

Wisconsin Department of Natural Resources SWIMS Project Summary

General Project Information

Project ID: NOR_01_CMP13B

Name: Pokegama, Little Pokegama and Red Rivers 303d Assessment -NOR_01_CMP13B

Type: Competitive Projects

Subtype: Impaired Water Assessment

Status: COMPLETE

Start Date: 07/01/2012

End Date: 04/02/2014

Purpose: This is a 303d assessment of the Pokegama, Little Pokegama and Red Rivers located in the St. Louis AOC. Sampling using WDNR protocols will be done to capture data that is currently lacking in our database to properly classify these streams and make recommendations for upcoming 303d list.

Objective: The Pokegama River originates just over the Minnesota/Wisconsin border and flows nearly 26 miles before discharging into Pokegama Bay on the St. Louis River. The Little Pokegama is just over eight miles in length and flows parallel until it discharges at the upstream end of Spirit Lake on the St. Louis River (St. Louis and Lower Nemadji River Watershed Plan). Although designated as a limited forage fishery (LFF), the Pokegama River has been identified by Pratt (1996) as an important spawning area for walleye, northern pike, longnose and white suckers, burbot and other members of a diverse fishery.

Habitat and water quality are a concern in the Pokegama system. Like most other flashy, red-clay influenced streams in this watershed, deeply cut clay banks and scoured channels are abundant. Suspended clay limits submerged vegetation growth as well as increasing turbidity and sediment deposition. All of these factors are hypothesized to limit fish abundance with lack of fish cover, or habitat, a major concern (St. Louis and Lower Nemadji River Watershed Plan).

Nutrient levels in Pokegama Bay were found to be elevated compared to other areas of the St. Louis River during a baseline evaluation of the St. Louis River Area of Concern in 2010 (see Table 2). The mean reported phosphorus value for Pokegama Bay was 0.093 mg/L, nearly twice the 0.042 mg/L found in Allouez Bay. Bear Creek, a stream with agricultural influences and a mean recorded phosphorus value of 0.14 mg/L is a tributary to Allouez Bay. Also, Hog Island Inlet showed a mean phosphorus value of 0.07 mg/L, 0.023 mg/L less than Pokegama Bay. Newton Creek, a tributary to Hog Island Inlet and discharge of Murphy Oil, had a mean phosphorus value of 0.24 mg/L.

Other areas of the St. Louis AOC have lower phosphorus values than Pokegama Bay even though they have streams flowing into them that have elevated levels of phosphorus. Therefore, the concern is that the Pokegama River is carrying highly elevated levels of phosphorus into Pokegama Bay. A water treatment plant is located on an unnamed tributary (WBIC – 2844200) to the Pokegama River. This tributary receives discharge from the Duluth, Winnipeg and Pacific Railway Switching Yards industrial and sanitary wastewater treatment system (St. Louis and Lower Nemadji River Watershed Plan). If this is one of the sources of elevated phosphorus levels, it should be identified through water chemistry analysis.

The Red River is approximately 7.4 miles in length and has roughly a dozen tributaries. Red clay soils, steep topography, sharply rolling hills, some bank slippage, slumping, and erosion characterize areas in this watershed according to the St. Louis and Lower Nemadji River Watershed Plan. Due to extreme flows this stream is susceptible to bottom scouring. The Lake Superior Binational Program identified this watershed as important to the integrity of the Lake Superior ecosystem for coastal wetlands and contribution to ecosystem integrity.

The Red River's attainable use designation and fisheries classification is a Class I trout stream. Its current use designation is a Class III trout stream which indicates it is not meeting its attainable use. In 2006 and 2008, baseline fish surveys of the Red River and a tributary did not result in sampling any trout. Though 6.3 miles of the Red River is listed as an Exceptional Resource Water (ERW), Epstein (1997) found moderate richness of invertebrate taxa present, but noted significant turbidity, iron bacteria, marl sludge, low flows and bank erosion.

Chem. Hab. Bugs Fish T. Log.

Poke. R. 2 2 2 2 2

Little P. 1 2 2 2 2

Red 2 3 3 3 2

P. Bay 1

Comments: This is a continuing project from 2012. It has 3 main components: sampling the Pokegama system, sampling the Red River system, and sampling Pokegama Bay. Due to the close proximity of the Red River system and the Pokegama

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system, it would be the most efficient use of time and money to do all of this sampling in the same year.

Outcome: The project outcome will identify if the Pokegama, Little Pokegama and Red Rivers should be included on the 2014 303d list update. Bug and fish IBI's will be calculated and continuous temperature data will be used to assess the streams. Also, information about use designation and attainable use will be collected. Information such as flow will be collected for use in the upcoming St. Louis River TMDL. A final report will be written and entered into SWIMS.

People

Name	Role	Status	Start Date	End Date	Organization	Comments
HAGEN, CHERIE L	SUPERVISOR	ACTIVE	07/01/2012	12/31/2013	Wisconsin DNR	
HAYES, JASON M	PROJECT_LEAD	ACTIVE	07/01/2012	12/31/2013	Wisconsin DNR	
LAVIGNE, CLIFFORD R	COORDINATOR	ACTIVE	07/01/2012	12/31/2013	Wisconsin DNR	
Roesler, Craig P	COORDINATOR	ACTIVE	07/01/2012	12/31/2013	Wisconsin DNR	

Project Statuses

Date	Reported By	Status	Comments
03/15/2012	MOLLI MACDONALD	Proposed	
12/06/2012	CLIFFORD LAVIGNE	Progress: 50-75% C	All data has been collected and bugs sent to point. Jason and I are about to start entering data and then will begin a draft of our report. Report cannot be finalized until bug data is returned from point.
01/17/2013	CLIFFORD LAVIGNE	Progress: 50-75% C	We are asking to continue the project through next summer to re-deploy the 5 temp. loggers that were lost during a flood. Preliminary report will still be completed on time and temp. data and bug data will be integrated in the fall of 2013 at which point the project and report will be completed.
10/11/2013	JASON HAYES	Progress: 75-100% C	All data have been collected for this project. The temp loggers that were deployed this year have been retrieved I will be compiling the data and writing the report this winter.
04/03/2014	Craig Roesler	Complete	Final report added to SWIMS

Project Status Detail

Answer Set: DEFAULT

Question	Answer
1. Number of Sample Sites (Enter the station IDs if you know them).	8
2. Number of Sample Events (Indicate how many trips into the field you anticipate for this project).	16
3. Proposed Dates for Sample Collection	May - Sept
4. List applicable databases and who will enter data?	SWIMS
5. Did you receive competitive projects funding in the previous year?	No
6. If yes to question 5, did you complete the projects including data entry and reports as necessary? If not, why not?	
7. Reviewer Notes: Identify questions or issues with project	

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Question	Answer
(use during review period)	
8. Reviewer Decision: Is this project recommended for funding?	Yes

Actions

Action	Detailed Description	Start	End Date	Status
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Monitoring Stations

Station ID	Name	Comments
163207	Little Pokegama River - 3 Mi So Hwy 105	
10015473	Little Pokegama River- Upstream Hwy 105- Station #1	
10029156	Mouth of Bear Creek - Allouez Bay	
10028980	Pokegama Bay - Pokegama River, Site-1	
10028981	Pokegama Bay - Pokegama River, Site-2	
10028982	Pokegama Bay - Pokegama River, Site-3	
10037303	Pokegama River US of RR Tracks	
10032640	Pokegama River at Cemetery Rd., South Superior	
10037522	Red River (approximately 3/4 mile upstream from mouth)	
10029330	Red River north east of railroad just downstream of stateline	
10029329	Red River short distance upstream of unnamed tributary	
10015469	Red River- Walked In North Of Hwy W And Hwy C- Station #1	

Assessment Units

WBIC	Segment	Local Name	Official Name
2834600	1	Bear Creek	Bear Creek
2843800	1	St. Louis River AOC, St. Louis River	Saint Louis River
2844000	2	Pokegama River	Pokegama River
2845200	1	Little Pokegama River	Little Pokegama River
2845800	1	Red River	Red River
2845900	1	Unnamed	Unnamed

Lab Account Codes

Account Code	Description	Start Date	End Date
WT142	303D/TMDL MONITORING	05/03/2011	06/30/2013

Forms

Form Code	Form Name
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Methods

Method Code	Description
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Fieldwork Events

Start Date	Status	Field ID	Station ID	Station Name
06/11/2012 10:00	COMPLETE	LPR-1	10015473	Little Pokegama River- Upstream Hwy 105- Station #1

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Start Date	Status	Field ID	Station ID	Station Name
06/11/2012 12:30	COMPLETE	PR-1	10032640	Pokegama River at Cemetery Rd., South Superior
06/11/2012 12:30	COMPLETE	PR-2	10037303	Pokegama River US of RR Tracks
06/12/2012	COMPLETE	PB-2	10028981	Pokegama Bay - Pokegama River, Site-2
06/12/2012 14:00	COMPLETE	RR-2	10037522	Red River (approximately 3/4 mile upstream from mouth)
06/13/2012 10:30	COMPLETE	RR-1	10015468	Red River- Walk In North Of Intersection Of Hwy W And Hwy C-Station #2
06/25/2012 09:15	COMPLETE	PR-1	10037303	Pokegama River US of RR Tracks
06/25/2012 10:00	COMPLETE	RR-1	10015468	Red River- Walk In North Of Intersection Of Hwy W And Hwy C-Station #2
06/25/2012 11:06	COMPLETE	PR-2	10032640	Pokegama River at Cemetery Rd., South Superior
06/25/2012 11:30	COMPLETE	LPR-1	10015473	Little Pokegama River- Upstream Hwy 105- Station #1
06/25/2012 12:30	COMPLETE	PB-1	10028981	Pokegama Bay - Pokegama River, Site-2
06/25/2012 13:15	COMPLETE	RR-2	10037522	Red River (approximately 3/4 mile upstream from mouth)
07/23/2012 10:30	COMPLETE	RR-2	10029330	Red River north east of railroad just downstream of stateline
07/23/2012 14:00	COMPLETE	AB-1	10028981	Pokegama Bay - Pokegama River, Site-2
07/23/2012 15:00	COMPLETE	PR-1	10032640	Pokegama River at Cemetery Rd., South Superior
07/23/2012 15:00	COMPLETE	RR-1	10037522	Red River (approximately 3/4 mile upstream from mouth)
07/23/2012 15:30	COMPLETE	PR-2	10037303	Pokegama River US of RR Tracks
08/20/2012	COMPLETE	LPR-1	10015473	Little Pokegama River- Upstream Hwy 105- Station #1
08/20/2012	COMPLETE	PB-1	10028981	Pokegama Bay - Pokegama River, Site-2
08/20/2012	COMPLETE	PR-CEM	10032640	Pokegama River at Cemetery Rd., South Superior
08/20/2012	COMPLETE	PR-RR	10037303	Pokegama River US of RR Tracks
08/20/2012	COMPLETE	RR-1	10037522	Red River (approximately 3/4 mile upstream from mouth)
08/20/2012	COMPLETE	RR-US	10029330	Red River north east of railroad just downstream of stateline
09/26/2012 10:30	COMPLETE	PR-1	10037303	Pokegama River US of RR Tracks
09/26/2012 11:00	COMPLETE	RR-1	10015468	Red River- Walk In North Of Intersection Of Hwy W And Hwy C-Station #2
09/26/2012 13:30	COMPLETE	PB-1	10028981	Pokegama Bay - Pokegama River, Site-2
09/26/2012 14:30	COMPLETE	RR-2	10037522	Red River (approximately 3/4 mile upstream from mouth)
09/26/2012 15:00	COMPLETE	PR-1	10032640	Pokegama River at Cemetery Rd., South Superior
09/26/2012 15:15	COMPLETE	LPR	10015473	Little Pokegama River- Upstream Hwy 105- Station #1
10/22/2012	COMPLETE	LPR	10015473	Little Pokegama River- Upstream Hwy 105- Station #1
10/22/2012	COMPLETE	PR-CEM	10032640	Pokegama River at Cemetery Rd., South Superior
10/22/2012	COMPLETE	PR-RR	10037303	Pokegama River US of RR Tracks
10/22/2012	COMPLETE	RR-DS	10037522	Red River (approximately 3/4 mile upstream from mouth)
10/23/2012	COMPLETE	PB-1	10028981	Pokegama Bay - Pokegama River, Site-2
10/23/2012	COMPLETE	RR-US	10015468	Red River- Walk In North Of Intersection Of Hwy W And Hwy C-Station #2

Documents

Title	Description	Author	Published	Comments
Pokegama, Little Pokegama, and Red Rivers Water Quality Assessment and 303d Listing Determination		Jason Hayes	04/02/2014	

Budget

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Budget Description:Phase 2 **Start Date:** 01/01/2013 **End Date:** 06/30/2013

Code	Description	Quantity	Units	Unit Cost	Total Cost	Comments
FTE	FTE Hours		Hours	\$0.00	\$0.00	
LTE SAL	LTE Salary	40	Hours	\$13.00	\$520.00	Re-deploy Temp loggers that were lost in flood and finish habitats
LTE FR	LTE Fringe				\$128.44	
LTE IND	LTE Indirect				\$104.85	
LTE TOT	LTE Total Cost				\$753.29	
SUPPLY	Supplies				\$0.00	
EQUIP	Equipment				\$0.00	
MILEAGE	Mileage	60	Miles	\$0.72	\$43.20	
MEAL	Meals	4	Meals	\$9.00	\$36.00	
LODGE	Lodging				\$0.00	
TRAVEL	Travel Total				\$79.20	
BUG	Bug Contracts				\$0.00	
OTHER	Other Contracts				\$0.00	
USGS	USGS Costs				\$0.00	
TOTAL	Total Cost (excludes SLOH)				\$832.49	

Test Code	Description	Test Group	# Planned	Unit Cost	Total Cost
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Total SLOH Lab Costs: \$0.00

Budget Description:Phase 3 **Start Date:** 07/01/2013 **End Date:** 12/31/2013

Code	Description	Quantity	Units	Unit Cost	Total Cost	Comments
FTE	FTE Hours		Hours	\$0.00	\$0.00	
LTE SAL	LTE Salary	60	Hours	\$13.00	\$780.00	Collect temp. logger, upload to swims. Finish report with bug data and temp data
LTE FR	LTE Fringe				\$192.66	
LTE IND	LTE Indirect				\$157.28	
LTE TOT	LTE Total Cost				\$1,129.94	
SUPPLY	Supplies				\$0.00	
EQUIP	Equipment				\$0.00	
MILEAGE	Mileage	60	Miles	\$0.72	\$43.20	
MEAL	Meals	2	Meals	\$9.00	\$18.00	
LODGE	Lodging				\$0.00	
TRAVEL	Travel Total				\$61.20	
BUG	Bug Contracts				\$0.00	
OTHER	Other Contracts				\$0.00	
USGS	USGS Costs				\$0.00	
TOTAL	Total Cost (excludes SLOH)				\$1,191.14	

Test Code	Description	Test Group	# Planned	Unit Cost	Total Cost
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Total SLOH Lab Costs: \$0.00

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Combined Budgets: \$2,023.63

Combined SLOH: \$0.00

Funding

Organization	Source	Type	Amount	Start Date	End Date
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