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Water quality monitoring has been conducted since 1984 by the District at nineteen sites associated with streams and has commenced more recently at four other sites on lakes within the sub-watershed. Lakes being monitored include Clearwater Lake (1993), Cameron Lake (2003), Maple Lake (2004), and Badger Lake (2004). The parameters measured included field measurements for dissolved oxygen, pH, temperature, turbidity, transparency, conductivity, etc. Laboratory analysis is performed on stream samples for fecal coliform, total suspended solids, total dissolved solids, chemical oxygen demand, total phosphorus, orthophosphorous, nitrates and nitrites, ammonia, total kjeldahl nitrogen, and alkalinity. Lakes monitoring data includes Secchi depth readings, as well as total phosphorous and chlorophyll-a analysis. The District periodically prepares a water quality report, and results are available upon request in the District office. There are six impaired stream reaches as identified by the Minnesota Pollution Control Agency in this sub-watershed. They include;

- ❖ Clearwater River, Ruffy Brook to Poplar River
- ❖ Clearwater River, Clearwater Co. Line to Clearwater Lake
- ❖ Walker Brook, from Walker Brook Lake to Clearwater River
- ❖ Poplar River, from Spring Lake to Hwy 59
- ❖ Lost River, from Silver Creek to Hill River
- ❖ CD57, from confluence with Clearwater River to approx. 2 miles upstream
- ❖ MPCA monitoring sites            1
- ❖ Riverwatch monitoring sites    19
- ❖ SWCD monitoring sites            2

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**Watershed Name** Thief River - Moose River - Mud River  
**Impaired Waters** Currently none - reach between Agassiz NWR and TRF most likely will be on 2006 list  
**Number of Stream Sampling Sites**

RLWD	5
SWCDs	8
Riverwatch	4
MPCA	1

**Field Parameters** dissolved oxygen, pH, water temperature, turbidity, transparency, conductivity, total dissolved solids, stage  
fecal coliform, total suspended solids, total dissolved solids, chemical oxygen demand, total phosphorus, orthophosphorous, nitrates and nitrites, ammonia, total kjeldahl nitrogen, and alkalinity

**Laboratory Parameters**  
**Earliest Sampling Date** 1980  
**Key Sampling Locations** Hillyer Bridge (USGS gauge GS-05-0760), Moose R. and Mud R.  
**Other Notes** The Hillyer Bridge monitoring site is also monitored by the MPCA  
Noted Problems with High TSS and Low Dissolved Oxygen between Agassiz and TRF

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**Watershed Name** Upper Red Lake River  
**Impaired Waters** None currently, none expected on 2006 list  
**Number of Stream Sampling Sites**

RLWD	2
SWCDs	2
Riverwatch	0

**Field Parameters** dissolved oxygen, pH, water temperature, turbidity, transparency, conductivity, total dissolved solids, stage  
fecal coliform, total suspended solids, total dissolved solids, chemical oxygen demand, total phosphorus, orthophosphorous, nitrates and nitrites, ammonia, total kjeldahl nitrogen, and alkalinity

**Laboratory Parameters**  
**Earliest Sampling Date** 1980  
**Key Sampling Locations** Red Lake Dam Outlet (GS-05-0740), Highland Bridge

**Other Notes** We are dropping the RL Dam starting in 2004 due to avoid duplication of monitoring efforts with the RLDNR, it will continue to be monitored by the RLDNR.

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<b>Watershed Name</b>	Lower Red Lake River	
<b>Impaired Waters</b>	2 reaches Red Lake River; Burnham Creek to Unnamed Creek (East Grand Forks) Red Lake River; Unnamed Creek to Red River	
<b>Number of Stream Sampling Sites</b>	RLWD	6
	SWCDs	7
	Riverwatch	15
	MPCA	1
<b>Field Parameters</b>	dissolved oxygen, pH, water temperature, turbidity, transparency, conductivity, total dissolved solids, stage fecal coliform, total suspended solids, total dissolved solids, chemical oxygen demand, total phosphorus, orthophosphorous, nitrates and nitrites, ammonia, total kjeldahl nitrogen, and alkalinity	
<b>Laboratory Parameters</b>		
<b>Earliest Sampling Date</b>	1984	
<b>Key Sampling Locations</b>	1st Street Bridge in Thief River Falls, Sampson Bridge in Crookston (GS-05-790), Murray Bridge in EGF, Burnham Creek, Black River	
<b>Other Notes</b>	The turbidity impairment on the RLR should extend upstream to at least Crookston on the 2006 impaired waters list based upon our data Our monitoring site in Thief River Falls shows no impairments.	

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<b>Watershed Name</b>	Upper and Lower Red Lakes	
<b>Impaired Waters</b>	None	
<b>Number of Stream Sampling Sites</b>		9 historical sites, 1 site that was monitored through
	RLWD	0 2002
		At least
	RLDNR	10
	Riverwatch	4
<b>Field Parameters</b>	dissolved oxygen, pH, water temperature, turbidity, transparency, conductivity, total dissolved solids, stage fecal coliform, total suspended solids, total dissolved solids, chemical oxygen demand, total phosphorus, orthophosphorous, nitrates and nitrites, ammonia, total kjeldahl nitrogen, and alkalinity	
<b>Laboratory Parameters</b>		
<b>Earliest Sampling Date</b>	1989	
<b>Key Sampling Locations</b>	Mud Creek in Redby	
<b>Other Notes</b>	The Red Lake Department of Natural Resources monitors all the main streams that inlet to the lake, as well as the Red Lakes themselves	

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<b>Watershed Name</b>	Grand Marais Creek								
<b>Impaired Waters</b>	Currently none, the Grand Marais will likely be on the next impaired waters list								
<b>Number of Stream Sampling Sites</b>	<table border="0"> <tr> <td>RLWD</td> <td>1</td> </tr> <tr> <td>SWCDs</td> <td>0</td> </tr> <tr> <td>Riverwatch</td> <td>3</td> </tr> <tr> <td>MPCA</td> <td>1</td> </tr> </table>	RLWD	1	SWCDs	0	Riverwatch	3	MPCA	1
RLWD	1								
SWCDs	0								
Riverwatch	3								
MPCA	1								
<b>Field Parameters</b>	dissolved oxygen, pH, water temperature, turbidity, transparency, conductivity, total dissolved solids, stage								
<b>Laboratory Parameters</b>	fecal coliform, total suspended solids, total dissolved solids, chemical oxygen demand, total phosphorus, orthophosphorous, nitrates and nitrites, ammonia, total kjeldahl nitrogen, and alkalinity								
<b>Earliest Sampling Date</b>	1985								
<b>Key Sampling Locations</b>	Grand Marais River @ Hwy 220								
<b>Other Notes</b>	<p>The MPCA monitors at the last road crossing before the Grand Marais enters the Red River</p> <p>Some of the ditches flowing into the Grand Marais and the Grand Marais itself are monitored by high school students through the Riverwatch program</p> <p>Very high turbidity and TSS levels, low dissolved oxygen as well</p>								