

Rat-Marsh River Integrated Watershed Management Plan

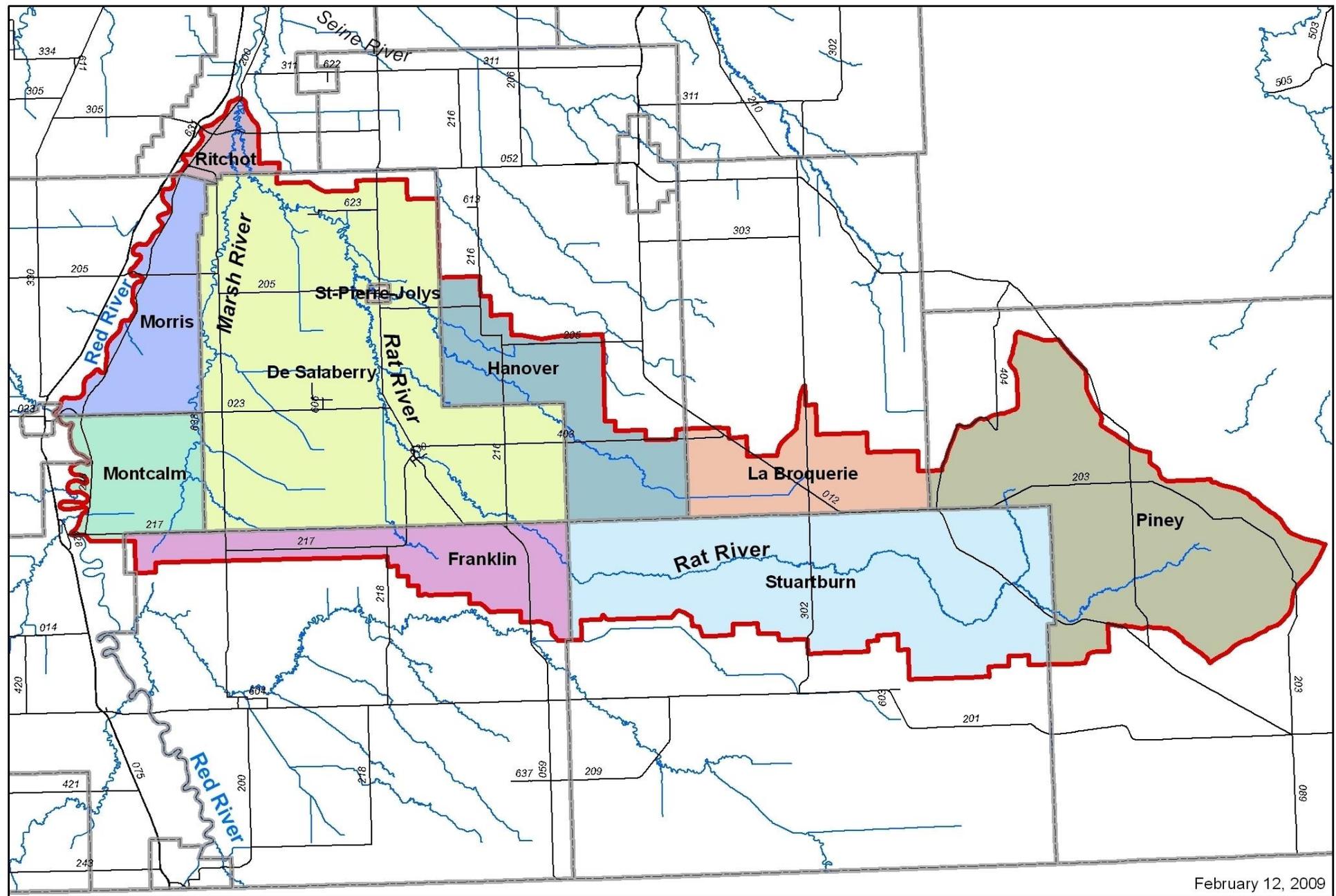
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Watershed Team Meeting #1

March 24, 2011

St. Pierre-Jolys



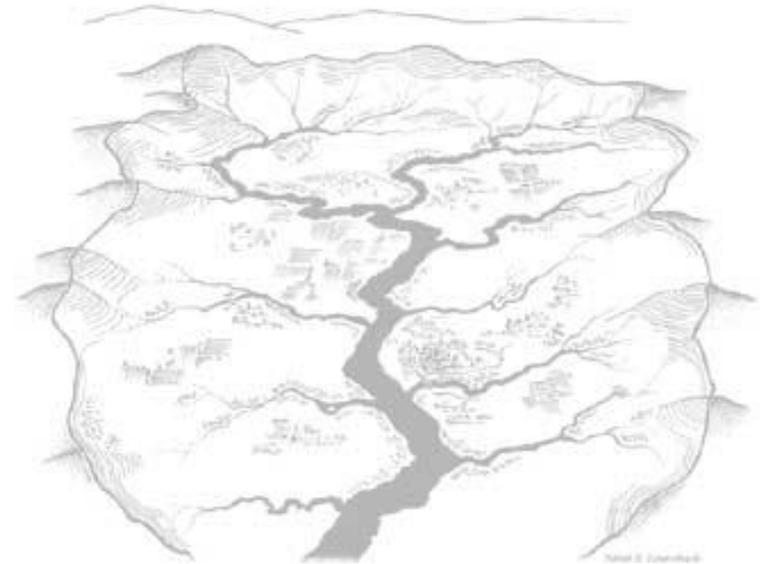


February 12, 2009

Figure 1 - Rat Marsh River Watershed

DEFINITION: Integrated Watershed Management Plan

- A document developed cooperatively by government and watershed stakeholders that states shared goals and outlines actions necessary to manage land, water and related resources on a watershed basis.
- In Manitoba, integrated watershed management planning is lead by Conservation Districts in partnership with Manitoba Water Stewardship.



PURPOSE: Integrated Watershed Management Plan

- Identify issues related to the protection, conservation or restoration of water, aquatic ecosystems and drinking water sources in the watershed
- Develop goals and recommendations for the watershed
- Implementation - establish when and how stakeholders will work towards meeting the goals in the plan



Planning Process

- Pre-planning
- Public consultations
- Summary of Public Comments document
- Establish Watershed Team
- Hold Watershed Team Meeting #1
- Draft IWMP
- Watershed Team Meeting #2
- Second Draft IWMP
- Watershed Team Meeting #3
- Public Review
- Launch Party
- Implementation

Summary of Public Comments

WATERSHED VALUES CATEGORY:

- Groundwater as our source of drinking water
- Rural lifestyle and outdoor recreational opportunities like hunting, fishing, off-road vehicles, and camping
- Farming and making a living off the land
- Our creeks and rivers
- Economic development
- Fresh air
- Natural areas / landscape / biodiversity

Also identified Threats/Issues and Solutions

AGENDA – Watershed Team Meeting #1

1. Introduction to IWMP and “Where we’re at” in the planning process
2. Presentations
3. Working in a Group: -Mapping and Ranking Values and Listing of Threats to the Values
4. Presentation of Group Results
5. Working in new Group -Establish Value categories and associated Goals for the Watershed
6. Propose Actions
7. Assess achievability and effectiveness of proposed Actions
8. Mini Management Plans

Presentations

Laurie Frost – Groundwater Management

Cassie Leclair – Water Quality Management

Rob Boswick – MB Conservation, Environmental Assessment
and Licensing

Heinz Reimer – HyLife

Gene Fortney – Nature Conservancy of Canada

Neil Loughran – St. Malo Lake Stewardship Committee

Doug Leroux - Fisheries

Rat-Marsh River Watershed

Groundwater Resources

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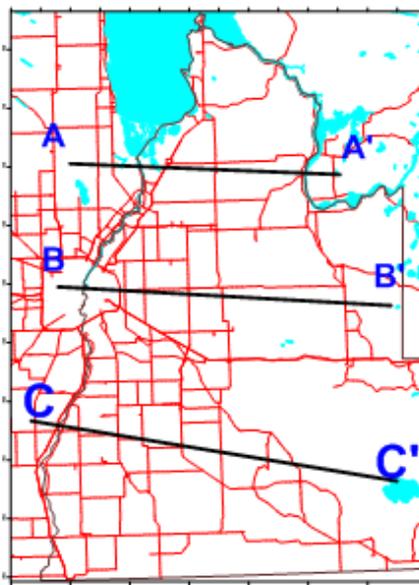
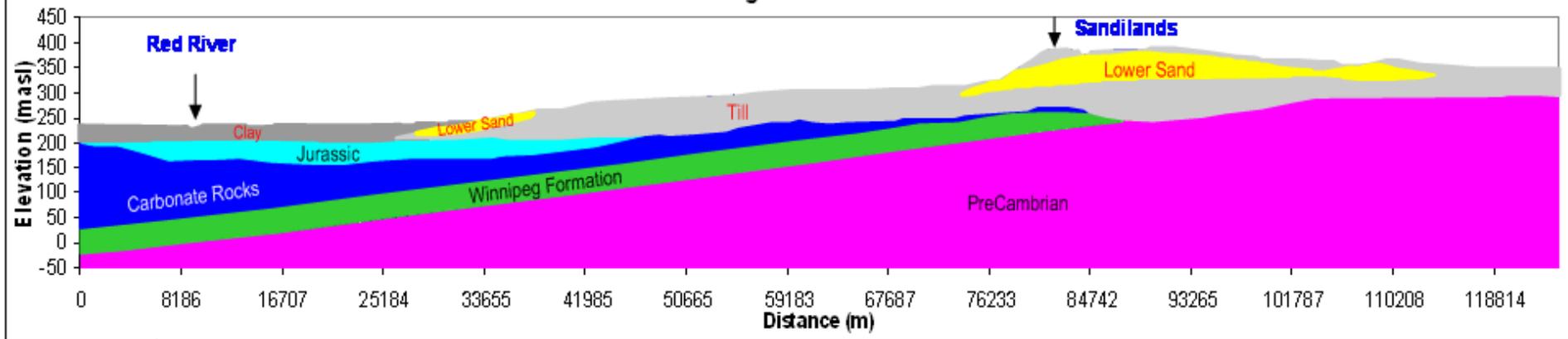
March 24, 2011

**Water Science and Management Branch
Manitoba Water Stewardship**

Laurie Frost



C-C' Geological Cross-Section

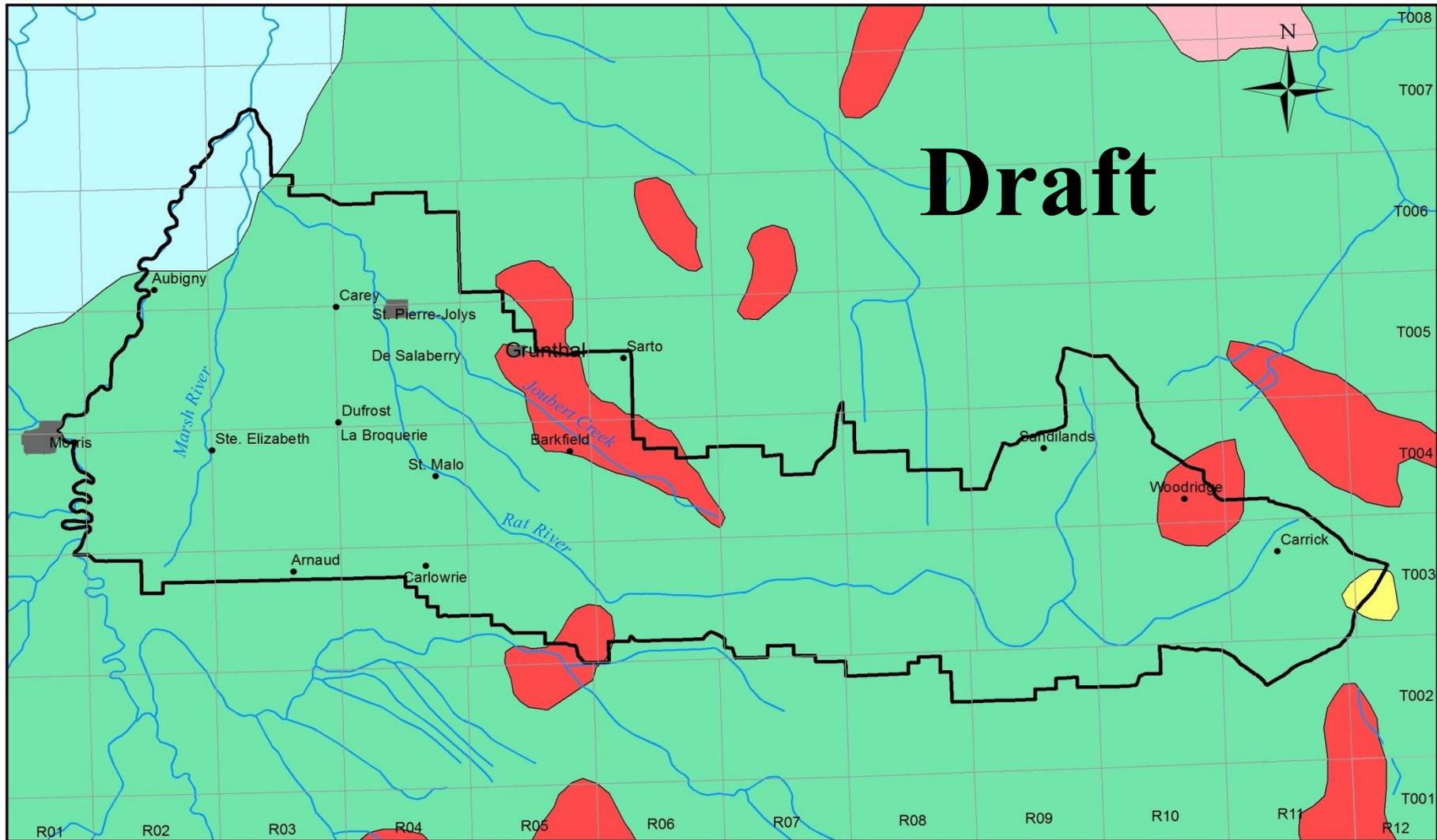


Reference: Wang, J., 2010.

Legend

		Groundwater Management Section	
C - C' Geological Cross-Section			
PROJECT	MANITоба	030841229	1/16
DATE	2010	04/09/10	REV
ISSUE	001	04/09/10	0
REVISION	001		
Capital Region Groundwater Resource Evaluation			FIGURE: 5

Rat-Marsh Watershed: Sand and Gravel Aquifers

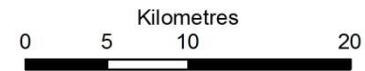


Legend

- Community
- ▭ Watershed Boundaries
- ▭ Urban Areas
- ▭ Township Grid

Sand and Gravel Aquifers

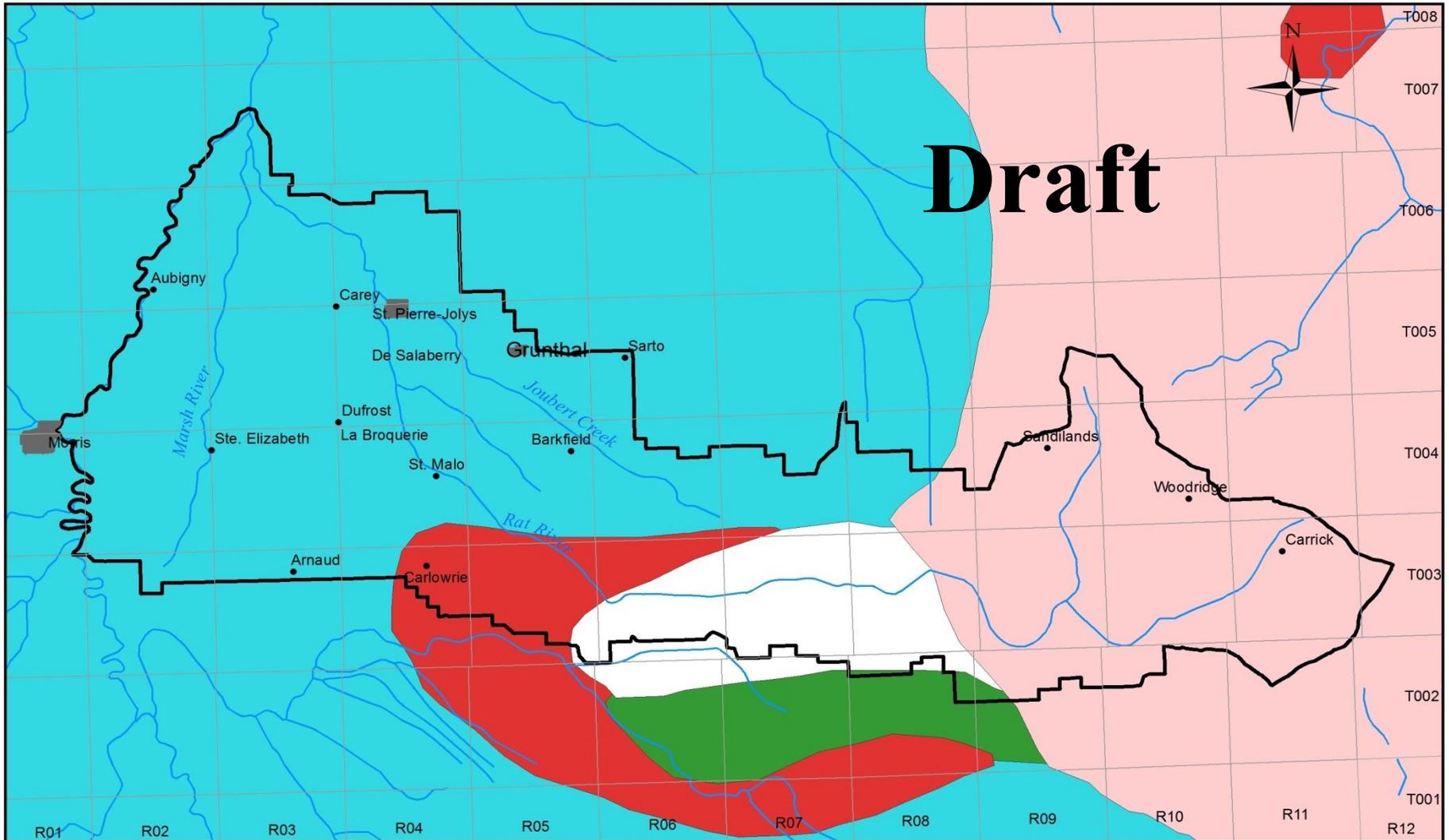
- ▭ Areas With Very Few Widely Scattered Minor Sand and Gravel Aquifers
- ▭ Lenses of Sand and Gravel
- ▭ Major Buried Sand and Gravel
- ▭ Thick and Extensive Unconfined Sand and Gravel
- ▭ Thin Unconfined Sand



1:426,000



Rat-Marsh Watershed: Bedrock Aquifers



Legend

- Community
- ▭ Watershed Boundaries
- ▭ Urban Areas
- ▭ Township Grid

Bedrock Aquifers

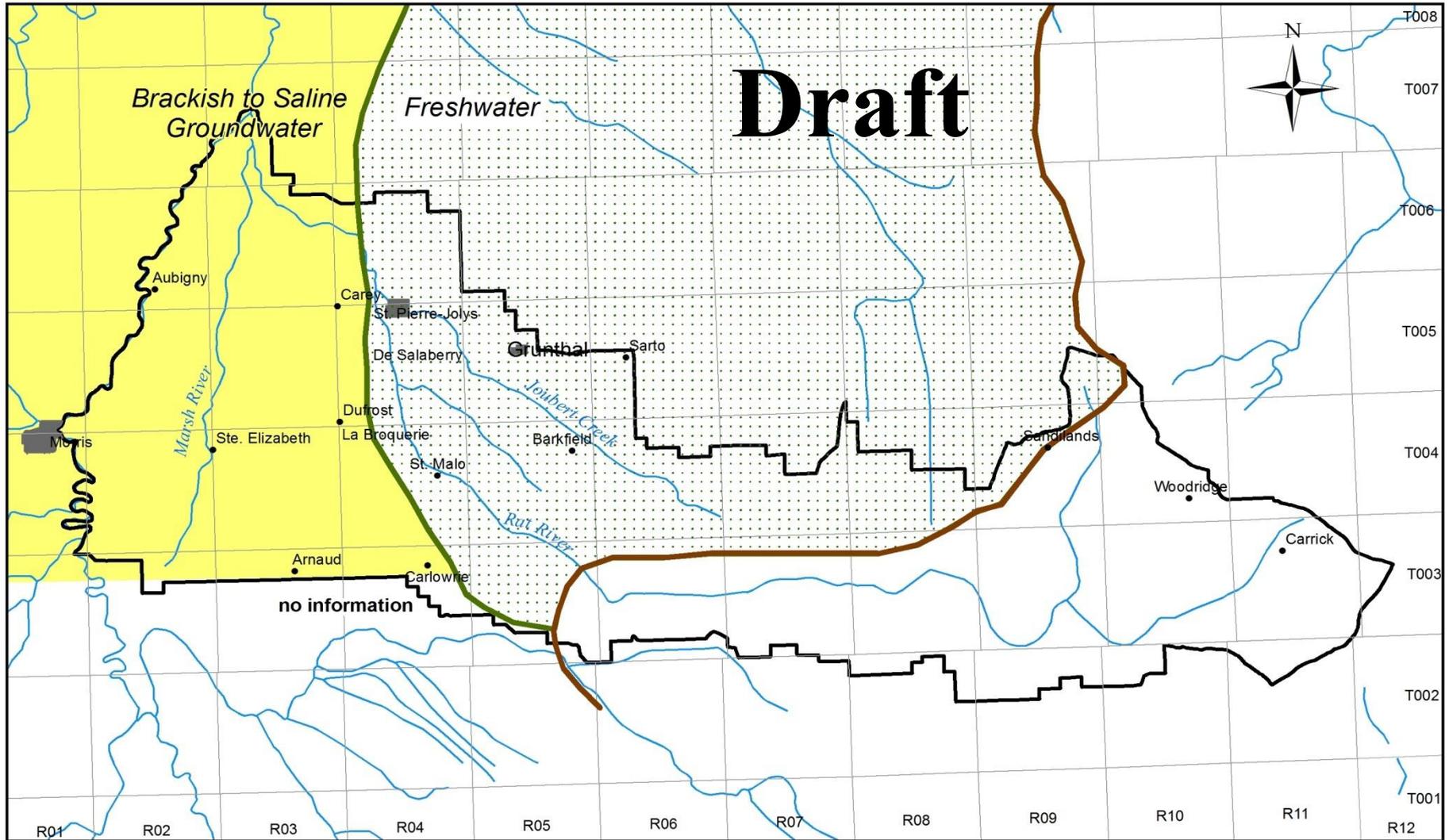
- ▭ Carbonate Rocks: Limestone and Dolomite
- ▭ Igneous and Metamorphic Rocks (Precambrian)
- ▭ Limestone, Sandstone, Shale (Jurassic Formations)
- ▭ No Bedrock Aquifers At Less Than 150 Metres
- ▭ Sandstone and Sand (Ordovician Winnipeg Formation)



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Rat-Marsh Watershed: Fresh-Water Salt-Water Boundary



Legend

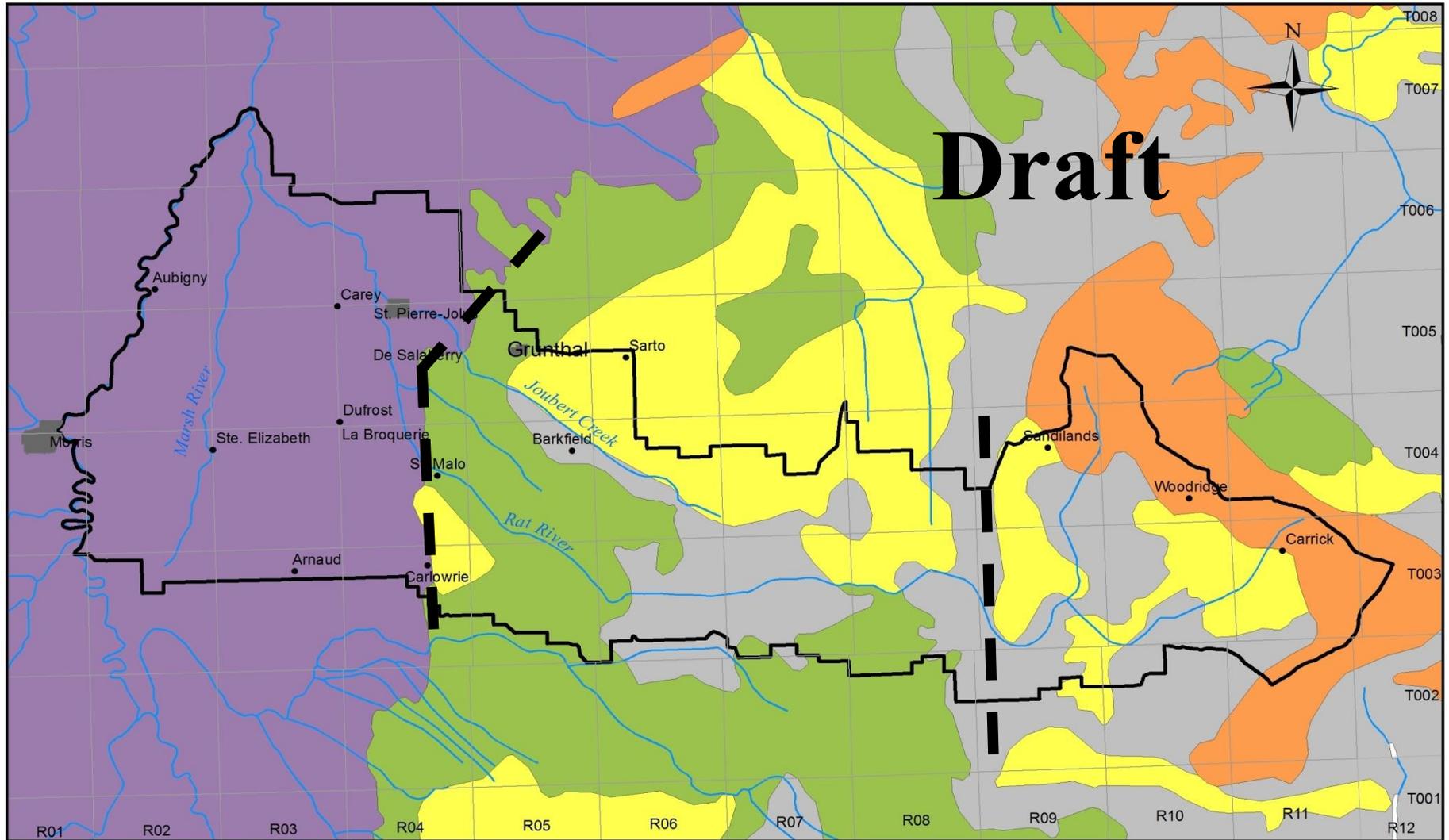
- Community
- ▭ Watershed Boundaries
- ▭ Urban Areas
- ▭ Township Grid
- Eastern Edge of Winnipeg Formation
- Fresh-Water Salt-Water Boundary
- ▭ Fresh Groundwater (TDS < 1000 mg/L)
- ▭ Brackish to Saline Groundwater (TDS > 1000 mg/L)



1:426,000



Rat-Marsh Watershed: Surficial Geology (1:1,000,000)



Legend

- Community
- ▭ Watershed Boundaries
- ▭ Urban Areas
- ▭ Township Grid

Surficial Geology 1:1,000,000

- ▭ Alluvial Deposits
- ▭ Beach Deposits (Marine)
- ▭ Beach and Nearshore Deposits
- ▭ Bedrock
- ▭ Deep Basin Deposits

- ▭ Deltaic Deposits
- ▭ Glaciofluvial Deposits
- ▭ Nearshore and Intertidal Deposits
- ▭ Organic Deposits
- ▭ Till (derived primarily from Paleozoic carbonate rocks)
- ▭ Till (derived primarily from Mesozoic shales)
- ▭ Till (derived primarily from Precambrian bedrock)



1:426,000



Rat-Marsh Watershed Integrated Watershed Management Plan Water Quality Report

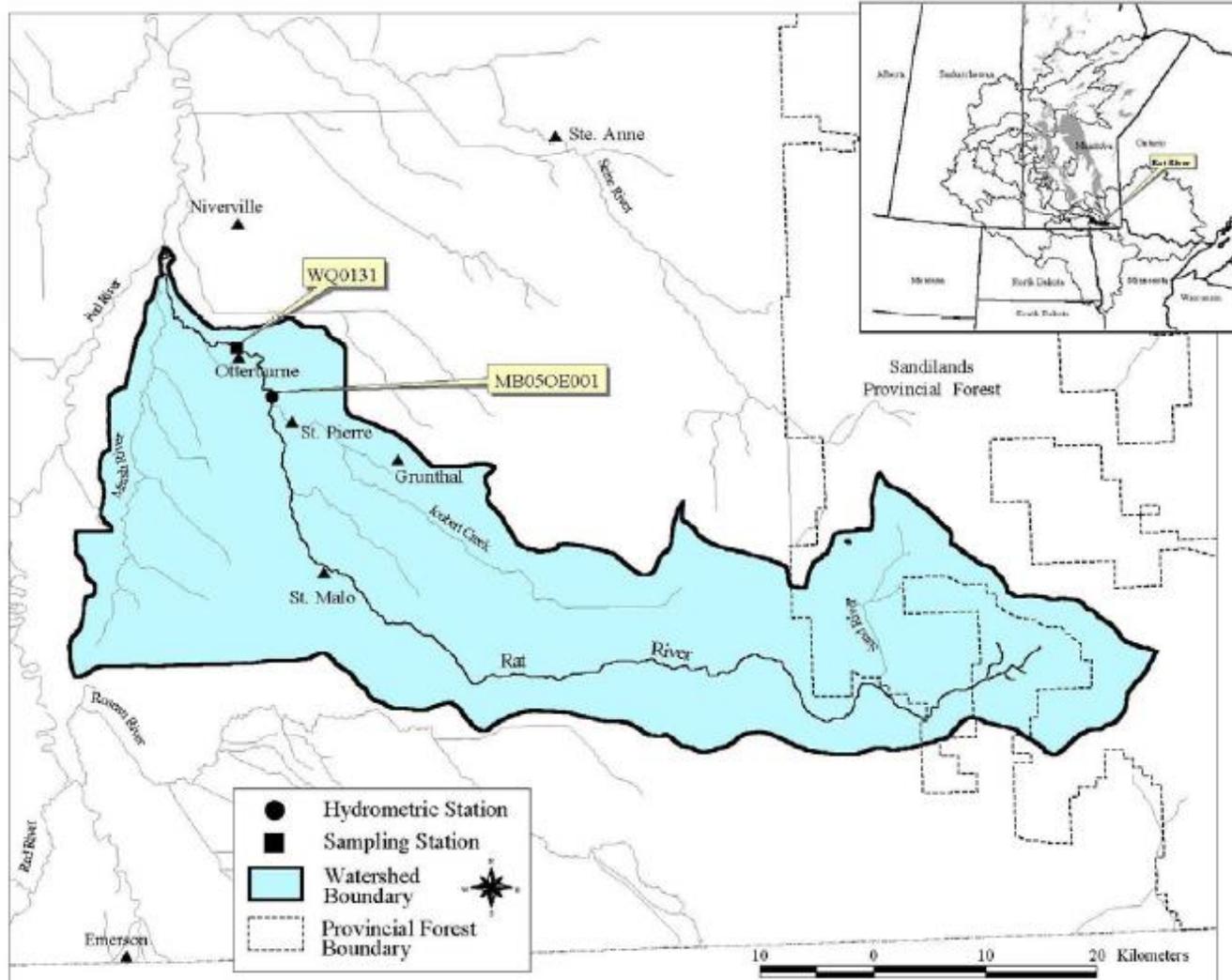
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March 24, 2011
Cassie Leclair

Water Quality Management Section
Manitoba Water Stewardship

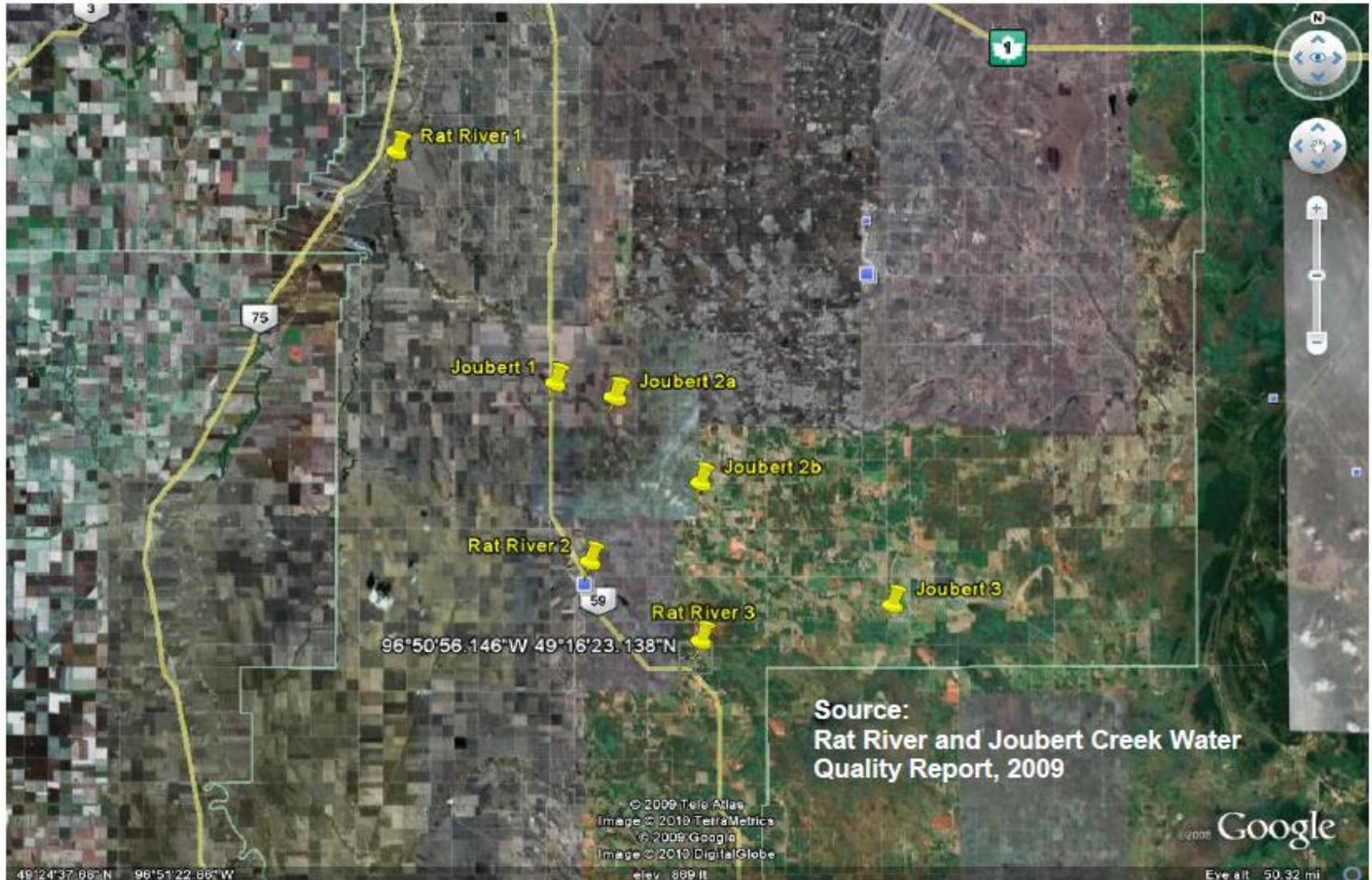
Manitoba



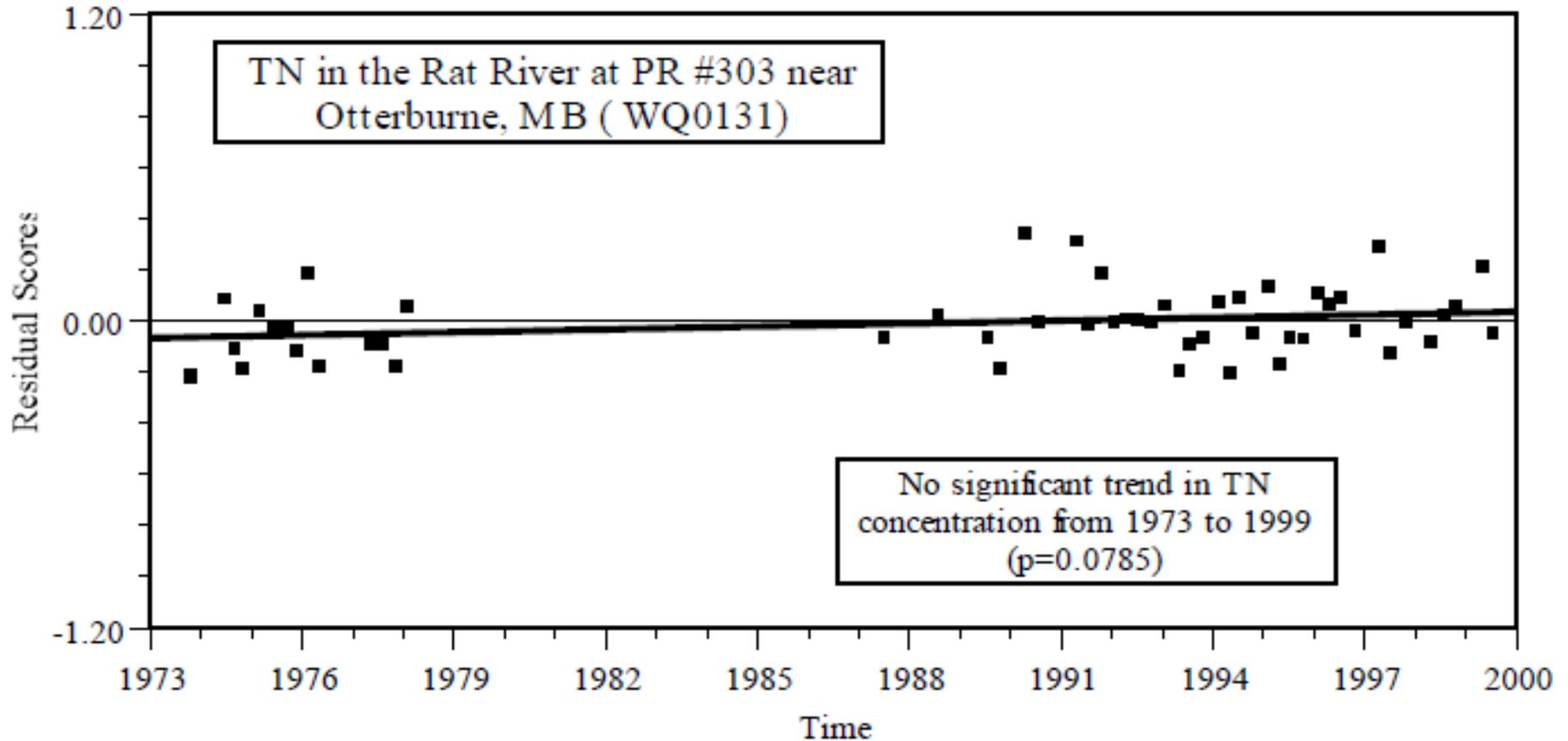
Rat-Marsh Watershed



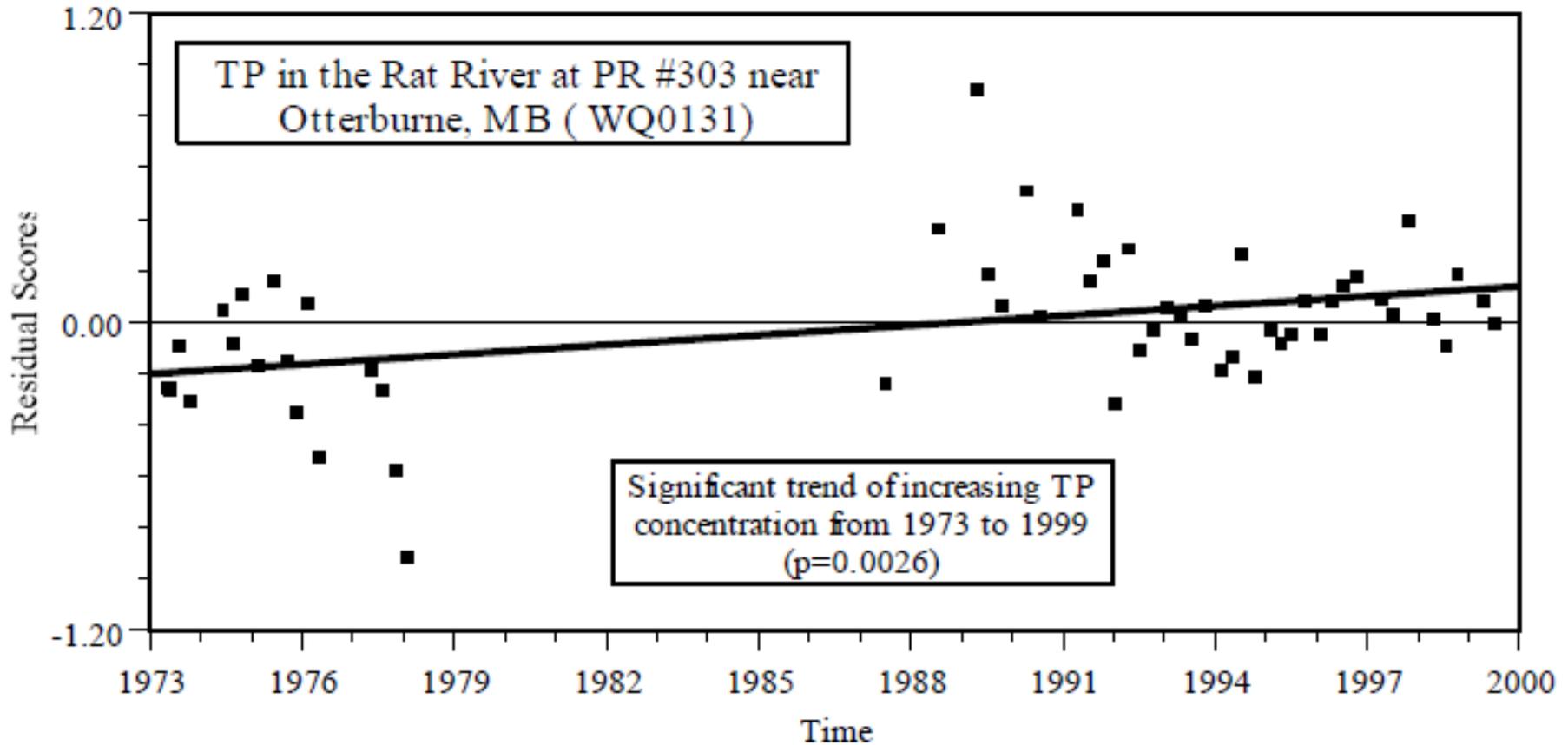
Water Quality Monitoring



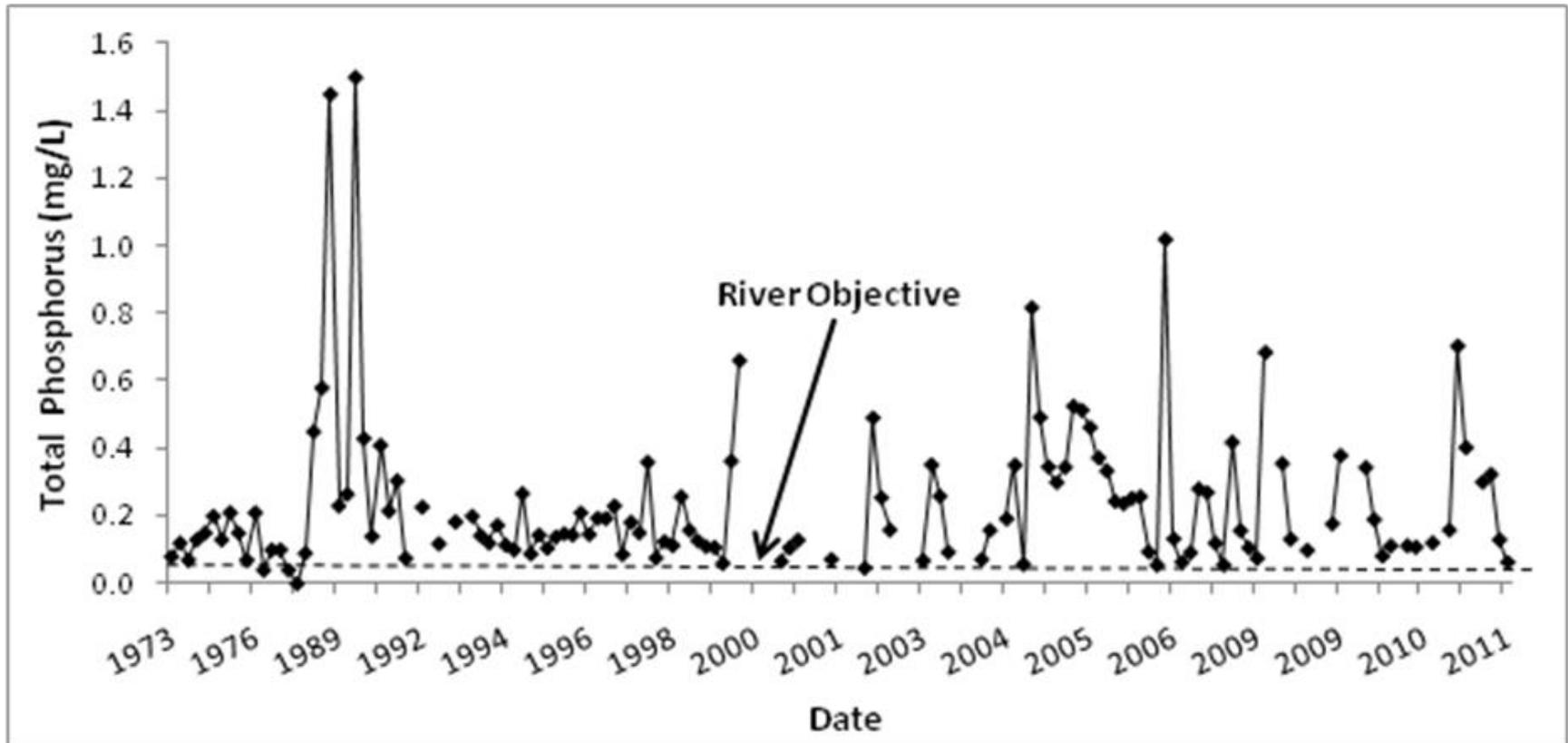
Results – Total



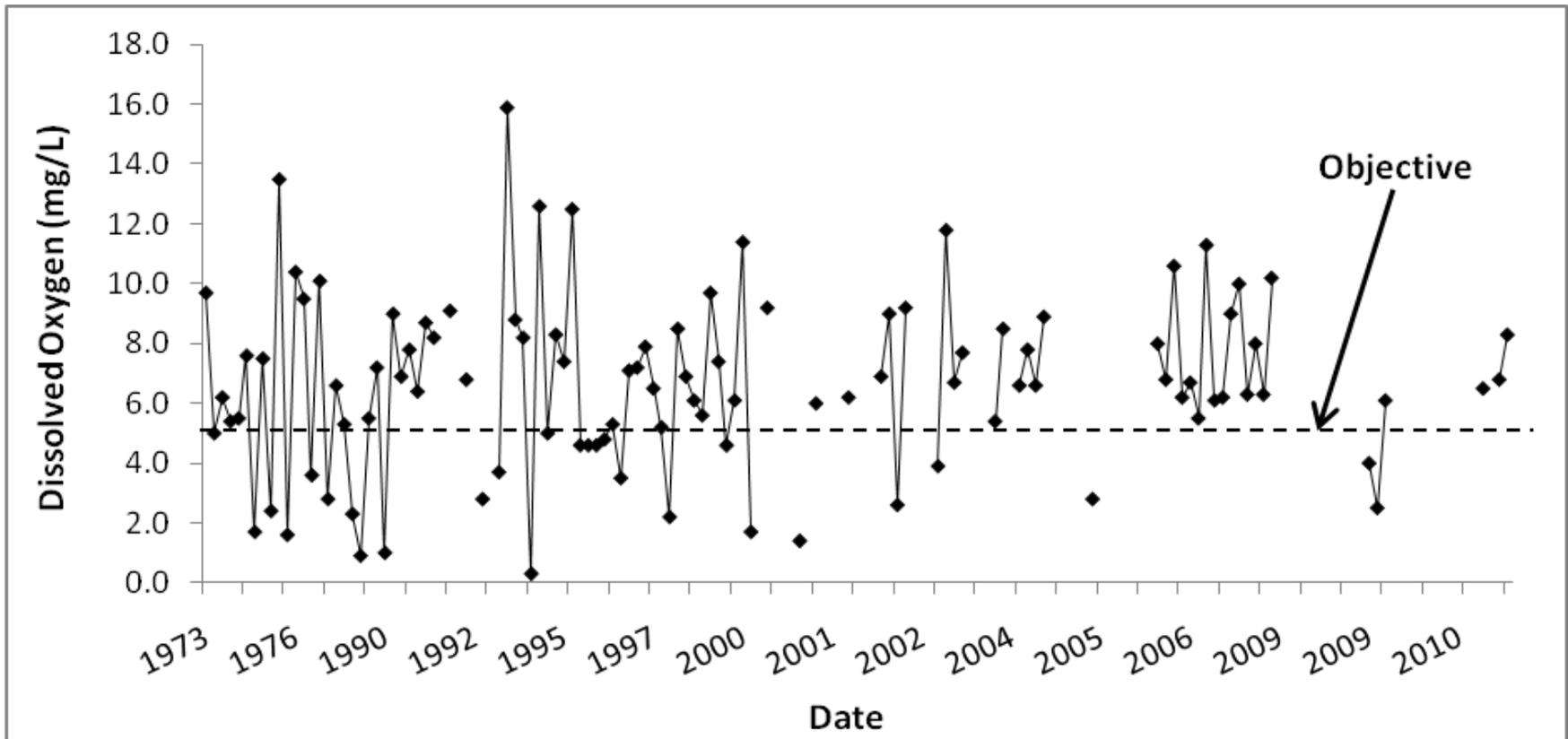
Results – Total Phosphorus



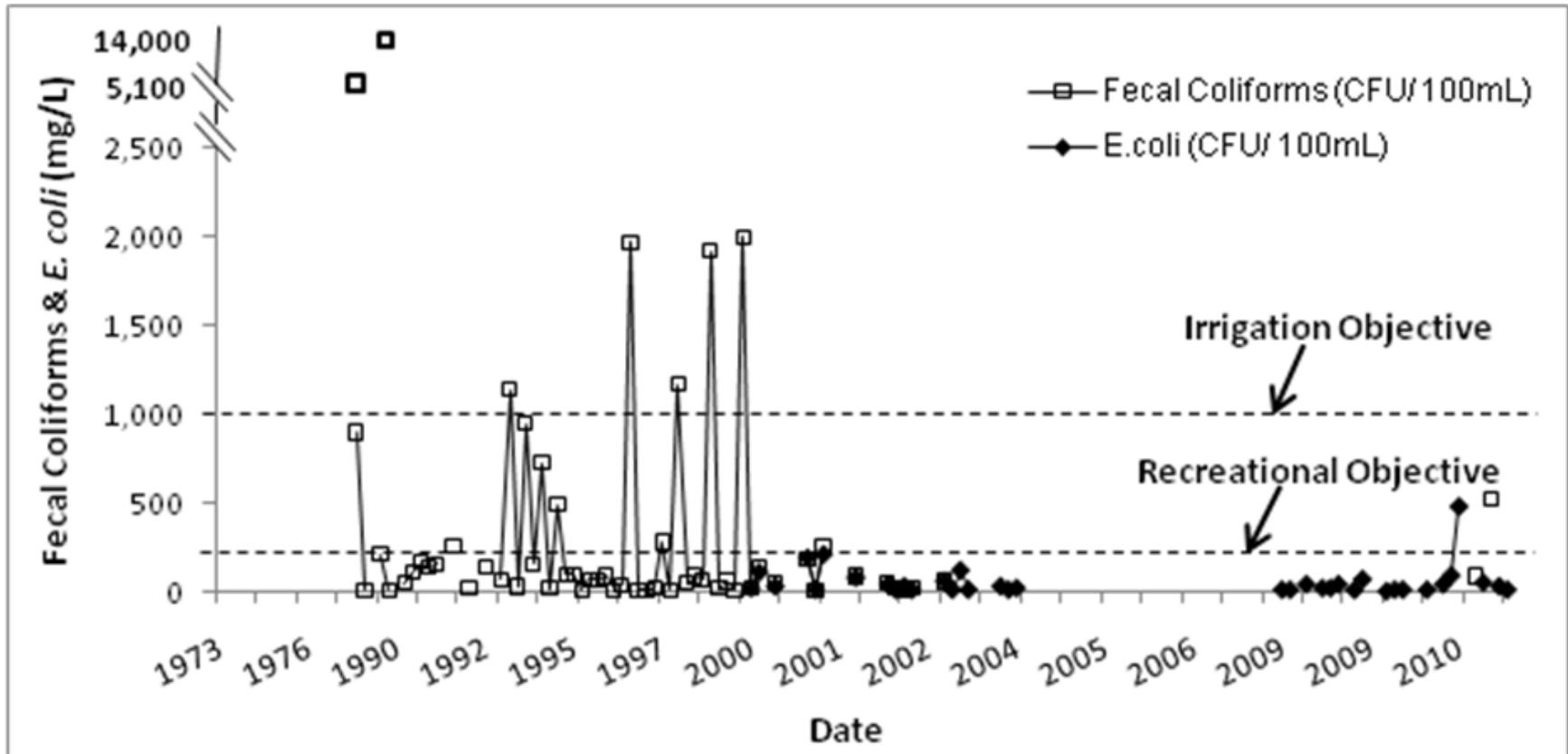
Results – Total Phosphorus



Results – Dissolved Oxygen



Results – Fecal Coliforms & *E. coli*



Results – Other Parameters

- **Total dissolved solids**
 - usually below objective
- **Drinking water parameters**
 - nitrates, arsenic, barium, boron, fluoride, uranium
 - below objective
- **Pesticides**
 - Dicamba, Simazine, MCPA
 - occasionally exceeded the irrigation objectives of 0.006 µg/L, 0.05 µg/L, and 0.025 µg/L, respectively

Rat-Marsh Integrated Watershed Management Plan

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March 24, 2011

Rob Boswick

Environmental Assessment and Licensing
Manitoba Conservation



Name	Legal Address	File Number	EA Licence No. (yr)	System Class	Discharge	Discharge Period
Blumenhof Holding Co. Ltd. and Blumenhof Farms Ltd. (Blue Clay Colony)	SE 9-4-3 EPM	3363.10	1542 (1992)	Small	Irrigation	May 15 th – Sept. 30 th
Crystal Springs Colony	SW 34-6-3 EPM	164.10	2226 R (1996)	Small	Rat River	June 15 th - Oct. 31 st
DeSalaberry, R.M. – Otterburne	NW 24-6-3 EPM	3502.00	1693 (1993)	I	Rat River	June 15 th - Oct. 31 st
DeSalaberry, R.M. – St. Malo	River Lot 94A, St. Malo Settlement	2632.10	2519	I	Rat River	June 15 th - Oct. 31 st
Hanover, R.M. – Grunthal	NW, SW, & SE 20-5-5 EPM	935.00	1940 RR	I	Sarto Creek	June 15 th - Oct. 31 st
Providence College (Winnipeg Bible College)	Lot Q, Plan 6079, Rat River Settlement	167.10	1081 VCO	Small	Rat River	May 15 th – June 1 st Oct. 15 th – Oct. 31 st
St. Pierre, Village	Parcels B/C, Plan 8069, Rat River Settlement	84.10	802VOO	I	Rat River	May 15 th – Oct. 31 st

Heinz Reimer - HyLife

1. What are the threats to your agricultural operations in the Rat-Marsh River watershed?
2. What are some activities that you have incorporated into your land manager practices to protect and/or conserve water?
3. What assistance programs could assist you with long-term environmental stewardship?

Gene Fortney – Nature Conservancy of Canada

1. What is the mandate of the NCC?
2. What is the main interest of NCC in the Rat-Marsh River watershed?
3. What conservation planning are you currently involved in?

Fisheries information in the Rat-Marsh River Watershed

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Doug Leroux
Manitoba Water Stewardship
Fisheries Branch

March 24, 2011



Fish Species

- At least 12 Families are represented with the number of reported species as high as 31.
- The majority of these are non-recreational species (minnows, catfish, suckers etc)
- Notable species are walleye and pike and two SARA/COSEWIC species: Silver Chub and Chestnut Lamprey.

Fisheries Surveys

- North/South Consulting – 2005, Rat River – Joubert Creek.
- Dr. Ken Stewart – 1996 – 2004, Rat River and Joubert Creek.
- D. Milani, Fisheries and Oceans Canada, 2005. Drain Inventory Program.
- Fisheries Branch – 2010, Electrofishing Survey.

Stocking

- Rat River – stocked 11 times from 1956 to 1989 with trout.
- St.Malo Reservoir – stocked 28 times from 1961 – 2010.
 - Mostly Walleye
 - Some trout (rainbow, brook)
 - One record of Largemouth Bass

Potential Threats

- Habitat Loss
 - Barriers to fish movement
 - Flow alteration
 - Riparian loss
 - Landscape changes
 - drainage
- Water quality degradation (point source and non-point source)
- Invasive species

Management Recommendations

- These need to be developed based on stakeholder needs
- Must fit within Fisheries Branch Strategic Plan statements
- Essentially, protect existing fish resources and values.

SMART GOALS

- SPECIFIC
- MEASURABLE
- ATTAINABLE
- REALISTIC
- TIMELY