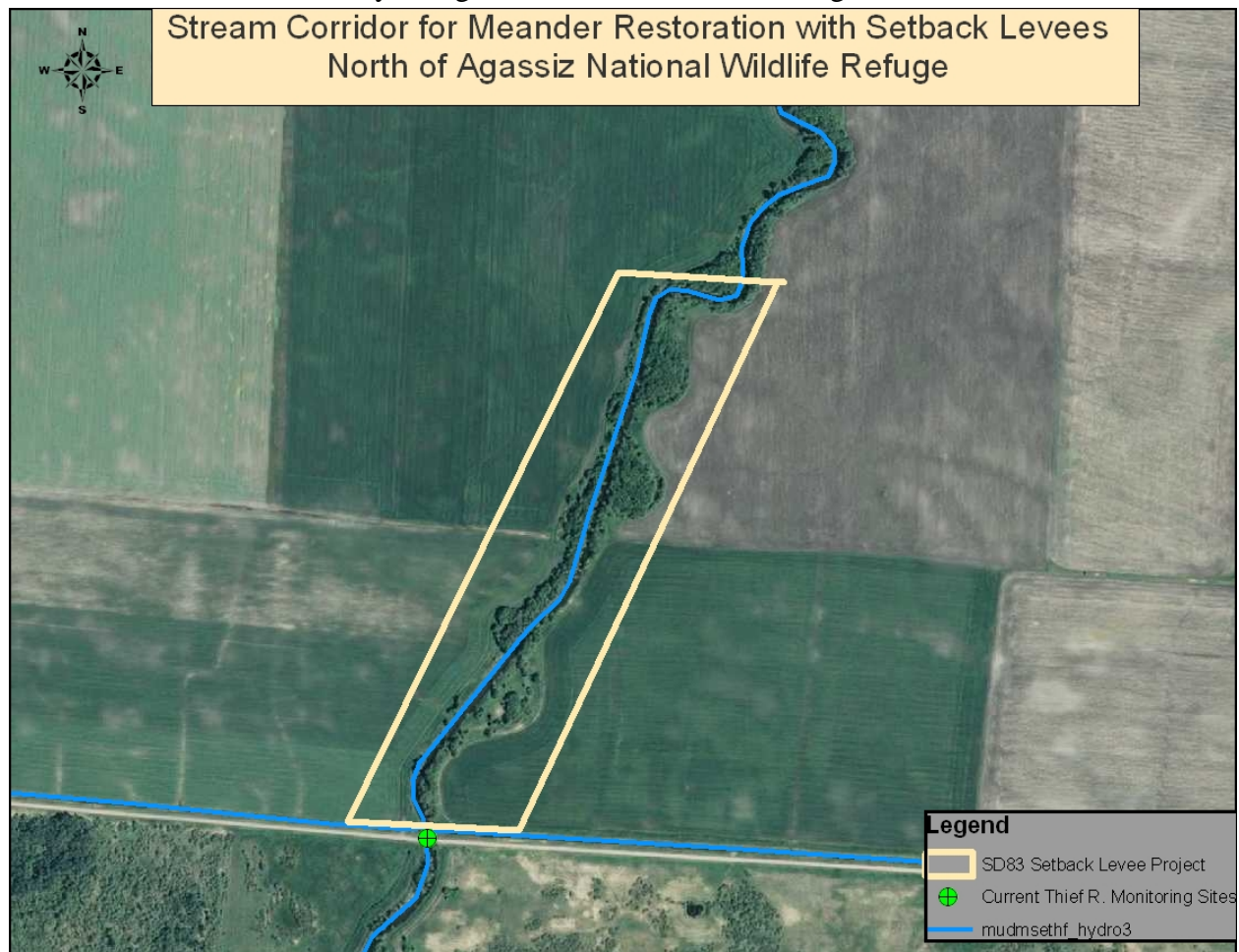


By: Corey Hanson, Water Quality Coordinator  
For: June 10th, 2010  
Red Lake Watershed District Board Meeting

### **Thief River Watershed Sediment Investigation**

- We received the final draft of the Thief River SWAT Modeling Report
- The SWAT Report is posted on the RLWD website at:  
[http://www.redlakewatershed.org/waterquality/TRW\\_Report.pdf](http://www.redlakewatershed.org/waterquality/TRW_Report.pdf)
- Provided the EERC with Thief River SWAT information for use in the Red Lake River SWAT modeling effort.
- A reconnaissance of the Thief River watershed was conducted by road and kayak to estimate Bank Erosion Hazard Index scores throughout the watershed, identify station locations for stream bank stability assessments that will occur in August of this year, identify problem areas, and identify potential projects.
  - Restore meanders in the Thief River between CSAH 6 and the crossing at the north boundary of Agassiz National Wildlife Refuge.



- We found a couple of livestock operations along the Mud River where cattle have access to the stream. One of the sites is particularly bad – the trampling of the banks has caused stream instability and channel widening. These are two sources of the high E. coli levels that have been found in the Mud River.



- The Mud River upstream of Grygla is very poorly buffered. Some fields are plowed into the ditch slope. This area is most likely a significant source of sediment in the Mud River watershed.





- There is a bend in the River near the Golf Course in Thief River Falls where there is erosion along the outside bend, gullying that has nearly cut off the meander, and erosion threatening a house just downstream.



- Gullying where field drainage enters the rivers and ditches is a significant source of sediment.
  - Major gullies along the new Hwy 54 construction.
  - Headcutting in private and township road ditches flowing into CD20
  - Some gullies along the Moose River



- There is at least one area where restoration of meanders in the straightened portion of the Moose River may be possible without disrupting farming operations.





- There has been a lot of recent sedimentation in the Thief River between CR7 (Agassiz Headquarters road) and CSAH 12 (Rangeline Road). This is some black, organic sediment. The grass growing up through the cracks, from beneath the layer of sediment, shows how quickly and recently it has been deposited. The sediment layer in the photo below is about 6 inches deep.



### **Stream Gauging**

- Flow was measured in Ruffy Brook (3 times) and Ditch 200 (twice) during the month of May.

### **Other Notes**

- Supplemental E. coli samples (to meet MPCA data requirements in time for the 2011 Statewide Assessment) were collected from Burnham Creek, Gentilly Creek, Black River, Grand Marais Creek, and Ruffy Brook.
- Very high E. coli levels were found in the supplemental samples collected Ruffy Brook.
- High E. coli levels were found in the Black River, Grand Marais Creek, and Burnham Creek on May 25<sup>th</sup>, after the heavy rainfall events.
- High E. coli in Ditch 200 on May 26<sup>th</sup>.
- High turbidity levels were also found in several places after the heavy rains of late May.



- Burnham Creek had a turbidity measurement of 1197 FNU.
- Black River turbidity was at 986 FNU on May 25<sup>th</sup>.
- RMB environmental Labs, Inc. has submitted a 319 Grant application to the MPCA for a “Watershed Stakeholder Tools Pilot” project. This project will give RMB Labs the opportunity to help with the civic engagement process in the Thief River, Bois de Sioux, Mustinka, and Sand Hill watersheds. They are proposing to develop guidelines for identifying stakeholders, understanding stakeholder knowledge, and developing communication strategies.
- The May 23-25 rain caused flooding and erosion problems throughout the western portion of the RLWD.
  - The angled steel plates at the end of the Yaggie surface flow measurement flume were torn off by the force of the runoff and the debris it carried.



- Churning slurry of muddy water in a ditch flowing to the Hill River.





- Massive washout of a tall embankment and its side-water-inlet culvert(s) along the Hill River, east of Brooks along Hwy 92.



- Black River on May 25<sup>th</sup>.





- Tile line blowout, possibly caused by a gopher.



- Browns Creek at CSAH 9.





### May 2010 Meetings and Events

- **May 3-5 and 10-12, 2010** – Reconnaissance of the Thief River Watershed with Dave Friedl of the DNR to prepare for the stream channel stability assessment.
  - **May 3** – Thief Lake to the Agassiz north boundary road.
  - **May 4** – Mud River, upstream and downstream of Grygla
  - **May 5** – Thief River from CR7 to CSAH 12
  - **May 10** – County Ditch 20
  - **May 11** – Moose River near Hwy 89 and upstream of Hwy 54
  - **May 12** – Thief River from the USGS Gauge to Thief River Falls.
- **May 24, 2010** – Red River Basin Water Quality Team meeting, 10am, RLWD office
  - Stakeholder Participation and Civic Engagement
    - Inventory of current public involvement.
    - Work with local water resource managers to achieve involvement in every step of watershed planning projects.
    - Pre/post project surveys to measure stakeholders’ and watershed residents’ knowledge of watershed and water quality issues.
    - Develop a communications strategy.
    - Evaluate participation in the project.
  - “Psychology of Sustainable Behavior” document is available at:  
<http://www.pca.state.mn.us/oea/publications/p-ee1-01.pdf>
    - Decisions are made using two main systems of reasoning: rule-based system (conscious, rational, and deliberate - Spock) vs. associative system (unconscious, sensory-driven, and impulsive - Homer Simpson).
    - Sustainable behaviors have appeal to the “Spock” side of people, but our challenge is in making them more appealing to the “Homer Simpson” side of people.
      - Address barriers such as the fear of trying something new, difficulty breaking a habit, and lack of knowledge of how to carry out a new action.
      - Demonstration of sustainable behaviors is important for educating people and making them comfortable with making changes.
      - Work to make the behavior the new social norm.
      - Make it personal. Find examples that are pertinent locally and activate the individual’s values.
      - Break down “bystander confusion.” Even if people are concerned, they may be uncertain about how to react. Give them simple ways to act.
      - Teach how to do it, not just why.
  - Water quality and pesticide use
    - Atrazine use is falling. Setback is now 66 feet.
    - Minnesota Department of Agriculture is trying to do a better assessment of pyrethroid insecticides.

- NPDES permits will be required for use of pesticides in ditches, starting in April.
- **May 26, 2010** – Glacial Ridge Teleconference.

### Plans for June 2010

- Second round of district-wide sampling for 2010.
- Adding information to the Thief River Watershed Sediment Investigation report.
- Revising the Draft Poplar River Dissolved Oxygen TMDL report.
- Supplemental E. coli samples at some Red Lake River monitoring sites and Ruffy Brook.
- Start planning the Marshall CD20 grade stabilization project.

### Future Meetings/Events

- **June 2010** – The public review and comment period for the Silver Creek and poplar River TMDLs should begin sometime this month.
- **June 9, 2010** – Marshall County Water Resources Advisory Committee Meeting, Newfolden
- **June 16, 2010** – Meeting at the Sand Hill Watershed District with RMB Labs and MPCA staff to discuss civic engagement and how RMB can help.
- **June 17, 2010** - Grand Marais Creek Project Team and TMDL Stakeholders meeting, 9:30 AM, RLWD
- **June 21, 2010** – Hearing for the Clearbrook stormwater pond, Clearbrook, 9:00 am
- **June 28, 2010** - Red River Basin Water Quality Team meeting, 10 am, Detroit Lakes MPCA office - “Presenting Technical Information”
- **June 29, 2010** – Ruffy Brook landowners’ meeting in Clearbrook. 4 PM
- **July 2010** – Anticipated beginning of the Thief River Watershed Assessment Project.
- **July 2010** – Construction on a stormwater retention pond in Clearbrook could start
- **August 11, 2010** - Marshall County Water Resources Advisory Committee Meeting, Newfolden
- **August 16<sup>th</sup> – 19<sup>th</sup> and 23<sup>rd</sup> – 26<sup>th</sup>, 2010** – Stream channel stability assessment in the Thief River watershed. Two weeks of work will be needed to accomplish this task.
- **August 23, 2010** - Red River Basin Water Quality Team meeting, 10am, RLWD office
  - “Stressor Identification for Watersheds”
- **August 31, 2010** – Completion of the Thief River Watershed Sediment Investigation
- **September 2010** – Possible beginning of work on the Red Lake River watershed Assessment Project.
- **September 27, 2010** - Red River Basin Water Quality Team meeting, 10am – 2pm, Detroit Lakes MPCA, 1<sup>st</sup> floor conference room.
- **September 30, 2010** – Target approval date for Silver Creek and Poplar River TMDLs
- **November 3, 2010** - Marshall County Water Resources Advisory Committee Meeting, Newfolden
- **November 22, 2010** - Red River Basin Water Quality Team meeting, 10am, RLWD office - “Presenting Watershed Information”