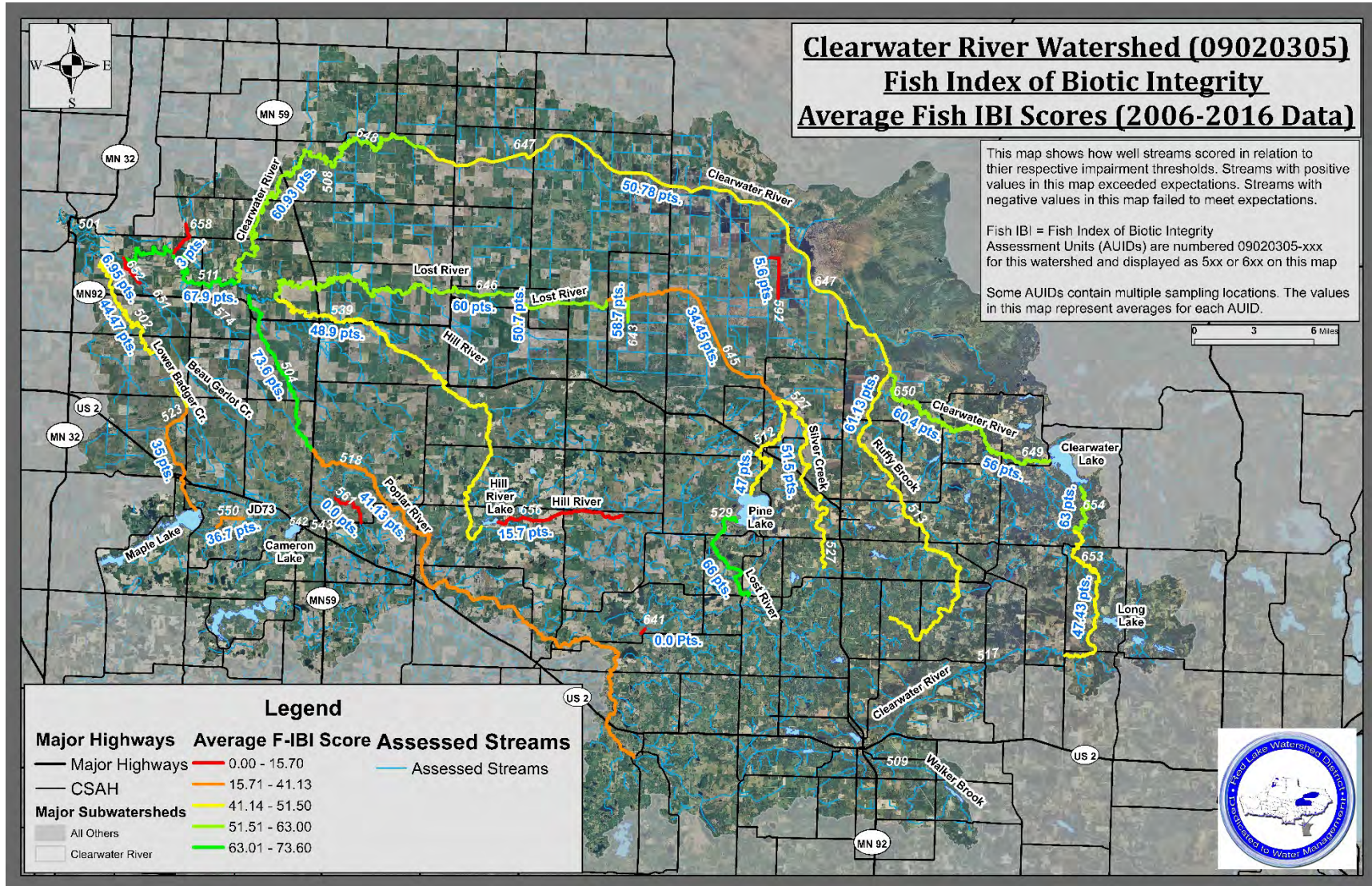
# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

July - August  
2017



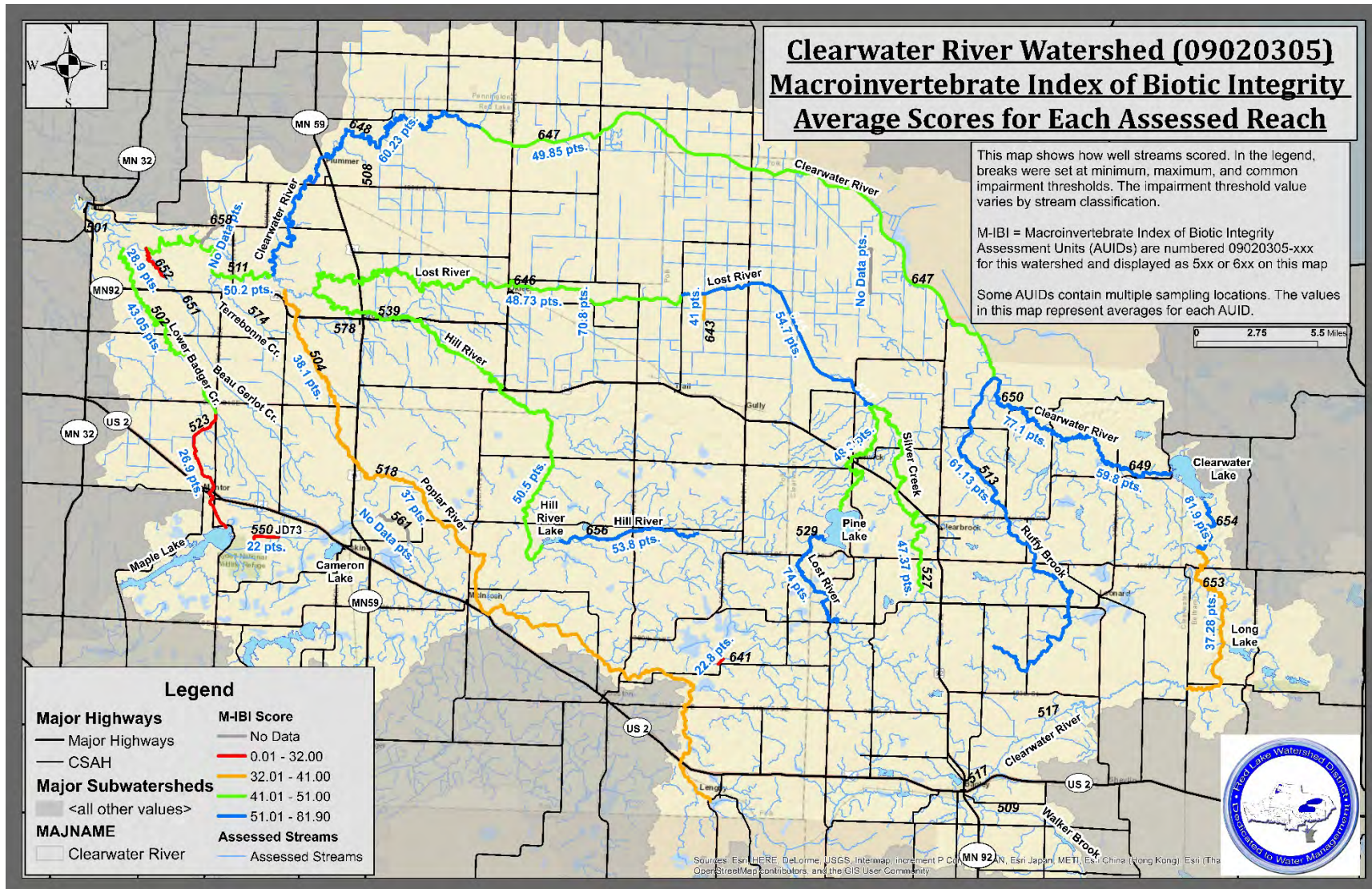
# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

July - August  
2017



# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

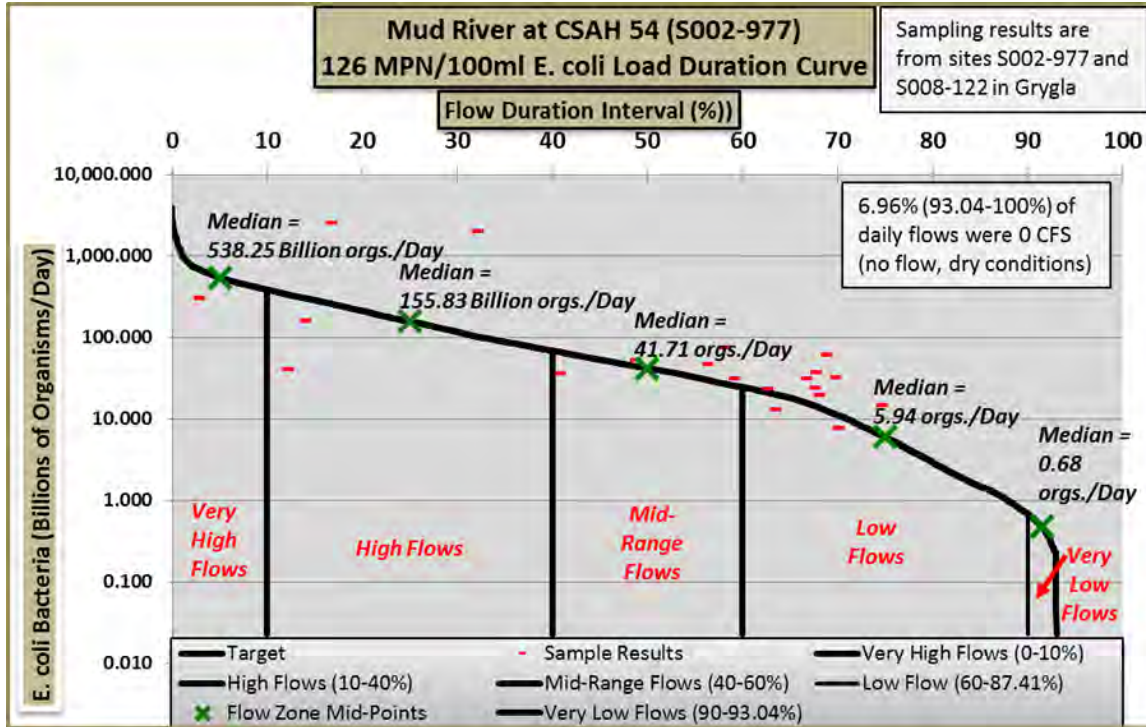
July - August  
2017



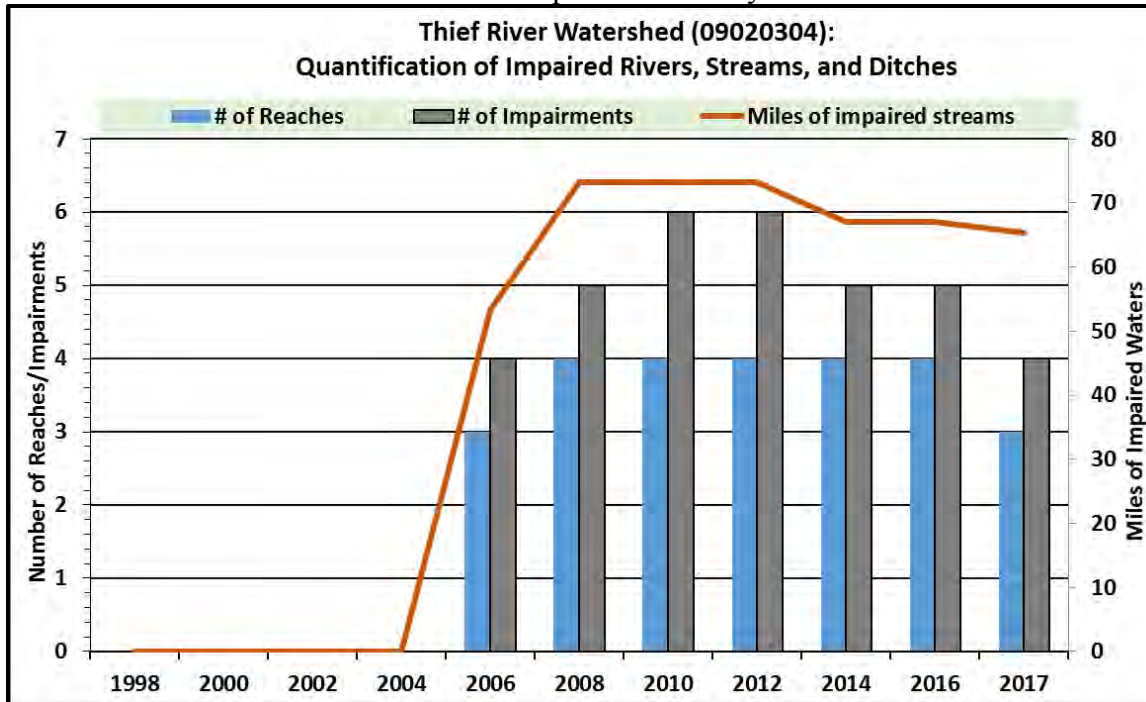
**Thief River Watershed Restoration and Protection Strategy**

RLWD staff began completing an *E. coli* TMDL for the Mud River.

- Mud River load duration curve



- A chart was created to show the impairment history of the watershed.





# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

July - August  
2017

- An *E. coli* TMDL for the Mud River at CSAH 54 was calculated.

Drainage Area (square miles): 133.81 Monitoring Site Flow record used to develop flow zones and loading capacities: S002-977 (EQULS) <i>E. coli</i> Standard: 126 MPN/100ml %MS4 Urban: 0.00 Total WWTF Design Flow (mgd): 0.00		AUID 09020304-507 Mud River at CSAH 54 (S002-977) Loading Capacity and Load Allocations for <i>E. coli</i>				
		Duration Curve Zone				
		Very High	High	Mid-Range	Low	Very Low
TMDL Component		Values expressed as Billions of Organisms per Day				
MEDIAN FLOW		174.61	50.55	13.53	1.93	0.15
MEDIAN OF FLOW DURATION ZONE		5%	25%	50%	75.0%	91.5%
<b>TOTAL DAILY LOADING CAPACITY</b>		538.25	155.83	41.71	5.94	0.47
<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>		484.43	140.25	37.54	5.35	0.43
<b>Daily Margin of Safety</b>		53.83	15.58	4.17	0.59	0.05
		Values expressed as Billions of Organisms per Day				
<b>TOTAL MONTHLY LOADING CAPACITY</b>		538.25	155.83	41.71	5.94	0.47
<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%
		Values expressed as Billions of Organisms per Day				
MEDIAN FLOW		174.61	50.55	13.53	1.93	0.15
MEDIAN OF FLOW DURATION ZONE		5%	25%	50%	75.0%	91.5%
FLOW DURATION ZONE		Very High	High	Mid-Range	Low	Very Low

Mud River (09020304-507) at CSAH 54 Annual <i>E. coli</i> Load Reductions at S002-977	Very High Flows	High Flows	Mid-Range Flows	Low Flows	Very Low Flows	Total
Current Daily Load (10 <sup>9</sup> orgs/day)	53.00	229.80	157.97	203.49	No Data	
Load Allocation (10 <sup>9</sup> orgs/day)	484.43	140.25	37.54	5.35	0.43	
Load reduction (10 <sup>9</sup> orgs/day)	-	89.55	120.42	198.14	-	
% of Flows Represented	10%	30%	20%	30.0%	3.0%	93%
# of Days Represented	36.5	109.5	73.0	109.5	11.1	339.60
Annual Load Reduction (10 <sup>9</sup> orgs/year)	-	9,805.98	8,790.93	21,696.74	-	<b>40,293.64</b>
Total Current Load	1,934.50	25,163.30	11,531.48	22,282.46	0	60,911.74
Percent Reduction	0.0%	<b>39.0%</b>	<b>76.2%</b>	<b>97.4%</b>	0.0%	<b>66.2%</b>

- The MPCA officially removed the *E. coli* impairment of Branch A of Judicial Ditch 21 from the list of impaired waters.
- An updated calculation of water quality assessment statistics (2007-2016 data) was completed by RLWD staff for the Thief River watershed. Sites were ranked based on how close they were to meeting or exceeding the water quality standards for total suspended solids, *E. coli* bacteria, dissolved oxygen, Fish Index of Biotic Integrity, Macroinvertebrate Index of Biotic Integrity, and total phosphorus.

# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

**July - August  
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○ Total Suspended Solids

River	Reach	AUID	TSS Std Exceedance Rate	Proximity to Std	TSS Standard	TSS Years
Thief River	Agassiz Pool to Red Lake R	09020304-501	22.0%	12.0%	30	2007-2016
Mud River	Headwaters to Agassiz Pool	09020304-507	10.3%	0.3%	15	2007-2016
Unnamed Ditch (Branch A of JD21)	Unnamed ditch to Moose R	09020304-555	5.6%	4.4%	30	2011-2016
Mud River	Headwaters to Agassiz Pool	09020304-507	4.0%	6.0%	30	2007-2016
Unnamed Ditch (Judicial Ditch <del>18</del> -30)	T154 R42W S14, east line (JD30) to Thief R	09020304-509	3.7%	6.3%	30	2008-2016
Moose River	Headwaters to Thief Lk	09020304-505	2.7%	7.3%	15	2007-2016
Moose River	Headwaters to Thief Lk	09020304-505	0.0%	10.0%	30	2007-2016
Thief River	Thief Lk to Agassiz Pool	09020304-504	0.0%	>10%	30	2007-2016
Unnamed Ditch (Ditch 200)	Unnamed ditch to unnamed ditch	09020304-511	0.0%	>10%	30	2007-2012
County Ditch 20	Unnamed ditch (Branch A CD 30) to Unnamed ditch (Branch D CD 20)	09020304-519	0.0%	>10%	30	2007-2016
Unnamed Ditch	Unnamed ditch to unnamed ditch	09020304-534	0.0%	>10%	30	2008-2009
Impaired reach in need of restoration		Not impaired, but close. Needs protection				

○ *E. coli* Bacteria

River/Ditch Name	Reach Description	AUID	May E. coli	June E. coli	July E. coli	Aug. E. coli	Sept. E. coli	Max. Geo- Mean	Proximity to Std	E. coli Years
Thief River	Agassiz Pool to Red Lake R	09020304-501	11.4	47.8	92.7	74.5	124.2	124.2	1.8	2005-2014
Mud River	Headwaters to Agassiz Pool	09020304-507	27.7	93.7	116.4	75.4	41.1	116.4	9.6	2005-2014
Unnamed Ditch (Branch A of JD21)	Unnamed ditch to Moose R	09020304-555	17.7	99.5	34.6	41.6	63.3	99.5	26.5	2011-2015
County Ditch 20	Unnamed ditch (Branch A CD 30) to Unnamed ditch	09020304-519	13.3	43.5	70.6	52.0	39.4	70.6	55.4	2007-2014
Thief River	Thief Lk to Agassiz Pool	09020304-504	4.6	24.9	31.2	45.8	66.4	66.4	59.6	2005-2014
Unnamed Ditch (Judicial Ditch <del>18</del> -30)	T154 R42W S14, east line (JD30) to Thief R	09020304-509	16.2	51.1	45.8	42.1	43.9	51.1	74.9	2008-2014
Unnamed Ditch (Ditch 200)	Unnamed ditch to unnamed ditch	09020304-511	9.7	19.9	46.0	25.8	21.8	46.0	80.0	2007-2012
Moose River	Headwaters to Thief Lk	09020304-505	10.1	35.1	44.5	30.9	45.4	45.4	80.6	2005-2014
Impaired reach in need of restoration		Not impaired, but close. Needs protection								

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o Dissolved Oxygen

<u>River/Ditch Name</u>	<u>Reach Description</u>	<u>AUID</u>	<u>Percentage of values &lt;5 mg/l</u>		
			<u>DO12 All (EQuIS)</u>	<u>DO5 All (EQuIS)</u>	<u>DO5 9am</u>
Unnamed Ditch (Branch 200 of JD11)	Unnamed ditch to unnamed ditch (Hwy 219 to 290th Ave NE)	09020304-534	18.2%	21.6%	57.1%
Unnamed Ditch (Ditch 200)	Unnamed ditch to unnamed ditch	09020304-511	8.8%	12.4%	IF, 100%
Moose River	Headwaters to Thief Lk	09020304-505	9.7%	11.7%	IF, 65%
County Ditch 20	Unnamed ditch to CD 32	09020304-513	6.5%	8.7%	40.0%
Unnamed Ditch (Br1 of JD11)	Unnamed ditch (Br15 JD11) to unnamed ditch (Br 7 JD11)	09020304-543	2.6%	5.4%	No data
County Ditch 20	Unnamed ditch (Branch A CD 30) to	09020304-519	2.2%	2.9%	42.9%
Thief River	Agassiz Pool to Red Lake R	09020304-501	5.9%	2.9%	0.0%
Unnamed Ditch (Branch A of JD21)	Unnamed ditch to Moose R	09020304-555	1.7%	1.9%	IF, 0%
Mud River	Headwaters to Agassiz Pool	09020304-507	1.3%	1.7%	16.0%
Judicial Ditch 11	Unnamed ditch (Branch 194 of JD11) to Thief River	09020304-536	0.0%	1.6%	No data
Unnamed Ditch (Judicial Ditch 30)	T154 R42W S14, east line (JD30) to Thief R	09020304-509	1.0%	1.2%	3.3%
Judicial Ditch 11	Unnamed ditch (Moose R Impoundment South Pool Outlet) to unnamed ditch (Benville Rd)	09020304-521	0.0%	0.0%	IF, 0%
Thief River	Thief Lk to Agassiz Pool	09020304-504	0.0%	0.0%	IF, 0%
Judicial Ditch 11 (Lost River Pool)	Unnamed ditch (Mud River) to unnamed ditch (Br 194 JD11)	09020304-535	0.0%	0.0%	IF, 0%
Impaired reach in need of restoration		Not officially impaired, but needs protection			

# RED LAKE WATERSHED DISTRICT MONTHLY WATER QUALITY REPORT

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○ Total Phosphorus

River	Reach	AUID	TP Std (mg/l)	Summer Avg TP	Proximity to Standard
Mud River	Headwaters to Agassiz Pool	09020304-507	0.050	0.06	0.01
Moose River	Headwaters to Thief Lk	09020304-505	0.050	0.05	0.00
Thief River	Agassiz Pool to Red Lake R	09020304-501	0.100	0.07	-0.03
Unnamed Ditch (Judicial Ditch 18-30)	T154 R42W S14, east line (JD30) to Thief R	09020304-509	0.100	0.07	-0.03
Mud River	Headwaters to Agassiz Pool	09020304-507	0.100	0.06	-0.04
Moose River	Headwaters to Thief Lk	09020304-505	0.100	0.05	-0.05
County Ditch 20	Unnamed ditch (Branch A CD 30) to Unnamed ditch (Branch D CD 20)	09020304-519	0.100	0.06	-0.05
Unnamed Ditch (Ditch 200)	Unnamed ditch to unnamed ditch	09020304-511	0.100	0.05	-0.05
Thief River	Thief Lk to Agassiz Pool	09020304-504	0.100	0.04	-0.06
Unnamed Ditch (Branch A of JD21)	Unnamed ditch to Moose R	09020304-555	0.100	0.03	-0.07
Impaired reach (potential, not official) in need of restoration		Not impaired, but close. Needs protection			

## Red Lake River Watershed Restoration and Protection Strategy

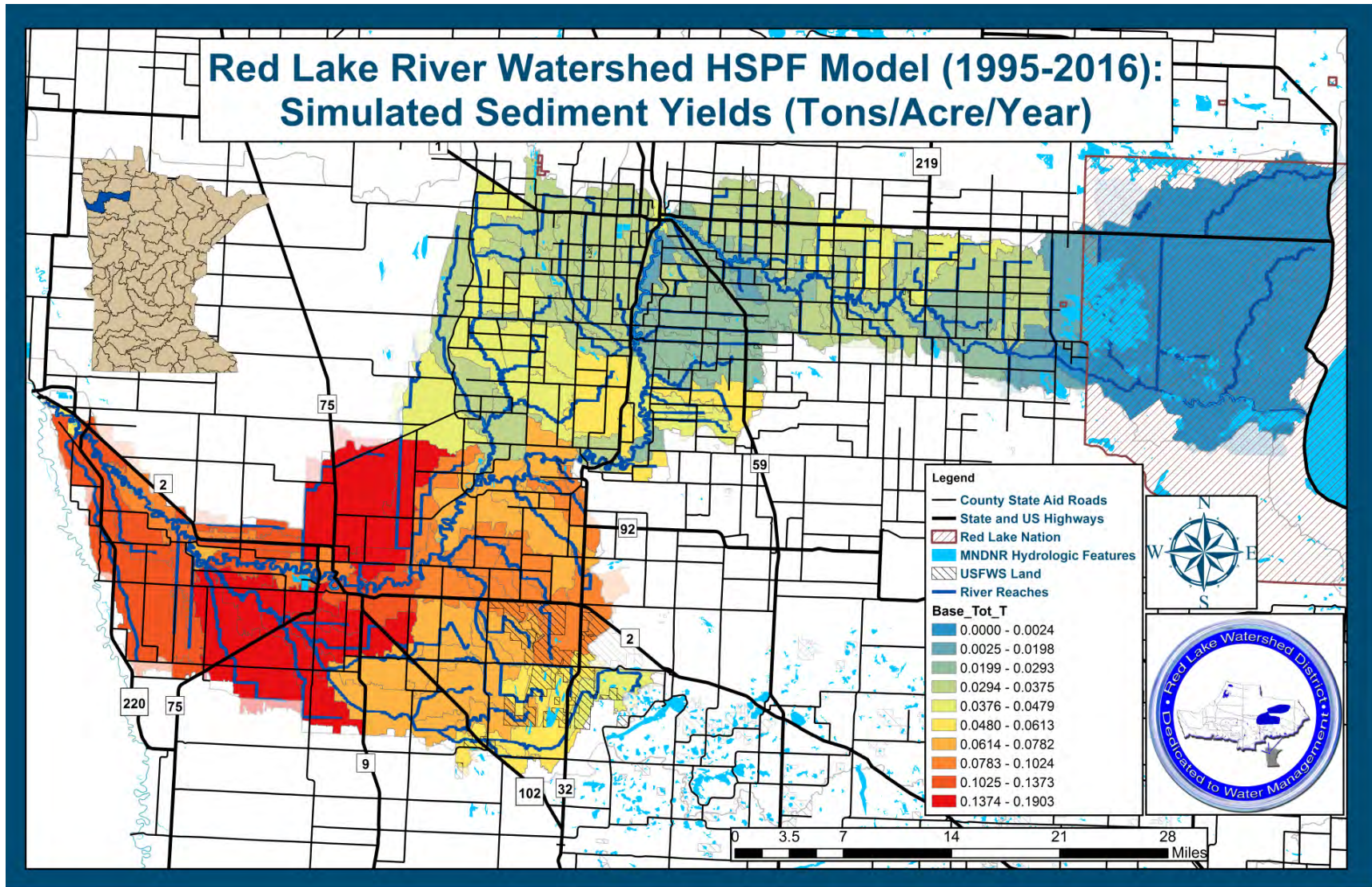
RLWD staff began working on edits to the Red Lake River Total Maximum Daily Load report, including:

- New map of the Judicial Ditch 60 drainage area
- Comparison of data from Judicial Ditch 60 with data from Kripple Creek
- Began a detailed read-through and review of the Red Lake River TMDL to check for editing needs.
- Stressor summary table
- Nonpoint pollutant source summary table
- Edited the section that discusses the HSPF model
- In-stream sediment source data from the existing HSPF model were used to create new sediment source pie charts for the Red Lake River. The numbers didn't look realistic, though. The model drastically overestimated urban sources and underestimated in-stream sources. This problem was shared with MPCA and RESPEC modeling staff. They were aware of the problem and were in the process of updating the model.
- An updated version of the Red Lake River HSPF model was completed by the consultants, RESPEC, for the MPCA. They also create a Scenario Application Manager (SAM) program for the Red Lake River watershed. The SAM program can be used to

extract water quality information and simulate the implementation of best management practices.

- There may still be some issues with the model. The model appears to include significant septic system inputs in sub-basins where there are no homes.
- A revised sediment yield map was created.
- A short time after information from the updated HSPF model was incorporated into the Red Lake River WRAPS and TMDL documents, the revisions of those documents were completed and sent to the MPCA Project Manager.
- Detailed review and editing was completed. In July, the Red Lake River Watershed TMDL and WRAPS documents were revised to the point where only updated/corrected HSPF model data was needed in order to complete the revisions and send the documents to the MPCA Project Manager for further review.
- RLWD staff provided information to the MPCA Watershed Assessment Team about Heartsville Coulee, which was being considered for recategorization. The dissolved oxygen impairment is being caused by something other than a pollutant.

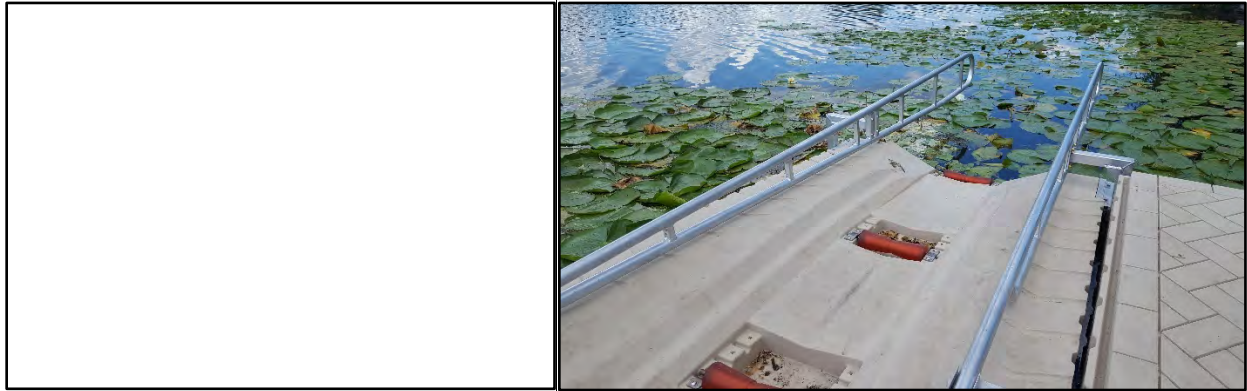
### Red Lake River Watershed HSPF Model (1995-2016): Simulated Sediment Yields (Tons/Acre/Year)



**Other Notes**

- Emmons and Olivier Resources, Inc. staff completed a revised version of the Grand Marais Creek Watershed Restoration and Protection Strategy document
- A final report was completed for the Grand Marais Creek Watershed Restoration and Protection Strategy project.
- The HOBO water level logger deployment pipe, HOBO water level logger, and posts were retrieved from the Red Lake River at CSAH 27.
- A website was created for the Thief River One Watershed One Plan
  - <http://www.rlwdwatersheds.org/thiefriver1w1p>
  - Updates were made to the website prior to meetings – whenever new meeting materials, agendas, or minutes became available.
- Clearwater River Watershed HSPF modeling data was shared with SWCD staff.
- Reports, GIS layers, photos, maps, and other information was uploaded to a shared FTP site for the Thief River One Watershed One Plan process.
- A water quality report was completed for the month of May 2017.
- A new word, “partici-pointed,” was accidentally “coined” at an August meeting. Although the person meant to say “participated,” “partici-pointed” could actually be useful to describe disappointment with participation (combination of the words participation and disappointed). It could describe the feeling a person gets when they have something that they want to say, but are left out of a conversation.
- The Minnesota Pollution Control Agency sent a notice that they officially delisted dissolved oxygen impairments on two reaches of the Clearwater River (09020305-647 – Ruffy Brook to JD1 and 09020305-648 – JD1 to Lost River). The MPCA also officially removed the *E. coli* impairment on Branch A of JD 21 (09020304-555) from the Draft 2018 303(d) List of Impaired Waters. The recategorization of the dissolved oxygen impairment of Walker Brook (09020305-509 - Walker Brook Lake to Clearwater River), has also been officially reviewed and approved.
- The International Water Institute scheduled multiple community paddle events:
  - Crookston (Fri, September 8 - 4:00 - 7:00 pm)
  - Crookston (Sat, September 9 - 10:00 am - 2:00 pm)
  - Thief River Falls (Mon, September 11 - 4:00 - 7:00 pm)
  - East Grand Forks (Tue, September 12 - 4:00 - 7:00 pm)
- A solar eclipse occurred on August 21, 2017. Unfortunately, the skies were too cloudy in Thief River Falls to observe the eclipse.
- Ashley Hitt and the seasonal water quality staff toured the RMB Environmental Laboratories facility.

- The City of Thief River Falls has recently installed a kayak/canoe launching ramp at Lafave Park.



### **July and August 2017 Meetings and Events**

- **July 11, 2017** – Marshall County Water Resources Advisory Committee meeting in Newfolden
  - Buffer initiative
  - Thief River One Watershed One Plan
  - Snake-Middle River WRAPS
- **August 18, 2017** – Thief River One Watershed One Plan meeting
  - Vision presentation
  - Priority Resource Concerns and Issues
  - Meeting Schedule
  - Stakeholder Participation Plan
  - Outline
  - Prioritization Matrix
  - Planning Region Boundaries
- **August 21, 2017** – Red Lake River One Watershed One Plan conference call
- **August 28, 2017** – We Are Water informational meeting at the Valley Technology Park in Crookston (Ashley Hitt attended)
  - This was an informational meeting about the possibility that the West Polk SWCD may host a 1000 square foot traveling exhibit called We Are Water. The exhibit features state wide and local information about Minnesota's water story, bringing together personal narratives, historical materials and scientific information.



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**Quote of the Month:**

“There is only one way to avoid criticism: do nothing, say nothing, and be nothing.”

- Aristotle

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](http://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](http://www.rlwdwatersheds.org).

“Like” the Red Lake Watershed District on [Facebook](https://www.facebook.com/redlakewatershed) to stay up-to-date on RLWD reports and activities.