

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: | COMPLETE |
| 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 sewage 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. <ol style="list-style-type: none"> 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 | COMPLETE | 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 | COMPLETE | 05/01/2015 | 06/30/2017 | Wisconsin DNR | |

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Project Statuses

| 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 | |

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| Station ID | Name | Comments |
|------------|---|---|
| 10022077 | Trout Brook-County Hwy C | Downstream end of Trout Brook. Expansion of dairy c |
| 10043804 | Unnamed Trib (2919600) 100 ft DS Cty E | |
| 10043805 | Unnamed Trib (2919700) 100 ft US of Mouth | |
| 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 | 3 | 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 FOI | 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 |

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| Start Date | Status | Field ID | Station ID | Station Name |
|------------------|----------|-------------|------------|---|
| 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 |
| 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 | |
| LTE FR | LTE Fringe | | | | \$222.30 | Sample collection during one month and project preparation/management |
| 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 |
|-----------|-------------|------------|-----------|-----------|------------|
|-----------|-------------|------------|-----------|-----------|------------|

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Total SLOH Lab Costs: \$0.00
Total Budget: \$4,759.78

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 |