

Wisconsin Department of Natural Resources SWIMS Project Summary

General Project Information

Project ID: NOR_09_CMP15 ATTAINS

Name: Bacteria Monitoring in the Marengo River watershed - NOR_09_CMP15

Type: TMDL/303d Projects

Subtype: Identify Impaired Waters

Status: FINAL_RPT

Start Date: 05/01/2015

End Date: 10/30/2015

Purpose: This project will coordinate efforts with the Bad River Watershed Association and the Bad River Department of Natural Resources to conduct widespread monitoring of bacteria in the Marengo River, a class III trout stream that flows into the Bad River in the Lake Superior basin. In some locations of the river, partners and citizens have concerns about negative water quality impacts from raw septage inputs and nonpoint source pollution associated with poor land use. LTE and FTE staff will collect bacteria data on the Marengo River and its tributaries for two months during the summer 2015 field season. The Bad River Tribe's Natural Resources staff (BRNR) will be sampling the Marengo River at Reimer Road and at Government Road this summer. The proposed project will compliment that effort.

Objective: Bacteriological monitoring of the Marengo River and tributaries by the Bad River Watershed Association and the Bad River Natural Resource Dept. has shown high levels of E. coli are often present, especially during runoff events. Since 2007, BRWA has sampled E. coli on 162 sampling events across 20 locations in the Marengo River watershed. E. coli levels exceeded 126 colonies/100 ml on 70 occasions at 12 of those sites. E. coli levels exceeded 1000 colonies on 15 occasions at 7 of those sites. Livestock and residential wastewater systems appear to be the sources. The objective of this project is to conduct additional bacteria monitoring consistent with NR 102 to determine if water quality standards are being exceeded, and if so, to consider adding a section of the river to the 303d list of impaired waters. Three sites will be sampled on the Marengo River and its tributaries. Samples will be tested for both fecal coliforms and E. coli to help establish a local relationship between the two tests, and to allow better utilization and assessment of past E. coli test results available. Field tests will include conductivity, dissolved oxygen, temperature, and transparency.

Comments: New project to be conducted in summer 2015.

Outcome: If sampling shows that the Marengo River exceeds the WisCALM standards for water quality (bacteria), it will be considered for inclusion on the next cycle of 303d impaired waters list updates. Data will be compiled and analyzed and a final report will be entered into SWIMS. This project will build a coalition of supporters to address bacteria contamination in the Marengo River watershed among the Bad River Tribe, Bayfield County, the BRWA and their members, and the WDNR. This broad support will encourage local action to address any concerns that are found.

Study Design: Sampling frequency was determined in order to satisfy requirements in NR 102, which states that samples are required at least 5 times per month. Fecal coliform, E. coli, temperature, transparency, DO, pH and conductivity will be monitored at all sites during two months from May to September 2015, with special attention to runoff events. Other parameters will be sampled during field events with a multi parameter probe. Site selection was informed by previous data collected in the Marengo River watershed and by partner concerns. Monitoring sites are distributed throughout the lower reaches of the Marengo River, and on tributaries where there may be potentially impacted sites. Rationale for sampling and potential sampling locations are listed below.

1. BRWA and BRNR have recorded high levels of E. coli in an unnamed tributary near the Village of Marengo - SITE 10033482: Marengo River at Ensinger Rd. (downstream of R.R. tracks)
2. Bayfield County Zoning contacted the WDNR in 2014 about possible drainage from septic tanks into an unnamed tributary of the river and concerns about possible well contamination and human illness - SITE10030744: Unnamed tributary and County E near Four corners Store Road
3. Expansion of dairy operation in the Trout Brook watershed SITE 10022077: Trout Brook Cty C.

QA Measures:

People

Name	Role	Status	Start Date	End Date	Organization	Comments
AARTILA, THOMAS P	SUPERVISOR	ACTIVE	07/01/2015	06/30/2017	Wisconsin DNR	
HAGEN, CHERIE L	SUPERVISOR	ACTIVE	07/01/2015	06/30/2017	Wisconsin DNR	
HAYES, JASON M	TEAM_MEMBER	ACTIVE	05/01/2015	10/30/2015	Wisconsin DNR	
WHEELER, MICHELE C	PROJECT_LEAD	ACTIVE	05/01/2015	06/30/2017	Wisconsin DNR	

Project Statuses

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Date	Reported By	Status	Comments
01/30/2015	MICHELE WHEELER	Proposed	Proposed as a local needs project
06/06/2016	MICHELE WHEELER	Complete	See final report uploaded to swims for project summary

Actions

Action	Detailed Description	Start	End Date	Status
Monitor Aquatic Biology	Bacteriological monitoring of the Marengo River and tributaries by the Bad River Watershed Association and the Bad River Natural Resource Dept. has shown high levels of E. coli are often present, especially during runoff events. Since 2007, BRWA has sampled E. coli on 162 sampling events across 20 locations in the Marengo River watershed. E. coli levels exceeded 126 colonies/100 ml on 70 occasions at 12 of those sites. E. coli levels exceeded 1000 colonies on 15 occasions at 7 of those sites. Livestock and residential wastewater systems appear to be the sources. The objective of this project is to conduct additional bacteria monitoring consistent with NR 102 to determine if water quality standards are being exceeded, and if so, to consider adding a section of the river to the 303d list of impaired waters. Three sites will be sampled on the Marengo River and its tributaries.	04/01/2011		COMPLETE
Monitor Water Quality or Sediment	Bacteriological monitoring of the Marengo River and tributaries by the Bad River Watershed Association and the Bad River Natural Resource Dept. has shown high levels of E. coli are often present, especially during runoff events. Since 2007, BRWA has sampled E. coli on 162 sampling events across 20 locations in the Marengo River watershed. E. coli levels exceeded 126 colonies/100 ml on 70 occasions at 12 of those sites. E. coli levels exceeded 1000 colonies on 15 occasions at 7 of those sites. Livestock and residential wastewater systems appear to be the sources. The objective of this project is to conduct additional bacteria monitoring consistent with NR 102 to determine if water quality standards are being exceeded, and if so, to consider adding a section of the river to the 303d list of impaired waters.	05/01/2015	10/30/2015	PROPOSED

Monitoring Stations

Station ID	Name	Comments
10043557	Marengo R DS STH 13 and DS WBIC 3000115	
10033482	Marengo River at Hwy 13	
10022077	Trout Brook-County Hwy C	Downstream end of Trout Brook. Expansion of dairy o
10043804	Unnamed Trib (2919600) 100 ft DS Cty E	
10043805	Unnamed Trib (2919700) 100 ft US of Mouth	

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Station ID	Name	Comments
10043556	Unnamed Trib (WBIC 2919600) 200 ft DS CTH E	
10030744	Unnamed tributary to Marengo River - 10 m upstream Argo Road - Station #1	

Assessment Units

WBIC	Segment	Local Name	Official Name
2911900	2	Marengo River	Marengo River
2913900	1	Trout Brook	Trout Brook
2919600	1	Unnamed Trib to Marengo R	Unnamed
2919700	1	Marengo River Trib (S9)	Unnamed

Lab Account Codes

Account Code	Description	Start Date	End Date
WQ015	LOCAL NEEDS PROJECTS	04/22/2015	10/30/2015

Forms

Form Code	Form Name
FIELD CHEMISTRY FO	Field Chemistry Form

Methods

Method Code	Description
GRAB SAMPLE	Water Grab Sample Guidelines and Procedures 2005

Fieldwork Events

Start Date	Status	Field ID	Station ID	Station Name
05/06/2015 09:29	COMPLETE	MAR TB CTY C	10022077	Trout Brook-County Hwy C
05/06/2015 09:54	COMPLETE	MAR VILLAGE	10043557	Marengo R DS STH 13 and DS WBIC 3000115
05/06/2015 10:16	COMPLETE	MAR CTY E	10043556	Unnamed Trib (WBIC 2919600) 200 ft DS CTH E
05/07/2015	COMPLETE	MAR E	10043556	Unnamed Trib (WBIC 2919600) 200 ft DS CTH E
05/07/2015	COMPLETE	TROUTBROOK	10022077	Trout Brook-County Hwy C
05/07/2015 08:30	COMPLETE	MAR RIVER	10043557	Marengo R DS STH 13 and DS WBIC 3000115
05/20/2015 09:40	COMPLETE	TROUTBROOK	10022077	Trout Brook-County Hwy C
05/20/2015 10:00	COMPLETE	MARRIVER	10043557	Marengo R DS STH 13 and DS WBIC 3000115
05/20/2015 10:20	COMPLETE	MARE	10043556	Unnamed Trib (WBIC 2919600) 200 ft DS CTH E
05/27/2015 09:55	COMPLETE	TROUT BROOK	10022077	Trout Brook-County Hwy C
05/27/2015 10:07	COMPLETE	MAR RIVER	10043557	Marengo R DS STH 13 and DS WBIC 3000115
05/27/2015 10:30	COMPLETE	MAR E	10043556	Unnamed Trib (WBIC 2919600) 200 ft DS CTH E
05/28/2015 11:45	COMPLETE	TROUTBROOK	10022077	Trout Brook-County Hwy C
05/28/2015 12:00	COMPLETE	MARRIVER	10043557	Marengo R DS STH 13 and DS WBIC 3000115
05/28/2015 12:19	COMPLETE	MARE	10043556	Unnamed Trib (WBIC 2919600) 200 ft DS CTH E
07/23/2015	COMPLETE	4CORNERTRIB	10043805	Unnamed Trib (2919700) 100 ft US of Mouth
07/23/2015	COMPLETE	MARVILLAGE	10043557	Marengo R DS STH 13 and DS WBIC 3000115
07/23/2015	COMPLETE	TROUTBR	10022077	Trout Brook-County Hwy C
07/23/2015 13:00	COMPLETE		10022077	Trout Brook-County Hwy C
07/27/2015 12:55	COMPLETE	TROUT BR	10022077	Trout Brook-County Hwy C
07/27/2015 13:27	COMPLETE	MARVILLAGE	10043557	Marengo R DS STH 13 and DS WBIC 3000115
07/27/2015 14:08	COMPLETE	4 CORNER	10043805	Unnamed Trib (2919700) 100 ft US of Mouth

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Start Date	Status	Field ID	Station ID	Station Name
08/03/2015 12:35	COMPLETE	TROUTBR	10022077	Trout Brook-County Hwy C
08/03/2015 12:57	COMPLETE	MAR VILLAGE	10043557	Marengo R DS STH 13 and DS WBIC 3000115
08/03/2015 13:28	COMPLETE	4 CORN	10043805	Unnamed Trib (2919700) 100 ft US of Mouth
08/06/2015 11:22	COMPLETE	NA	10022077	Trout Brook-County Hwy C
08/06/2015 11:42	COMPLETE	NA	10043557	Marengo R DS STH 13 and DS WBIC 3000115
08/06/2015 12:02	COMPLETE	NA	10043805	Unnamed Trib (2919700) 100 ft US of Mouth
08/10/2015 12:05	COMPLETE	TROUTBR	10022077	Trout Brook-County Hwy C
08/10/2015 12:23	COMPLETE	MARVILLAGE	10043557	Marengo R DS STH 13 and DS WBIC 3000115
08/10/2015 12:42	COMPLETE	4CORN	10043805	Unnamed Trib (2919700) 100 ft US of Mouth

Documents

Title	Description	Author	Published	Comments
Bacteria Monitoring in the Marengo River watershed - NOR_09_CMP15	Bacteria Monitoring in the Marengo River watershed - NOR_09_CMP15	WDNR	02/01/2015	
Marengo River Photo WBIC 2921100	Marengo River Photo WBIC 2921100	Online	04/14/2018	
MarengoEcolisamplingReport2015	Report of E. coli sampling in the Marengo River and its tributaries in 2015	Jason Hayes	06/07/2016	

Budget

Budget Description: Marengo 2015 bacteria monitoring **Start Date:** 05/01/2015 **End Date:** 10/30/2015

Code	Description	Quantity	Units	Unit Cost	Total Cost	Comments
FTE	FTE Hours	60	Hours	\$29.65	\$1,779.00	Sample collection during one month, project management
LTE SAL	LTE Salary	60	Hours	\$15.00	\$900.00	Sample collection during one month and project preparation/management
LTE FR	LTE Fringe				\$222.30	
LTE IND	LTE Indirect				\$181.48	
LTE TOT	LTE Total Cost				\$1,303.78	
SUPPLY	Supplies	10		\$60.00	\$600.00	Sample shipping
EQUIP	Equipment	1		\$500.00	\$500.00	
MILEAGE	Mileage	850	Miles	\$0.62	\$527.00	
MEAL	Meals	5	Meals	\$10.00	\$50.00	
LODGE	Lodging				\$0.00	
TRAVEL	Travel Total				\$577.00	
BUG	Bug Contracts				\$0.00	
OTHER	Other Contracts				\$0.00	
USGS	USGS Costs				\$0.00	
TOTAL	Total Cost (excludes SLOH)				\$4,759.78	

Test Code	Description	Test Group	# Planned	Unit Cost	Total Cost
Total SLOH Lab Costs:				\$0.00	
Total Budget:				\$4,759.78	

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Combined Budgets: \$4,759.78
Combined SLOH: \$0.00
Combined Total: \$4,759.78

Funding

Organization	Source	Type	Amount	Start Date	End Date
Great Lakes National Program Office	Federal	CWA 106 Grant	\$13,925.00	05/01/2015	10/30/2015