

Wisconsin Department of Natural Resources SWIMS Project Summary

General Project Information

Project ID:	SCR_02_CMP10
Name:	Black Earth Creek Monitoring Project SCR02_10 (USGS # BQY43)
Type:	Targeted Monitoring
Subtype:	Watershed Project
Status:	ACTIVE
Start Date:	07/01/2009
End Date:	06/30/2010
Purpose:	Black Earth Creek experienced a major fish kill in 2001. Following the kill, the trout population rebounded, but then has been declining during the last couple years to about half of it's peak density. Managers suspect periodic fish kills due to manure runoff, but need to gather water quality data during storm events to confirm this suspicion. This monitoring effort will provide a real time assessment tool that will instantaneously notify resource managers when runoff conditions and chemical parameters threaten the stream with excessive nonpoint source pollution.
Objective:	<p>The overall objective of the study is to monitor long term water quality trends on BEC and attempt to determine potential water quality parameters that may lead to a decline in fish populations. Data should be collected year round and viewable via the web on a real-time basis. Discharge and water quality data will be published annually in the Wisconsin Water Science Center's annual data report. Regression equations to predict real-time water quality concentrations from water quality sonde data and water quality samples will be evaluated annually to determine the feasibility of establishing an alert system. In order to describe the water quality parameters that occur along Black Earth Creek, multiple monitoring locations are needed. For this study, four monitoring locations are proposed and can be found on figure 1. Currently there is an operating stream-gaging station (station number 05406460, February 1954 to present) on BEC downstream of South Valley Rd that is collecting water level and discharge data. An additional gage will be installed downstream of the current gage to add the additional continuous water quality monitoring sonde and automated sampling equipment. The second monitoring location includes an installation of a new gage at County Highway P for discharge, automated water quality sampling, and continuous water quality. The third and fourth monitoring locations include the installation of two remote continuous water-quality data sondes for real-time monitoring between County Highway P and the BEC streamgage at Black Earth. Potential sites include Hwy 14 below the sewage treatment plant and Scherbel Rd, below confluence of Garfoot Creek.</p> <p>The principle needs that the monitoring would address, as described by the Wisconsin DNR (WDNR), are to identify water chemistry conditions that may be limiting trout populations. As part of this study, a determination will be made as to the feasibility of establishing an alert system that would use real-time water chemistry parameters to indicate when stream conditions may potentially induce a fish kill. This alert system would notify the WDNR and other organizations to activate management plans to reduce the impact on the fisheries resource.</p> <p>This project collect and analyze water quality data sondes at two locations along BEC to help identify areas of water chemistry changes. These sites would use regressions to estimate the discharge (non-published) between the site locations and the active streamgages located on BEC. Manual EWI samples will be collected during base flow and periods of storm runoff. These samples will be used in the development of the regression analyses to predict real-time constituent concentrations from the water quality sonde data and water quality samples.</p>
Comments:	This is a partnership with Dane County Land and Watershed Resources Dept., USGS, and WDNR (FH/WT). Currently, the partners have secured over \$90,000 dollars towards the project. The breakdown includes: USGS \$50,000 Dane County \$35,180 and DNR FH \$16,000.
Outcome:	<p>NPS continues to be the limiting factor affecting our cold water resources in Dane County. This will help the county in further developments to CH 14 "Manure Management".</p> <p>Scope of Work for USGS component of Study</p> <ol style="list-style-type: none"> 1. Install and maintain automated water quality sampling equipment and water quality data sonde at four locations. 2. Monitor and compute annual discharge at the County Highway P location. 3. Collect base flow samples as well as coefficient samples to ensure adequate data coverage and quality. 4. Store and publish data collected by water quality monitors. 5. Provide data access via the web to cooperating partners. 6. Begin development of regression equations to predict real-time water quality concentrations from water quality sonde data and water quality samples.
Study Design:	
QA Measures:	

People

Wisconsin Department of Natural Resources SWIMS Project Summary

Name	Role	Status	Start Date	End Date	Organization	Comments
MORTON, JAMES A	COORDINATOR	ACTIVE	07/01/2009	06/30/2010	Wisconsin DNR	
SORGE, MICHAEL J	TEAM_MEMBER	ACTIVE	07/01/2009	06/30/2010	Wisconsin DNR	
UNMUTH, JEAN M	TEAM_MEMBER	COMPLETE	07/01/2009	06/30/2010	Wisconsin DNR	

Project Statuses

Date	Reported By	Status	Comments
01/24/2011	MICHAEL SORGE	Progress: 50-75% Complete	<p>This has been an on-going water quality monitoring project. This is a co-op effort between WDNR, USGS, Dane County LCD, and Village of Cross Plains. All equipment has been in and operational since November of 2009.</p> <p>Real-time water quality data collected via YSI Sondes at four locations is currently available on the USGS web site. Water Chemistry data has been collected for the past year and a half. Water chemistry samples have been collected at all four locations. Sample analysis has been done by SLOH. We have stayed within our allocated budget and have not over spent. USGS is currently working on the necessary regression analysis. This is "Key" to help with the "alert triggering" when water quality criteria/triggers are potentially threatening fish and aquatic life.</p> <p>USGS has prepared several power point presentations and will be presenting this project at the 2011 AWRA statewide. Matt Kominsky is the main contact at USGS for this project and will be the one presenting at AWRA this spring.</p> <p>Anglers and Watershed groups are currently providing great feed-back on the usage of the real-time data via the web.</p> <p>Macroinvertebrates were collected during the fall of 2010 at 4 locations. Samples were preserved and transported to UWSP for analysis by Jeff Dimick.</p>
06/06/2012	MICHAEL SORGE	Progress: 75-100% Complete	<p>This is an ongoing project. Samples were collected and analyzed at the SLOH. USGS has generated some of the necessary statistics for the regression analysis. We did not get any "Major" storm events, this is one of the missing data points for the regression analysis. Macroinvertebrates were collected and sent to UWSP, results are not back yet from Stevens Point Bug lab.</p>
07/18/2012	MICHAEL SORGE	Progress: 75-100% Complete	<p>This project is still ongoing. With the drought conditions that we have experienced for the past 60 days our large event samples are not happening. Regressions are complete for small to medium size events. Bug results are not back from UWSP.</p>
08/10/2012	MICHAEL SORGE	Progress: 75-100% Complete	<p>This project is still ongoing. Samples are still being collected during the storm event periods. Drought conditions have limited the number of samples collected during the summer of 2012.</p>
01/04/2017	MICHAEL SORGE	Complete	<p>Project funding was ended prior to reporting of USGS final reporting. Since no funding was allocated to USGS for a Final Report, data was not analyzed and USGS did not provide a summary report of all data. This was unfortunate, but the analysis and reporting project costs were not approved by the PMT and Tech Teams.</p>

Project Status Detail

Answer Set: DEFAULT

Wisconsin Department of Natural Resources SWIMS Project Summary

Question

Answer

- | | |
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| 1. Project Category (SP 12 (Measure W); 303(d) Waters; Continuation (TMDL, Use Designation); New Projects; Wetlands, CBSM | New Project |
| 2. Regional Priority by Category (ex: SP12-1, SP12-2, etc.) | Various, TierII, High Priority with SCR Management Team. |
| 3. Number of Sample Sites (Enter the station IDs if you know them). | Four different stations, don't have established stations for all four. |
| 4. Number of Sample Events (Indicate how many trips into the field you anticipate for this project). | A total of 194 total samples at four different sites. These include runoff samples, base flow, and EWI samples. |
| 5. Proposed Dates for Sample Collection | 7/1/2009-6/30/2010 |
| 6. List applicable databases and who will enter data? | Data will be entered for Chemistry Samples at SLOH and results uploaded to SWIMS. The continuous (ph, Cond, DO, NH3) will be on USGS web site and uploaded to SWIMS. This will be a real-time link for the four stations. |
| 7. FTE Hours (Funds) Needed | 100 |
| 8. LTE Hours (Funds) Needed | 0 |
| 9. Supplies - Describe in Detail | N/A |
| 10. Describe Travel Needed | N/A |
| 11. UWSP Macroinvertebrate Samples (How Many?) | 4 samples for both years. (4x150=600) |
| 12. Additional Contractual dollars - Who? What? and How much? | \$10,000 For contract with USGS |
| 13. Equipment - What is needed and Why? (New Equipment, Cost?) | None |
| 14. Capital Equipment >\$5,000 - Describe needed equipment [Note: Federal funds cannot be used to purchase capital equipment]. | None, Dane County bought all of it. |
| 15. State Lab of Hygiene Analyses: Describe the number, type of parameters - See Worksheet | 194 samples (SS,Chloride, Ammonium) Total of \$11,816.54. |
| 16. Partner Contributions: Describe any funding provided by other DNR programs or non-DNR contributions. | USGS- \$50,000
Dane County- \$35,180
WDNR FH- \$16,000
For a total in YR1 of \$91,180 |
| 17. Total Year 1 (Please itemize: \$LTE + \$SLOH + \$Equipment + \$Travel + \$UWSP Lab + \$Other) = _____ | (0+\$11.816.54+0+0+600+10,000)=\$22,416.54 |
| 18. Total Year 2 (Please itemize: \$LTE + \$SLOH + \$Equipment + \$Travel + \$UWSP Lab + \$Other) = _____ | \$22.416.54 |
| 19. Project Total (Please itemize: \$LTE + \$SLOH + \$Equipment + \$Travel + \$UWSP Lab + \$Other) = _____ | \$44,833.08 |
| 20. Additional Comments | |
| 21. Did you receive special projects funding during FY 2009? | Yes |
| 22. If yes to question 17, did you complete the projects including data entry and reports? If not, why not? | YES, Waiting on Macroinvertebrate Data. |
| 23. Reviewer Notes: Identify questions or issues with project (use during review period) | |
| 24. Reviewer Decision: Is this project recommended for funding? | |

Actions

Action	Detailed Description	Start	End Date	Status
Monitor Water Quality or Sediment	Black Earth Creek	07/01/2009	06/30/2010	IN_PROGRESS

Monitoring Stations

Station ID	Name	Comments
10010841	Black Earth Creek - Bec-5-Riffle Below Habitat Work To S. Valley Rd.	

Wisconsin Department of Natural Resources SWIMS Project Summary

Station ID	Name	Comments
10030694	Black Earth Creek Brewery Rd Snowmobile bridge crossing	
10030695	Black Earth Creek Dwnstrm of Cross Plains WWTP at STH 14	
133398	Black Earth Creek at Town Rd At Black Earth WI	

Assessment Units

WBIC	Segment	Local Name	Official Name
1248600	2	Black Earth Creek	Black Earth Creek
1248600	3	Black Earth Creek	Black Earth Creek
1248600	5	Black Earth Creek	Black Earth Creek

Lab Account Codes

Account Code	Description	Start Date	End Date
WT107	Watershed Special Projects	05/27/2009	06/30/2010

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
05/13/2010 08:50	COMPLETE	BEC3-1-S9	10010841	Black Earth Creek - Bec-5-Riffle Below Habitat Work To S. Valley Rd.
06/05/2010 19:50	COMPLETE	BEC1-1-S10	10030694	Black Earth Creek Brewery Rd Snowmobile bridge crossing
06/05/2010 22:50	COMPLETE	BEC4-1-S10	133398	Black Earth Creek at Town Rd At Black Earth WI
06/05/2010 23:10	COMPLETE	BEC1-2-S10	10030694	Black Earth Creek Brewery Rd Snowmobile bridge crossing
06/06/2010 02:30	COMPLETE	BEC1-3-S10	10030694	Black Earth Creek Brewery Rd Snowmobile bridge crossing
06/06/2010 02:50	COMPLETE	BEC4-2-S10	133398	Black Earth Creek at Town Rd At Black Earth WI
06/06/2010 06:50	COMPLETE	BEC4-3-S10	133398	Black Earth Creek at Town Rd At Black Earth WI
06/23/2010 07:50	COMPLETE	BEC4-1-S11	133398	Black Earth Creek at Town Rd At Black Earth WI
06/23/2010 08:10	COMPLETE	BEC2-1-S11	10030695	Black Earth Creek Dwnstrm of Cross Plains WWTP at STH 14
06/23/2010 08:25	COMPLETE	BEC3-1-S11	10010841	Black Earth Creek - Bec-5-Riffle Below Habitat Work To S. Valley Rd.
06/23/2010 08:30	COMPLETE	BEC4-2-S11	133398	Black Earth Creek at Town Rd At Black Earth WI
06/23/2010 09:35	COMPLETE	BEC4-3-S11	133398	Black Earth Creek at Town Rd At Black Earth WI
06/23/2010 12:45	COMPLETE	BEC1-3-S11	10030694	Black Earth Creek Brewery Rd Snowmobile bridge crossing
06/23/2010 13:35	COMPLETE	BEC4-4-S11	133398	Black Earth Creek at Town Rd At Black Earth WI
06/23/2010 16:05	COMPLETE	BEC1-4-S11	10030694	Black Earth Creek Brewery Rd Snowmobile bridge crossing
11/10/2010	COMPLETE	20101110-13-01	133398	Black Earth Creek at Town Rd At Black Earth WI
11/10/2010	COMPLETE	20101110-13-02	10010841	Black Earth Creek - Bec-5-Riffle Below Habitat Work To S. Valley Rd.
11/10/2010	COMPLETE	20101110-13-03	10030695	Black Earth Creek Dwnstrm of Cross Plains WWTP at STH 14
11/10/2010	COMPLETE	20101110-13-04	10030694	Black Earth Creek Brewery Rd Snowmobile bridge crossing

Documents

Wisconsin Department of Natural Resources SWIMS Project Summary

Title	Description	Author	Published	Comments
BLACK EARTH CREEK MONITORING PROJECT		Morton	02/26/2009	
Black Earth Creek Co-op 6/4/2010 Power Point Presentation	This is the 6/4/2010 Mid term update to the Black Earth Creek Work Group. Summary of the current data that has been collected and updated analysis.	Matt Komiskey-USGS Middleton, WI	06/04/2010	Status update on current data and findings.
Black Earth Creek Co-op Meeting 12/1/09	Black Earth Creek Co-op Monitoring work group meeting. Data analysis, finding, and problems that have been encountered. Regression analysis support.	Matt Komiskey-USGS-Middleton,WI	12/01/2009	Update meeting on the current status of the project, budgeting, and trouble shooting.
Black Earth Creek Co-op Mtg 2011 PPT	Power Point Summary for Water year 2011. PPT was part of the description of what has taken place in water year 2011. Findings with the regression analysis as well as a data summary of monitoring events	Matt Komiskey-USGS/ Middleton, WI	11/29/2011	
Black Earth Creek Monitoring Project Summary 2010 CMP with USGS		Sell, Sorge, Helmuth	01/25/2012	
Black Earth Creek Photo 2011	Photo taken on summer day in 2011 with the boys at Black Earth Creek.	Helmuth, Lisa	01/25/2012	
USGS Gauging Stations	USGS Gauging Stations for BQY43	Ron Arneson		

Budget

Combined Budgets:

Combined SLOH:

Combined Total:

Funding

Organization	Source	Type	Amount	Start Date	End Date
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