

# **Attachment E:**

## **2012 Impaired Waters List**

### **Summary of Public Comments and WDNR's Responses**

A public comment period on the Draft 2012 Impaired Waters List was held from December 20, 2011 to February 20, 2012. 70 different entities commented on the draft 2012 Impaired Waters List. The following is a summary of comments and WDNR responses indicating any changes to WisCALM and Impaired Waters List. This attachment is submitted to USEPA as part of the Integrated Report. After US EPA staff have reviewed the 2012 Impaired Waters List and this document, additional changes may be made to ensure compliance with federal requirements.

This attachment contains:

- Public Notice of the Public Comment Period
- A list of those who submitted comments
- Individual comments and WDNR responses

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## **PUBLIC NOTICE OF THE PUBLIC COMMENT PERIOD**

A public comment period on the Draft 2012 Impaired Waters List was held from December 20, 2011 to February 20, 2012. WDNR is now using a GovDelivery email listserve to allow all citizens interested in Impaired Waters to receive email bulletins related to water quality issues. A GovDelivery email was sent to over 1300 interested parties to notify them of the public comment period. WDNR also issued a traditional press release for newspapers around the state. Comments received and WDNR responses to those comments are in a separate Attachment.

### **GOVDELIVERY EMAIL**

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**From:** Wisconsin Department of Natural Resources [mailto:widnr@service.govdelivery.com]  
**Sent:** Tuesday, December 20, 2011 4:27 PM  
**Subject:** Courtesy Copy: Wisconsin's 2012 Impaired Waters List

#### **This bulletin was sent to the following groups of people:**

Subscribers of Impaired Waters (1323 recipients)

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#### **Public Comment Begins December 20, 2011**

Wisconsin's Impaired Waters List two-month comment begins today, December 20, 2011 and ends on February 20, 2012. A press release announcing the start of the public comment period and summarizing the 2012 list updates is available at: [http://dnr.wi.gov/news/DNRNews\\_Lookup.asp?id=306#art3](http://dnr.wi.gov/news/DNRNews_Lookup.asp?id=306#art3)

More information regarding the list can be found at: <http://dnr.wi.gov/org/water/condition/impaired/>. The following website also provides a useful tool to search for more detailed impaired waters related information: <http://dnr.wi.gov/water/impairedSearch.aspx>.

The Impaired Waters List, known as the 303(d) List is updated every 2 years and identifies waters not meeting water quality standards. Waters are removed from the list when new data indicate that water quality standards are attained. The existing list includes more than 700 waters, and the primary pollutants identified are mercury, total phosphorus and total suspended solids.

Comments and questions can be sent to: [DNRImpairedWaters@wisconsin.gov](mailto:DNRImpairedWaters@wisconsin.gov)

Thanks and have a great holiday,

The Integrated Reporting Team

## **Draft watershed plans, impaired waters list now available for comment**

MADISON – Two of the three products Wisconsin is required to submit to the federal government assessing the condition of its lakes and rivers are available for public comment through Feb. 20, 2012.

The products -- Wisconsin's proposed list of waters that do not meet water quality standards and a group of plans for maintaining or improving water quality in 24 of 330 watersheds across the state -- also are the subject of a Jan. 5 webcast set to begin at 1:30 p.m. More information on the webcast and submitting public comments is found below.

The 1972 Clean Water Act requires states every two years to assess whether their waters meet the national goals of supporting healthy aquatic communities, habitat for wildlife and opportunities for fishing and swimming. States are to publish a statewide water quality report, develop an "Impaired Waters List" of lakes and rivers that do not meet state water quality standards, and submit plans for maintaining and improving water quality in a certain number of watersheds every cycle.

### ***25 waters removed, 32 added to Impaired Waters List***

DNR is proposing to remove 25 lakes, beaches and rivers from the [2012 draft impaired waters list](#), often referred to as the 303 (d) list, because their water quality has improved and now meets federal standards. The proposed removals, or "de-listings" reflect recent improved stream habitat and recent bacteria concentrations at those beaches, according to Aaron Larson, the DNR water resources management specialist who coordinates the impaired waters list. A [list of the waters being removed and added](#) (pdf; 38kb) is available on the DNR website.

At the same time, 32 waters are proposed to be added to the impaired waters list for the first time because of documentation that they exceeded numeric standards for phosphorus, mercury, bacterial contamination and recoverable zinc and copper, he says. Waters where phosphorus was the problem pollutant also had to be showing signs of biological impairment such as excessive algal growth or lack of insects sensitive to pollution to be listed as impaired.

And additional pollutants are added for 19 waters already on the impaired waters list; in 18 of those cases, those waters are found to exceed standards for total phosphorus. The impaired waters list includes more than 700 lakes, rivers, impoundments or streams.

Tim Asplund, acting chief of DNR's water evaluation section, says the new listings don't mean that water quality has suddenly decreased in these waters since the 2010 impaired waters list was submitted, but likely reflect a combination of factors: new data submitted for consideration, new phosphorus standards that for the first time set numeric criteria for how much of this nutrient can be in lakes and rivers, and new methodologies for weighing whether to add or remove a water from the list, he says.

"The process of listing waters as impaired is a constantly evolving, changing process because the science and assessment methods are constantly evolving," Asplund says. "Some of these waters may have been impaired for a long time but we now have more clear parameters to make listing decisions, and in many cases, more information."

For the 2012 process, data was evaluated from monitoring conducted by DNR, the U.S. Geological Survey and county health departments, as well as from groups that submitted data including the Milwaukee Metropolitan Sewerage District, the Alliance for the Great Lakes, Centerville Cares, the Silver Lake Management District and the Wisconsin Resources Protection Council.

For water bodies identified as impaired, DNR develops analytical models called Total Maximum Daily Loads, or TMDLs, that set pollution reduction goals, identify sources of pollutants, and recommend best management practices. When monitoring shows that the waterbody is again meeting water quality standards, the water body is removed from the Impaired Waters List, Asplund says.

### ***Water condition information also available for 23 watersheds***

The assessment process results in updated, [detailed water condition information](#) for 23 of Wisconsin's 330 watersheds each year. This year, the Mukwonago River, Kinnickinnic River, Big Roche A Cri River, Waupaca River and Coon Valley Creek watersheds are among the draft plans available, according to Lisa Helmuth, who coordinates watershed plans and related assessments.

A watershed represents all of the land that drains to a particular lake or stream.

While detailed plans for only these watersheds are being submitted at this time, DNR has also compiled and put online a wide array of information about thousands of other waters. People can use DNR's new Search your Water! tool, which provides easy online access to available monitoring data and descriptions of projects that have occurred on or near the water.

Where to submit comments on the Impaired Waters List, 24 watershed plans

The online web presentation about the impaired waters list and the watershed plans is set for Jan. 5. [People are asked to register online to participate.](#)

Comments on the Clean Water Act Condition Summary and Watershed Plan Updates may be submitted via e-mail through Feb. 20, 2012, to [lisa.helmuth@wisconsin.gov](mailto:lisa.helmuth@wisconsin.gov) or to Wisconsin DNR, Watershed Planning/Helmuth (WT/3), PO Box 7921, Madison, WI 53707-7921.

Comments on the proposed Impaired Waters List may be submitted via e-mail through Feb. 20, 2012, to [DNRImpairedWaters@wisconsin.gov](mailto:DNRImpairedWaters@wisconsin.gov) or to Wisconsin DNR, Water Evaluation Section

(WT/3), PO Box 7921, Madison, WI 53707-7921.

FOR MORE INFORMATION ON THE IMPAIRED WATERS LIST CONTACT: Aaron Larson (608) 264-6129; Tim Asplund (608) 267-7662

FOR MORE INFORMATION ON THE OVERALL ASSESSMENT CONTACT: Susan Sylvester (608) 266-1099; Lisa Helmuth, [lisa.helmuth@wisconsin.gov](mailto:lisa.helmuth@wisconsin.gov), 266-7768

## LIST OF COMMENTERS

**Table 1. List of public comments received on 2012 Impaired Waters List.**

Commenter ID#	Commenter Name	Affiliation	Topic	Specifics
1	Nancy Utesch	Citizen, Kewaunee, WI	Beaches	Crescent Beach
2	Mary Shea	Secretary, Boelter Lake Association, Lanark, WI	Central Sands	Boelter Lake, Portage Co
3	Karen von Huene	Executive Director, Wisconsin Lakes	Central Sands	Central Sands Waters
4	Cris van Houten	President, Huron Lake Association, Oasis, WI	Central Sands	Huron Lake
5	Barbara Gifford	Vice President, Friends of the Little Plover River	Central Sands	Little Plover River
6	Lori Grant	Policy Program Manager, River Alliance of Wisconsin	Central Sands	Little Plover River & others.
7	Brian A Wolf	President, Long Lake District, Oasis, WI	Central Sands	Long Lake
8	M. Frances Rowe	Pleasant Lake Management District	Central Sands	Pleasant Lake, Waushara & Marquette Co
9	Susan Wurzer	Secretary, Friends of the Tomorrow/Waupaca River - signed on behalf of Board of Directors	Central Sands	Stoltenberg Creek, Tomorrow Waupaca River tributaries
10	Mark Vukovich	Citizen	General	General
11	Renee Ketchum	Citizen, Hayward, WI	General	Mining
12	Jean Lemke	Citizen	Lakes	Bass Lake
13	Roman T. Byrka	Citizen	Lakes	Fish consumption
14	Steve Arnold	Chair, Friends of Lake Wingra	Lakes	Lake Wingra, Odana Pond
15	Alf E. Sivertson	Law Offices of Sivertson and Barrette on behalf of Courte Oreilles Lakes Association (COLA)	Lakes	Musky Bay
16	Jeff Taylor	Citizen, Watertown, WI	Lakes	Swan Lake, Columbia Co
17	Barb Czarnecki	Secretary, Lake Chippewa Flowage Resort Association	Rivers/Streams	Chippewa Flowage
18	Ron Story	Citizen, Kenosha, WI	Rivers/Streams	Pike River
19	Joe & Barbara Vass	Citizen, Kenosha, WI	Rivers/Streams	Pike River, Kenosha County
20	Russ Tooley	Citizen	Rivers/Streams	Point Creek, Fischer Creek
21	Mark Musial	Citizen, Green Bay, WI	Rivers/Streams	Upper East Twin River (Krok Creek)
22	Lynn Utesch	Citizen, Kewaunee, WI	Rivers/Streams	Upper East Twin River (Krok Creek)
23	F. Michelle Halley	Attorney and Project Manager, National Wildlife Federation	Stream C	Stream C
24	Jamie A. Van Ooyen	Behalf of Atty. Timm P. Speerchneider - DeWitt Ross & Stevens Law Firm	Stream C	Stream C
25	Fred Ponschok	Chairperson, Protect Our Wolf River (POW'R), Shawano, WI	Stream C	Stream C
26	Barbara Barton	Citizen	Stream C	Stream C
27	Richard Sloat	Citizen	Stream C	Stream C
28	Michael Riesterer	Citizen	Stream C	Stream C
29	Helen F. Findley	Citizen	Stream C	Stream C
30	Amber Rincon	Citizen	Stream C	Stream C
31	Terri Whealen	Citizen	Stream C	Stream C
32	Simon Denomie	Citizen	Stream C	Stream C
33	Sara Culver	Citizen	Stream C	Stream C
34	Laura Priebe	Citizen	Stream C	Stream C

35	Pam Statz	Citizen, Chippewa Falls, WI	Stream C	Stream C
36	Jack S. Sneve	Citizen, Duluth, MN	Stream C	Stream C
37	Karen and John Wilson	Citizen, Egg Harbor, WI	Stream C	Stream C
38	Sarah Rogers	Citizen, Madison, WI	Stream C	Stream C
39	Bernie Schlafke	Citizen, Madison, WI	Stream C	Stream C
40	Steven C. Garske	Citizen, Marenisco, MN	Stream C	Stream C
41	Margaret Comfort	Citizen, Michigamme, MI	Stream C	Stream C
42	Pamela Richard	Citizen, Milwaukee, WI	Stream C	Stream C
43	Betty Wolcot	Citizen, Osseo, WI	Stream C	Stream C
44	Joseph Rogozinski	Citizen, Oxford, WI	Stream C	Stream C
45	Maureen Ash	Citizen, River Falls, WI	Stream C	Stream C
46	Betty Wochinski	Citizen, Stevens Point, WI	Stream C	Stream C
47	Deborah Skubal	Citizen, Wausaukee, WI	Stream C	Stream C
48	Douglas Lichtfeld	Citizen, Wausaukee, WI	Stream C	Stream C
49	Carroll Judd	Citizen, Whitewater, WI	Stream C	Stream C
50	Heidi Waddell	Citizen, WI	Stream C	Stream C
51	William F. and Carol J. Watkins	Citizens, Stevens Point, WI	Stream C	Stream C
52	John LaForge	Co-director, Nukewatch, Luck, WI	Stream C	Stream C
53	Laura Gauger	Legal Affairs Coordinator, Wisconsin Resources Protection Council, Tomahawk, WI	Stream C	Stream C
54	Tom Boerner	Owner, Unnamed plastics processor company, Kohler, WI	Stream C	Stream C
55	Tom Wilson	Sub Committee Chair, Northern Thunder Mining	Stream C	Stream C
56	Amy Kelsey	Citizen	WisCALM	Data Use
57	Buzz Sorge	Citizen	WisCALM	Data Use
58	Jerry Deschane	Citizen	WisCALM	General
59	Lisa Conley	Citizen	WisCALM	Mercury
60	Frank Pratt	Retired WDNR Fisheries Biologist, Hayward, WI	WisCALM	ORW, TP
61	Jane Carlson	Citizen	WisCALM	Phosphorus
62	Dale Robertson	USGS	WisCALM	Phosphorus
63	Chris Stempa	Citizen	WisCALM	TMDLs
64	Cheryl Nenn	Milwaukee Riverkeeper	WisCALM	UAA
65	Brandon Koltz and Jane Carlson	Central States Water Environment Association (CSWEA), Government Affairs Committee Chair, and CSWEA Chair: Wisconsin Section - CSWEA	WisCALM	WisCALM comment
66	Paul G. Kent	Stafford Rosebaum Attorneys on behalf of the Municipal Group Wastewater Division (MEG)	WisCALM	WisCALM comment
67	Miriam Ostrov	Supervising Attorney, Midwest Environmental Advocates, Inc.	WisCALM	WisCALM Comments
68	Lyman C. Welch	Water Quality Program Director, Alliance for the Great Lakes, Chicago, IL	WisCALM	WisCALM Comments
69	U.S. EPA	U.S. EPA		

## INDIVIDUAL COMMENTS AND RESPONSES

### WisCALM

**1) COMMENT: GENERAL WISCALM** – The Watch Waters list for waterbodies that have either insufficient or conflicting information should be available to the public along with impaired waters list. **(Alliance for Great Lakes)**

**RESPONSE:** Watch Waters serve as an internal flag for WDNR monitoring staff indicating waters that need additional follow-up data to make an assessment decision. These waters are a subset of Subcategory 3 waters (waters that have insufficient data for assessment) and can be provided upon request.

**2) COMMENT: GENERAL WISCALM** – WisCALM guidance should be subject to rigorous review.

- a) Who makes the decisions regarding changes to WisCALM guidance and what is the rationale?
- b) Who reviews changes to WisCALM guidance? Is it peer-reviewed?
- c) Where is the “public record” related to WisCALM guidance?

**(Courte Oreilles Lakes Association and Lac Courte Oreilles Band of Lake Superior Chippewa Indians (Tribe))**

**RESPONSE:** WisCALM guidance is vetted both internally and externally, through internal technical, advisory, and policy teams, including the Integrated Reporting Team, Stream and Lake Monitoring Technical Teams, Watershed Assessment, Restoration, and Protection Advisory Team, and the Water Resources Policy and Management Team, as well as additional ad hoc technical teams. The guidance, once approved by the Water Quality Bureau Director, is provided to the public on our website and in conjunction with our Impaired Waters List when soliciting public comment on draft lists. Current and previous versions of our WisCALM guidance are available online and by request. Public comments on WisCALM are solicited at the time the biennial draft lists are public-noticed. WisCALM guidance is updated for every two-year reporting cycle in response to improved scientific understanding and updated federal or state laws or policies.

**3) COMMENT: GENERAL WISCALM** – Is the modified listing methodology consistent with what other states are doing? If not, in what ways are we different and why are we different? **(Jerry Deschane)**

**RESPONSE:** WDNR considers other states’ methods when updating its listing protocols. A comprehensive state-by-state comparison of our assessment methods has not been conducted. The most significant updates for this reporting cycle include the following:

- Specific assessment methodologies were revised for assessing the recreational uses of lakes/beaches when using pathogen (*E. coli*), total phosphorus or chlorophyll indicators. The recreational use assessment methodology for beaches was revised from using a rolling geometric mean to a monthly aggregate geometric mean when comparing to applicable *E. coli* criteria.
- Specific assessment methodologies were revised for assessing the Fish and Aquatic Life (FAL) use of streams/rivers when using the total phosphorus indicator.
- Specific assessment methodologies were revised for assessing the FAL and Recreational uses for lakes based on total phosphorus and chlorophyll a.
- Section 6.0 Public Health and Welfare Uses was revised to provide clarification on the waters listed due to general and specific fish consumption advisories.
- Section 7.1 was expanded to discuss, in more detail, issues related to EPA’s policy of Independent Applicability and describes options for resolving data conflicts.
- The Threatened Waters Section (7.3) lists US EPA’s definition of “threatened waters” and describes Wisconsin’s use of the US EPA’s definition of the threatened waters classification. The



Watch Waters Section (7.4) defines the “watch water” classification as those waterbodies that have insufficient or conflicting data such that an impairment decision cannot be made, and, therefore, are identified for further monitoring.

- Section 8.0 Integrated Report Listing Categories was revised to include two new categories of 303(d) listed waters:
  - Category 5C, which was established for waters where available information indicates that non-attainment of water quality standards may be caused by naturally occurring or irreversible human-induced conditions, and
  - Category 5P, which was established for waters that exceed numeric criteria for total phosphorus but for which a biological impairment is not apparent.
- The prioritization or ranking of assessment units for TMDL development was revised to define high priority waters as those for which a TMDL is currently in development, medium priority waters are those water for which information is currently being gathered for future TMDL development, and low priority waters are those for which TMDLs will be developed in the future.

**4) COMMENT: GENERAL WISCALM** – As part of your review of designated uses for selected watersheds, are you doing a de-novo review of variance designations, and/or doing Use Attainability Analyses (UAAs)? (**Cheryl Nenn, Milwaukee Riverkeeper**)

**RESPONSE:** Part of the Watershed Planning process includes a review of the Designated Uses of waterbodies within the watershed. If staff determine that a Use Designation or variance should be changed, that recommendation is noted in our database. Such a change would require a change to the Designated Use in code, and/or a Use Attainability Analysis. To date, there has not been a process to make these updates to the code; however, this has been identified as a priority through our Triennial Standards Review process, and staff are beginning to work toward a process for making these needed updates.

**5) COMMENT: GENERAL DATA USE REQUIREMENTS** – DNR must systematically consider “all existing and readily available water quality-related data and information” when creating the 303(d) list. DNR’s current approach of using SWIMS data and allowing for a short public data submission does not meet this broad requirement. DNR has not “actively solicited” all relevant groups, including governmental and academic organizations, when water quality problems have been reported by the public or other entities. (**Midwest Environmental Advocates**)

**RESPONSE:** In response to a similar comment received in 2010, DNR committed to and implemented several improvements to our data solicitation process for the 2012 reporting cycle.

- The data solicitation period was extended from the federally-required one month to three months, to allow citizens and partners more time to format and submit their data to us. The data solicitation period ran from Oct. 1 through Dec. 31, 2010.
- A GovDelivery listserve was created to allow all citizens interested in Impaired Waters to receive email bulletins related to water quality issues. This enabled us to notify over 580 interested parties of the opportunity to submit their data during the data solicitation period, as compared to the 85 entities that were notified for the 2010 cycle. Since then, the GovDelivery list has grown to 1,500 people, enabling us to continually improve our service and outreach to citizens. We also issued a traditional press release for newspapers around the state.
- A protocol was implemented requiring data submittals to be sent to us in a specific Excel file format to improve consistency of submittals and increase the usability of the data. This format enables citizens to know exactly what data are needed, and allows DNR staff to more efficiently analyze the data that we receive from the public.
- DNR staff worked with the Madison Long Term Ecological Research program to assess their total phosphorus and chlorophyll data.
- DNR staff initiated conversations with USGS to discuss the feasibility of transferring their data to DNR’s SWIMS database in the future, to allow assessment of those data in future listing cycles.

A total of 10 entities submitted data; these are listed online at the following website: <http://dnr.wi.gov/org/water/condition/impaired/comment.htm>. All data received from the public were checked to make sure quality assurance procedures were followed, and if so, these monitoring data were reviewed by regional staff for 303(d) listing purposes. In addition, all (Level 2) citizen-based monitoring data are entered into WDNR's SWIMS database, so these citizen-collected data are automatically used in the assessment of waterbodies statewide.

**6) COMMENT: GENERAL DATA USE REQUIREMENTS** – Are waters assessed only by DNR-collected data, or are volunteer collected data and grant-sponsored data also used for the assessments and reporting? **(Amy Kelsey)**

**RESPONSE:** All quality-assured data received from DNR staff, citizen monitors, and the public are used in our statewide assessments of waters. Volunteer data are used if the volunteers were trained through our citizen based monitoring program, the data are quality assured, and the data are in our SWIMS database. Data submitted by other entities, such as NGOs (Non Government Organizations), sewerage districts, etc., are evaluated if the data meet minimum data requirements, the data are quality assured, and DNR staff time is available to review the data.

**7) COMMENT: GENERAL DATA USE REQUIREMENTS** – Why are the local fisheries managers not consulted on biological impairment or their total data base used? **(Frank Pratt, Hayward, WI)**

**RESPONSE:** Decisions on biological impairments are based on data in collaboration with field staff and other sources, including fisheries biologists. Fish data that are accessible through the DNR's Fisheries Database are used to calculate Index of Biotic Integrity (IBI) scores, which are used for listing decisions. Recent database improvements have made these data more accessible for this reporting cycle. On a case-by-case basis, fish managers are consulted for their professional judgment on listing decisions.

#### **8 & 9) COMMENTS: TIERED ASSESSMENT**

**8)** Region 5 remains concerned that the tiered assessment approach described in the 2012 WisCALM does not produce sufficient data to make routine attainment determinations. Although, Region 5 acknowledges the usefulness of the Trophic Status Index (TSI) to demonstrate the absence of a water quality problem in lakes, our original concerns remain that the tiered approach, including follow-up on assessments in Tier 2, does not appear to be designed to systematically collect data across all water body types. **(USEPA)**

**9)** Tiered monitoring and assessment does not adequately detect existing impairments. **(Courte Oreilles Lakes Association and Lac Courte Oreilles Band of Lake Superior Chippewa Indians (Tribe))**

**RESPONSE FOR COMMENTS #8 AND #9:** WDNR recognizes the need for a more strategic approach to collecting Tier 1 monitoring data to meet WisCALM requirements. The current monitoring and assessment framework separates the purposes of Tier 1 and Tier 2 data. Tier 1 is used for assessment decisions (categorizing waters as Excellent, Good, Fair, or Poor) and for flagging waters that need additional assessment, for instance if the condition is poor and an impairment is suspected. Because of multiple water division goals, Tier 1 monitoring data are collected for several WDNR priorities and, in some cases, insufficient data are collected to make an impairment decision. Tier 2 is used as a follow-up to Tier 1 to collect additional data needed for impairment decisions. However, WDNR plans to evaluate whether this approach is the most efficient way to make assessment and impairment decisions.

Wisconsin is currently finishing two pilot projects in conjunction with EPA to explore a “geometric watershed sampling design” protocol, and is in the process of determining what level of sampling is most efficient to allow us to meet the majority of data needs. Concurrently, a workgroup has been convened to update Wisconsin's Water Monitoring Strategy. The question raised above regarding how

much data to collect for assessment decisions and whether our current Tiered approach should be modified is one topic that will be under discussion during that process.

**10) COMMENT: PUBLIC WATER SUPPLY USE** – Region 5 recommends WDNR begin developing an official designated use for public water supply. In addition, Region 5 strongly encourages WDNR to begin monitoring surface waters used for public water supplies. WDNR could consider the areas where communities use surface water for drinking water purposes (e.g., Lake Winnebago, Lake Michigan) as potential priority areas for monitoring and restoration. WDNR could consider monitoring some of their drinking water surface water sources for nitrates and pesticides. **(USEPA)**

**RESPONSE:** WDNR may consider whether adding a designated use for public water supply is feasible in the future, and if so, what surface water monitoring is appropriate to support those Designated Use listings. WDNR acknowledges that the current standards state that all surface waters shall be suitable for supporting public health and welfare; however, current formal use classifications for public water supply do not exist. Adding this designated use category would require a change in state administrative codes. While public drinking water supply and non-public drinking water supply are defined in Wis. Admin. Code NR § 102, the definition does not imply an official designated use category. These definitions were designed to implement language in NR 105. As WDNR states in the WisCALM document, an impairment category for Public Health and Welfare Uses may be created in the future, to house impairments due to fish consumption advisories, contaminated sediments and blue green algal toxins. However, without clearly defined uses in code for Public Water Supply, it will be difficult to apply attainment thresholds to create impairments for this use.

**11) COMMENT: PHOSPHORUS DATA USE** – DNR must apply the phosphorus criteria codified in NR 102.06. The standards which are used in the 2012 WisCALM differ from those set forth in NR 102.06, some threshold values in WisCALM are not as stringent as NR 102.06. **(Midwest Environmental Advocates)**

**RESPONSE:** The threshold values for total phosphorus (TP) in WisCALM correspond to those specified in NR 102.06. For rivers and streams, the listing protocols in WisCALM specify the numeric TP criteria as the threshold, and provide additional guidance on the exceedance frequency and statistical analysis required for making a listing decision.

This comment may refer to the TP thresholds in WisCALM for Lake Fish and Aquatic Life (FAL) uses. When the codified TP criteria were developed for lakes, the intent of scientists working on the criteria was that two separate listing thresholds would be applicable for Recreational and FAL Uses. When this was translated into rule language, the most stringent limit for all the uses was codified (the Recreation limits, protective of swimming, boating, and aesthetics), which will by default be protective of Fish and Aquatic Life uses as well. If a waterbody does not meet this most stringent use threshold, it is proposed for listing as impaired for Recreation. Fish and aquatic life generally do not experience significant impacts until much higher levels of phosphorus and chlorophyll a lead to greater disturbances\*, and therefore have less stringent thresholds: for shallow lakes, the WisCALM FAL thresholds indicate the point at which a lake is expected to “flip” from macrophyte-dominated to algae-dominated, thus impacting the biota; for deep lakes, the WisCALM FAL thresholds correspond to severe oxygen depletion and low visibility, affecting sight-feeding predator species.

While the criteria reflected in code are protective of all uses, it is not until higher TP values are exceeded that FAL uses are impaired. This reflects the intent of the science behind the development of the thresholds shown in Tables 4 and 5 of WisCALM.

\*The exception is for two-story fishery lakes, where use of the oxygenated hypolimnion by cold water species can be impaired at relatively low levels of eutrophication.

**12) COMMENT: PHOSPHORUS DATA USE** – DNR must apply the phosphorus criteria of NR 102.06 to USGS data and SWIMS data and list the phosphorus impaired waters. Applying the NR 102.06 phosphorus thresholds to USGS data, it can be seen that a large number of Wisconsin’s waters, specifically rivers and streams, are in exceedance. If the DNR finds the available data insufficient for listing, DNR must actively solicit additional data and explain the basis for its finding that USGS data is insufficient. **(Midwest Environmental Advocates)**

**RESPONSE:** Limited staff resources impede DNR from assessing the wide variety of data collected by USGS. In order to do such a comprehensive assessment, it is essential that the USGS database and DNR’s SWIMS database be integrated to allow automated data transfer into SWIMS. WDNR relies on SWIMS to calculate the statistical summaries for comparison to the criteria; otherwise, the statistical comparisons would have to be conducted manually for each USGS sampling station and those sampling stations would have to be linked to the appropriate assessment unit in our WATERS database. WDNR does not currently have the staff resources to conduct these manual assessment tasks. However, WDNR staff did initiate discussions with USGS staff during 2011 to investigate the feasibility of database integration, and hope to continue working toward this goal for the 2014 listing cycle, if funding and programming staff are available to do so.

**13) COMMENT: PHOSPHORUS DATA USE** – We support the recognition that natural background levels may be higher than impairment thresholds or uncontrollable factors may cause an exceedance of water quality standard. In these circumstances the Department will determine whether the criteria exceedance is reasonably expected to be due to natural or uncontrollable factors, a Use Attainability Analysis should be pursued to modify the designated use and/or the associated criteria. **(Municipal Environmental Group Wastewater Division)**

**RESPONSE:** In cases of high natural background levels or uncontrollable factors (i.e. EPA’s “six factors”), either: a) a Use Attainability Analysis (UAA) should be done to formally change the use, or b) site-specific criteria (SSC) for the waterbody should be developed. The Department is in the process of requesting approval to begin rulemaking to a) update our Designated Uses process in code, which would include completion of guidance on conducting a UAA to change a Designated Use, and b) establish a process for developing site-specific criteria for phosphorus. In the interim, until the code is updated, DNR must list these waters as impaired to recognize that they are not meeting codified water quality standards. A new category, 5C, has been developed for 2012 to house these waters as an indication that they may be future candidates for UAAs or SSC.

#### **14-18) COMMENTS: PHOSPHORUS, BIOLOGICAL IMPAIRMENT**

**14)** Waters with phosphorus concentrations that meet minimum data requirements and exceed applicable total phosphorus thresholds, but have not demonstrated biological impairment must be placed on the final 303(d) list. One way to accomplish this would be to separately identify the waters meeting the above described conditions from waters on the current proposed 303(d) list, for example, by amending the current proposed list to include a subcategory under Category 5 for this purpose. An example of a subcategory name might be Category 5p to indicate impairment based on exceedance of numeric phosphorus criteria alone. Under the current assessment and listing methodology, approximately 121 waters are incorrectly placed in Category 2 or 3. These waters met minimum data requirements and exceeded numeric criteria for phosphorus, but appear not to have been listed because no biological impairment was observed or no biological data were available. A list that omits waters whose total phosphorus concentrations meet minimum data requirements and exceed total phosphorus numeric criteria would be subject to partial disapproval by EPA. **(USEPA)**

**15)** DNR’s biological impairment rule must be removed or amended.

1. The biological impairment rule prevents waters which exceed total phosphorus limits from being listed unless there is additional evidence of biological impairment.

2. The new rule violates state law which requires waters to meet the phosphorus water quality criteria. The rule also violates federal law. The Clean Water Act instructs the state to identify any water which does not meet “any water quality standard applicable to such waters”.
3. If retained the minimum data requirement should be modified because the rule’s current formulation will prevent some waters with evidence of impairment from being listed due to overly stringent requirements. **(Midwest Environmental Advocates)**

**16) What is the purpose of adding the need of biological impairment to be listed for P impairment? (Dale Robertson, United States Geological Survey)**

**17) We support the revisions to WisCALM 2012 with respect to the determination of whether a waterbody is impaired for phosphorus. We believe that assessing biological indicators in addition to water quality criteria is a reasonable approach to determine whether to list a waterbody as impaired. The USGS Professional Papers 1722 and 1754 show relatively poor correlations between phosphorus concentrations and biological impairments on Wadeable streams and large rivers in WI, highlighting the importance of site-specific assessments. (Municipal Environmental Group Wastewater Division)**

**18) We support the WDNR’s approach of using more than just chemical data to assess waters for phosphorus impairment for three reasons:**

1. Listing waters as phosphorus-impaired based solely on a limited number of samples or an older data set would be improper. There is limited recent phosphorus water quality data available for surface waters in the state, and limited budgets for future testing and analysis. Phosphorus concentrations can vary greatly in surface water.
2. The USGS Professional Papers 1722 and 1754 show relatively poor correlations between phosphorus concentrations and biological impairments on Wadeable streams and large rivers in WI, highlighting the importance of site-specific assessments.
3. The USEPA recommends consideration of integrated chemical, biological, and physical metrics when assessing surface waters in accordance with the Clean Water Act. The WDNR is proposing to utilize the first two and we suggest continued refinement of assessment methodologies to consider physical habitat.

**(Wisconsin Section – Central States Water Environment Association Government Affairs Committee)**

**RESPONSE TO COMMENTS 14-18:** Taking into consideration comments received regarding WDNR’s phosphorus assessment methodology, including EPA’s February 17, 2012 letter stating that the draft 2012 Section 303(d) list compiled using this methodology could be partially disapproved, WDNR has revised our phosphorus assessment methodology to include those water bodies that exceed total phosphorus criteria alone in a new reporting category, 5P, in our updated draft 2012 Section 303(d) list.

For category 5P waters, biological data are either not available or do not indicate impairment. Depending on the availability of existing biological data, follow-up monitoring will be strongly recommended for some of these waters. If new biological data support TP data (i.e. both datasets exceed impairment listing thresholds), the water will be placed in category 5A and management actions for improving water quality will be considered. If biological data do not support the TP data, this information may be used to support the development of site-specific phosphorus criteria for these waters. WDNR plans to establish a process for the development of site-specific phosphorus criteria by rule that will allow WDNR to adjust our phosphorus criteria based on local conditions.

**19) COMMENT: PHOSPHORUS, BIOLOGICAL IMPAIRMENT**—A stream or river could be listed for P if there are two consecutive biological impairments and no water quality data. Is this true that it would be listed for P, or would it actually be listed for an unknown cause? **(Jane Carlson, Strand Associates, Inc)**

**RESPONSE:** The water would be listed for unknown pollutant until additional data is collected.

**20) COMMENT: PHOSPHORUS DELISTING CRITERIA** – We suggest clarification on how waters are delisted for phosphorus in WisCALM. Biological data could be adequate justification for delisting in the case of phosphorus. A sentence in Section 7.6 could be modified as follows (suggested changes are in italics): “Waters will be assessed through the same process identified as listing a waterbody on the 303(d) Impaired Waters List and must meet water quality standards *or appropriate biological indices* to be removed from the list”.

**(Wisconsin Section – Central States Water Environment Association, Government Affairs Committee)**

**RESPONSE:** This comment pertains to DNR’s earlier position (at the time the draft was made available for public comment) that waters would only be listed for phosphorus if they showed a corresponding biological impairment. In response to comments from EPA and others, WDNR has revised its position (see response to Comments #14-18), and has created a new subcategory of the Impaired Waters List, 5P, which will house those waters that are exceeding the phosphorus criteria but for which a biological impairment is not evident. To delist a waterbody that has been listed with phosphorus as a pollutant, the waterbody must be shown to be meeting the numeric phosphorus criteria that are in code. With this approach, a delisting decision cannot be made solely on biological criteria, and therefore the language suggested in this comment would not be applicable.

**21) COMMENT: PHOSPHORUS METHODOLOGY** – Because WDNR’s phosphorus impairment thresholds for lakes are indicative of waters that are already impaired and in need of restoration, WDNR should consider an avenue for assessing/protecting lakes of higher quality (i.e., lower nutrient concentrations and/or high quality biological indicators). Potentially the approach would contain two thresholds for each lake type: one threshold for establishing impairment and the other threshold for keeping high quality waters in a high quality state.

Region 5 continues to have concerns about the biological thresholds used for assessing rivers and streams (Table 9 in the 2012 WisCALM). Consideration of revised thresholds should be pursued in the next listing cycle, given that current thresholds may not lead to full identification of waters that are not meeting designated uses.

**(USEPA)**

**RESPONSE:** Adjusting impairment thresholds, and/or implementing a tiered threshold approach to prevent degradation of higher quality waters (both lakes and rivers), are issues WDNR will consider as it moves forward with future assessment methods outlined in WisCALM.

Condition category thresholds (as outlined in Table 9) for the warmwater and coldwater fish Indices of Biotic Integrity (IBIs) were developed using the least-impacted stream data by identifying the 95th percentile value of their distribution as the threshold between “good” and “excellent” condition. Below this 95<sup>th</sup> percentile value, the remaining data were trisected, such that below 33% of that value was considered a “poor” condition, from 33-66% was a “fair” condition, and above 66% was a “good” condition. Condition categories for the large river, small stream, cool-cold transition, and cool-warm transition fish IBI's, developed more recently, include both a "heavily impacted" and a "least impacted" subset of sites. Values less than the 25th percentile for the heavily impacted sites (i.e., 75% of the heavily impacted sites had a value lower than this) were considered poor, values greater than the 25th percentile for the least-impacted sites (i.e., 75% of the least impacted sites had a value greater than this) were considered good, and values between the poor and good thresholds were considered fair. More detail on the derivation of these thresholds will be added to future updates of the WisCALM document. Citations to peer-reviewed journal articles that explain the development of the IBIs and condition categories were added to the finalized 2012 WisCALM document. WDNR is considering whether revisions to the above thresholds would be appropriate for the 2014 list.

**22) COMMENT: PHOSPHORUS METHODOLOGY** – Region 5 supports WDNR’s revision that two years or more of exceedance (revised from three years or more) indicates impairment. Where there are fewer than five years of data (e.g., 3-4 years of data), Region 5 supports language that indicates two years of exceedance indicates impairment, as opposed to the existing language that indicates a majority of years need to be exceeded to indicate impairment. Along those lines, Wisconsin should clarify its rationale where it has only two years of data. In those cases, an approximately equal level of protection would be that one year or more of exceedance would indicate impairment. **(USEPA)**

**RESPONSE:** The Department believes that in all cases, at least two years of data are needed to list a lake as impaired for phosphorus. This is to recognize the inherent year-to-year variability of lake systems that may be caused by unusual weather events, variable chlorophyll response, etc. Therefore, for waters with only two years of data, we will continue to require that both years exceed impairment thresholds in order to list as impaired. For waters with more than two years of data, current protocols require that for the majority of years for which there are data, the annual average exceed the TP criteria in order to list as impaired. WDNR staff are open to revisiting this requirement for future WisCALM updates, but do not recommend changes to the 2012 list at this time.

**23) COMMENT: PHOSPHORUS METHODOLOGY**– Riverkeeper supports WDNR’s proposed changes to the listing methodology for phosphorus in rivers of using total phosphorus criteria and decreasing the number of required samples from ten to 6 samples between May and October within one year. Riverkeeper also supports proposed new listings and additions to existing listed waters in the Milwaukee River Basin. **(Milwaukee Riverkeeper and Alliance for Great Lakes)**

**RESPONSE:** Thank you for your comment and support.

**24) COMMENT: PHOSPHORUS METHODOLOGY** – How are the exceedance levels arrived at and where can I find them, most especially for P, and Total P? **(Frank Pratt, Hayward, WI)**

**RESPONSE:** Total phosphorus criteria for lakes, streams and rivers are listed in Chapter NR 102 Wisconsin Administrative Code. Minimum data requirements, impairment thresholds and exceedance frequency requirements and the basis for the assessment methods are provided Wisconsin’s Consolidated Assessment and Listing Methodology (WisCALM). The WisCALM document can be found online at <http://dnr.wi.gov/org/water/condition/wiscalm.htm>. Exceedance thresholds and other protocols for statistical analysis are determined by DNR researchers, biologists, and policy staff.

**25) COMMENT: PHOSPHORUS METHODOLOGY** – How do we find out what type of lake we have and what P criterion applies? For example is Lake Mendota a two-story fishery or a drainage lake? Is there a place on the WDNR web site that has this information? Similarly, is there a quick way to find out if an impoundment meets the definition of a reservoir in NR 102.06? **(Jane Carlson, Strand Associates, Inc)**

**RESPONSE:** To find out the lake type, or natural community, you can use the Wisconsin Water Search page (<http://dnr.wi.gov/water/waterSearch.aspx>) to get to a detailed description of the water you are looking for. The applicable phosphorus criteria are determined by the natural community type, which is listed on the water’s description page below size. For Lake Mendota (<http://dnr.wi.gov/water/waterDetail.aspx?key=11672>) the natural community is Deep Lowland. However, we have not systematically identified which lakes meet the definition of two-story fishery natural community classification for this assessment and listing cycle. Similarly, a systematic internal analysis will also be required to determine which reservoirs should be considered impoundments. DNR plans to conduct a methodical analysis for these two categories for the 2014 cycle.

In the WisCALM document (<http://dnr.wi.gov/org/water/condition/wiscalm.htm>) tables 4A and 5 give the phosphorus thresholds for Fish and Aquatic Life Use and Recreational Use respectively for each of the natural community types. One way to determine whether an impoundment is a reservoir is to find it

on the Surface Water Data Viewer and use the 'Identify' button. After clicking on the waterbody a list of information appears on the left side of the screen and 'Feature Description' or 'Feature Type' will state if it is a reservoir.

**26) COMMENT: DISSOLVED OXYGEN** – DNR's minimum data requirements for DO are overly restrictive and prevent impaired waters from being listed. DNR's DO sample requirements should conform to practical restraints. For example DNR should use a one-year threshold for DO listing. This would allow DNR more flexibility to move sonde devices to different suspected areas of concern based on citizen or agency data. (**Midwest Environmental Advocates**)

**RESPONSE:** DNR recognizes that anthropogenic influences assuredly affect dissolved oxygen (DO) in lakes, rivers, and streams and DO fluctuations can vary considerably within a given hour, day, or year due to many confounding different factors. However, DNR recognizes that 3 years of dissolved oxygen data may be impractical based on current monitoring resources. Therefore, DNR will consider revising the minimum data requirements in WisCALM for 2014.

**27) COMMENT: FISH CONSUMPTION** – DNR should list waterbodies as impaired for fish consumption regardless of whether they are subject to the general consumption guidelines. DNR should list waters that contain fish with mercury levels that may injure health when the fish are relied on as a food source. Placing these mercury-impaired waters on the 303(d) list makes a TMDL process possible. (**Midwest Environmental Advocates**)

**RESPONSE:** All waters in Wisconsin fall under the *general* fish consumption advisory whether or not there is actual fish tissue data or not. Both the Wisconsin Department of Health Services and Department of Natural Resources believe this is a responsible means to ensure that the public is aware that eating fish too often may pose risks to human health – especially to pregnant or nursing mothers and young children.

Conversely, Wisconsin utilizes a *special* fish consumption advisory to identify those waterbodies where actual fish tissue data have been collected (especially for mercury [Hg] and polychlorinated biphenyls [PCBs]) and those concentrations are high enough to warrant a waterbody-specific health advisory. Special fish consumption advisories are a way of evaluating the fish tissue sampling data to determine which lakes and species require advice more stringent than the statewide general advice OR which exceed a certain value. WDNR identifies these *special* advisory waters as being impaired and includes them on the 303(d) list. The tissue thresholds used to establish special advisories vary by pollutant, as well as the different fish species. The WisCALM Guidance specifies the thresholds for each pollutant and recognizes the input of epidemiologists at the Department of Health Services.

WDNR is actively pursuing the reduction of mercury in the environment in many different ways, including: the recent rule to reduce mercury emissions from fossil fuel plants, reducing mercury through the WPDES program, implementing bans to eliminate the sale of mercury-containing products (like thermostats), encouraging dental amalgam management, implementing the electronics recycling law and supporting voluntary programs for collection of Compact Fluorescent Lightbulbs (CFLs) to keep them out of landfills. Listing waters as impaired for mercury contamination may elevate public awareness of the issue, and if a TMDL is developed in the near future, it may likely determine that the majority of the mercury loading to Wisconsin waters comes from atmospheric deposition. This is evident in a statewide mercury TMDL developed by the Minnesota Pollution Control Agency that identified ~90% of all mercury emissions were from out-of-state sources.

**28) COMMENT: WISCALM *E. COLI* METHODOLOGY** – The new *E. coli* methodology of using a monthly geometric mean, instead of rolling annual geomean, does not capture fluctuations in bacterial levels that may occur throughout an entire season. Delisting of Milwaukee area beaches in particular seems to be a statistical technicality as opposed to a legitimate improvement in beach quality.



**(Alliance for Great Lakes)**

**RESPONSE:** The new methodology for assessing *E. coli* at beaches uses a monthly geometric mean instead of a rolling annual geometric mean. Using the monthly geometric mean requires a less robust data set, therefore allowing the DNR to assess more beaches statewide. The new methodology recognizes that many beaches are not sampled five times per month in any given year due to resource limitations. The revised assessment methodology aggregates, by month, all *E. coli* data collected from a beach during the “beach season” (defined as May 1<sup>st</sup> through September 31<sup>st</sup>) over the past five years. These data are aggregated by month to more closely approximate the “five samples per month” requirement of the geometric mean criterion recommended in federal criteria documents. The new methodology allows beaches to be assessed and possibly elucidate seasonal trends that were obscured using previous protocols that relied on rolling geometric means to address sparse datasets. The EPA impairment threshold of 126 cfu/100 mL has not changed. If any monthly geometric mean exceeds the impairment threshold the beach is identified as not supporting its recreational use potential and is placed on the Impaired Waters List.

The health and safety of Wisconsin residents is better protected when more beaches can be monitored and evaluated. This methodology is more consistent with neighboring states and still complies with the 2000 Beaches Environmental Assessment and Coastal Health (BEACH) Act issued by the USEPA. The DNR is not promoting that beach health has improved at all of the beaches delisted; due to the high variability of *E. coli*, any listings or delistings are based solely on data, determined based on our assessment methodology. Specific delistings based on improved beach health and mitigated sources may be highlighted in success stories.

**GREAT LAKES**

**29) COMMENT: BEACH LISTINGS** – Narrative water quality standards should be applied when assessing recreational use support due to excessive algae on Great Lakes beaches. NR102.04 (part 1 (a)-(d)) states that the following conditions must be met:

- a. Substances that will cause objectionable deposits on the shore or in the bed of a body of water, shall not be present in such amounts as to interfere with public rights in waters of the state.
- b. Floating or submerged debris, oil, scum or other materials shall not be present in such amounts as to interfere with public rights in waters of the state.
- c. Materials producing color, odor, taste or unsightliness shall not be present in such amounts as to interfere with public rights in waters of the state.
- d. Substances in concentrations or combinations which are acutely harmful to animal, plant or aquatic life.

These narrative standards must be considered when evaluating use impairments due to algae on Great Lakes beaches. **(Alliance for Great Lakes)**

**RESPONSE:** WDNR recognizes both the qualitative scale for documenting *Cladophora* densities developed by WDNR’s Office of Great Lakes and corresponding information collected by beach managers along beaches of the Great Lakes. However, there is no objective manner in which these two datasets can be linked in a defensible manner. Development of that protocol must be done by experts who are familiar with the linkages between nutrients in nearshore waters and ecological effects in the Great Lakes nearshore community. Without such protocols in place, WDNR does not recommend modifications to the proposed list at this time.

As WDNR prepares for the 2014 listing cycle, an attempt will be made to collaborate with USEPA and other Great Lakes state water quality agencies (as appropriate) to discuss the development of a protocol for considering impairments related to *Cladophora*. If developed, this protocol may be included in pending revisions to the WisCALM guidance document used to make listing decisions.

**30) COMMENT: BEACH LISTINGS** –WDNR should provide detailed justification for removing the beaches listed below from the impaired list. WDNR should reassess beaches that have been delisted in 2010 that continue to experience a high number of beach action days and provide justification for why those beaches are not included on the list (**Alliance for Great Lakes, Milwaukee River Keeper**).

Beach Name	2012 303(d) Status (proposed)	EPA Beach Action Days
• Ephraim Beach, Door Co	Not on the list	15
• Fish Creek Beach, Door Co	Not on the list	16
• Fischer Park Beaches, Manitowoc Co	Proposed for delisting	24
• Atwater Park Beach, Milwaukee Co	Delisted 2010	26
• Bayview Park Beach, Milwaukee Co	Proposed for delisting	15
• Bradford Park Beach, Milwaukee Co	Proposed for delisting	43
• McKinley Beach, Milwaukee Co	Proposed for delisting	34
• Tietjen Beach/Doctor's Beach, Milwaukee Co	Delisted 2010	18
• Cedar Beach Rd Beach, Ozaukee Co	Proposed for delisting	23
• Harrington State Park Beach South, Ozaukee Co	Proposed for delisting	39

(Alliance for Great Lakes)

**RESPONSE:** Currently the number of beach ‘action days’ is not part of the standard WisCALM methodology for assessing beaches. WDNR does not recommend modifications to the proposed to the list at this time. The beaches listed above were all assessed with 5 full years of data and the monthly geometric means were below the EPA *E. coli* impairment threshold of 126 cfu/100 mL. Please see the table below comment #31 showing the data used for assessment purposes.

**31) COMMENT: BEACH LISTINGS** – Due to elevated *E. coli* levels the Alliance for the Great Lakes requests that the WDNR consider listing several additional beaches: General King Park Beach, Bender Park Beach, Bradford Park Beach and McKinley Park Beach. (**Alliance for Great Lakes**)

**RESPONSE:** Of the beaches listed in the comment letter, the four listed above are the ones that WDNR has data for\*. Each of the beaches listed above assessed based on 5 full years of data using WDNR’s 2012 methodology, and did not exceed the EPA *E. coli* standards. WDNR does not recommend adding these beaches to the proposed to the list at this time.

\*Note: WDNR does not have record of many of the beaches submitted by the commenter. They do not appear to correspond to WDNR beach sites.

The following are the geomeans calculated for beaches in Comments #30 and #31:

Name of Beach	County	May Geomean	June Geomean	July Geomean	August Geomean
Ephraim Beach	Door	6	14	13	28
Fish Creek	Door	7	24	25	32
Fischer Park	Manitowoc		110	119	83
Atwater Beach	Milwaukee		19	47	45
Bayview Beach	Milwaukee	28	56	56	30
Bender Beach	Milwaukee	22	22	40	36
Bradford Beach	Milwaukee	31	44	50	83
McKinley Beach	Milwaukee	93	65	72	103
Tietjen/Doctors Beach	Milwaukee		28	59	70
Cedar Beach	Ozaukee	47	59	71	85

Harrington State Park Beach	Ozaukee	20	52	64	103
General King	Sheboygan	10	21	38	63

**32) COMMENT: LAKE MICHIGAN NEARSHORE WATERS** – We urge listing near shore zones on the Great Lakes that have excessive phosphorus levels. Placing these waters on the impaired waters list would ensure that TMDLs are developed to correct the impairments. **(Alliance for Great Lakes)**

**RESPONSE:** While WDNR has numeric water quality criteria for total phosphorus which apply to near shore waters (NR102.06, part 5(a),(b)) for both Lake Michigan (7 ug/L) and Lake Superior (5 ug/L), and limited data are available, the primary reason for not including any nearshore waters on the 2012 303(d) list is because there is no accepted or established assessment protocol for listing and no clear means to delineate an area of impact. Without such protocols in place, no beaches or nearshore zones will be included in the 2012 303(d) list submitted to USEPA for excessive phosphorus. Because this issue is not limited to the State of Wisconsin, WDNR will attempt to work with USEPA and other Great Lakes states in the future to determine a protocol for collection and analysis of the data necessary to identify nearshore communities that may be affected by phosphorus or other pollutants. Until that time, WDNR will not prematurely identify any nearshore waters based on limited information.

**33) COMMENT: EXCESSIVE ALGAL GROWTH** – Phosphorus criteria for excessive algae must be applied to beaches and near shore waters as well as the whole lake when evaluating recreational use support. Extend eutrophication criteria and phosphorus standards due to excessive algae to assess impaired beaches. The Milwaukee Metropolitan Sewerage District (MMSD) has Lake Michigan water quality data as far back as 1975. **(Alliance for Great Lakes)**

**RESPONSE:**

Wisconsin’s Great Lakes phosphorus criteria are consistent with the recommendations of the International Joint Commission (IJC) for the Great Lakes Water Quality Agreement. However, assessment methods and impairment thresholds have not yet been developed for nearshore areas that would correspond to the Great Lakes criteria. Nearshore waters are influenced by complex and dynamic processes that are not yet well understood. As a step toward better understanding of these processes and developing appropriate assessment methods, in September 2011 the WDNR began a partnership with EPA Region 5 to develop a “Nearshore Model”. Results from this model should help WDNR develop consistent sampling protocols and assessment methods, and provide a better understanding of how to interpret available data.

Currently, WDNR has very limited nearshore data available. Those data that WDNR does have do not show annual medians that exceed the phosphorus criteria. WDNR also evaluated the phosphorus data provided during the public solicitation period by MMSD, which were from within the Milwaukee River to the breakwaters at Lake Michigan. This area is subject to the river phosphorus criteria of 100 mg/L, rather than the Great Lakes criteria of 7 mg/L (ch. NR 102.06, Wis. Adm. Code). The MMSD data did not exceed the applicable impairment thresholds.

## **SPECIFIC WATERBODIES**

**34) COMMENT: CRESCENT BEACH** – Crescent Beach, Lake Michigan (WBIC 20). The WDNR impaired waters search website states that *E. coli* data exceed listing thresholds for the 2012 assessment cycle. However this beach is currently proposed for delisting. Please explain the discrepancy and, if necessary, summarize the results used to propose the delisting of this water. If impairment thresholds were exceeded this water should remain on the 303(d) list. **(USEPA)**

**RESPONSE:** Crescent Beach is proposed for delisting because the *E. coli* monthly geometric means were below the 126 cfu/100 mL impairment threshold (5 year sample size total of 166 independent measurements). The WDNR impaired waters search website has been updated recently and an *E. coli* exceedance for Crescent beach in the 2012 assessment cycle was incorrect. Mapping tools on the website do not incorporate 2012 proposed listed/delisted waterbodies, which may be why this discrepancy was seen. In accordance with the data assessment, Crescent Beach is still proposed for delisting. The WDNR website was checked for beach listing discrepancies.

**35) COMMENT: CRESCENT BEACH** – Crescent Beach should not be removed from the impaired waters list. This beach is used by the Milwaukee Journal Sentinel as the “poster child” of pollution, *Cladophora*, runoff, and mismanagement. The Environmental Protection Agency and DNR must delve further in an honest analysis of why our community suffers from these huge algae blooms that stink and affect out quality of life, economy and tourism. **(Nancy Utesch, Kenosha, WI)**

**RESPONSE:** The WDNR and USEPA are both working to improve beach health along the Great Lakes. The WDNR beach impairment listings are based solely on *E. coli* levels and extensive measurements along Crescent Beach showed that it is no longer impaired in this way. Impairment assessment methodologies for macrophytes such as *Cladophora* and nearshore pollutants such as phosphorus are under development. Even though Crescent Beach has been removed from the impaired waters list it will still receive monitoring and management.

**36) COMMENT: STREAM C** – The WDNR received 32 emails and letters supporting the impairment listing of Stream C for copper and zinc toxicity. Of these, 17 stated that the Flambeau Mining Company should be held responsible for the pollution and for remediation of the site. **(Commenters #23-55 listed in Index of Commenters, including the following organizations: Protect Our Wolf River (POW’R), Nukewatch, Wisconsin Resources Protection Council, National Wildlife Federation, Northern Thunder Mining Sub Committee)**

**RESPONSE:** The WDNR appreciates input from citizens, environmental groups, and companies on the 303(d) listings.

**37) COMMENT: CENTRAL SANDS WATERS** – Several lake associations and management districts requested waterbodies be listed as impaired due to habitat impairment caused by hydrologic alterations in central Wisconsin. Groundwater pumping in the region has led to significantly reduced flows in area rivers and streams, and dramatic changes in lake levels. Waterbodies include:

- Long Lake, Waushara County
- Lake Huron, Waushara County
- Boelter Lake, Portage County
- Pleasant Lake, Waushara/Marquette County
- Pickerel Lake, Portage County
- Wolf Lake, Portage County
- Little Plover River, Portage County
- Stoltenberg Creek, Portage County

**(Wisconsin Association of Lakes, Inc., River Alliance of Wisconsin, Friends of the Tomorrow/Waupaca River, Huron Lake Association, Friends of the Little Plover River, Long Lake District, Boelter Lake Association, Pleasant Lake Management District)**

**RESPONSE:** There currently is no assessment methodology for hydrologic alterations due to groundwater pumping. Without such protocols in place, WDNR does not recommend modifications to the proposed to the list at this time. Measurements of a degraded biological community such as a macroinvertebrate or fish indices of biotic integrity would potentially enable these waters to be listed. Samples of phosphorus and chlorophyll a in the shallow lakes could also indicate impairment. WDNR will consider developing assessment methodology for hydrologic alterations for future versions of WisCALM.

**38) COMMENT: EAGLE AND JOOS VALLEY CREEKS** – (WBIC 1808400, RM 9.09 to 17.56 and WBIC 1808900). Please provide a summary of the data used to support the Eagle Creek delisting decision in the final 2012 303(d) and 305(d) report. Current reports available online are in draft form and do not contain all the data and illustrations that were used to propose delisting of this water segment. **(USEPA)**

**RESPONSE:** (See additional photo documentation provided in Attachment E1 at the end of this document.) Eagle Creek and Joos Valley Creek are two subwatersheds within the Waumandee Creek Priority Watershed project. These creeks were included in a cooperative study by USGS and WDNR from 1990 to 2007 about the effects of best-management practices (BMPs) on controlling nonpoint-source pollution in watersheds. Prior to BMP implementation in these watersheds, livestock were observed pasturing next to or standing in the water along both streams. Streambank erosion, pasturing, and grazing in woodlots were major sources of suspended solids to both Eagle and Joos Valley Creeks (*Graczyk, Walker, Bannerman, and Rutter, 2011*).

A total suspended solids (TSS) Total Maximum Daily Load (TMDL) report was approved by EPA in 2003 that addressed the degraded habitat impairment of Eagle and Joos Valley Creeks. BMPs such as animal-waste management (manure storage), stream bank protection (fencing and bank stabilization), and upland management (nutrient management plans) were implemented in Eagle and Joos Valley Creek watersheds from 1993 to 2000 to address the degraded habitat of these streams.

Lizhu Wang, John Lyons, and Paul Kanehl used a before-after-control-impact (BACI) experimental design to determine the effects of BMP implementation on stream habitat and biological communities in Eagle and Joos Valley Creeks (2002). It was determined that implementation of BMPs improved certain indicators of habitat quality in these creeks. Stream habitat rating scores and thalweg depth increased and stream bank erosion decreased significantly relative to values in paired reference streams (*Wang, Lyons, and Kanehl 2002*). In both Eagle and Joos Valley Creeks, the median concentrations of suspended solids and total phosphorus during base flow (which reflects land-use affected groundwater), and the median storm loads for each, were significantly lower after BMP installation along the streams (*Graczyk, Walker, Bannerman, and Rutter, 2011*). Thus, the TSS TMDL and degraded habitat impairment of both streams has been addressed.

It is important to note that while BMPs installed in the Eagle and Joos Valley creeks watershed have made significant improvements to water quality, the voluntary removal of a number of cows from the landscape may also be an important unintended contributor to water quality improvement. Of the 25 farms that had livestock at the beginning of the Waumandee Priority Watershed Project, only 7 farms had cattle by the end of the project. Since the remaining 7 farms did not increase their average herd size, there has been a large decrease in the number of cattle in these study areas (*Graczyk, Walker, Bannerman, and Rutter, 2011*). This decrease in cattle (especially on steep, erodible, and woodland soils) imitates the water quality benefits of BMPs like fencing and streambank protection, further improving water quality in these streams.

Refer to “Effects of Best Management Practices in Eagle and Joos Valley Creeks in the Waumandee Creek Priority Watershed, Wisconsin, 1990-2007,” Graczyk, David J., John F. Walker, Roger T. Bannerman, and Troy D. Rutter; 2011 and “Effects of Watershed Best Management Practices on Habitat and Fish in Wisconsin Streams,” Wang, Lizhu, John Lyons, and Paul, 2002.

**39) COMMENT: SILVER LAKE (BIG)** – (WBIC 107900). The water is listed in previous 303(d) lists to have contaminated sediments (as indicated under the ‘303(d) Category’ column). Ambient water toxicity data from the lake measure in August and October of 2010 indicated that no chronic or acute toxicity were evident on test fish, zooplankton, and algae species. Please indicate why WDNR elected not to test toxicity to macroinvertebrates, and explain if this testing is needed to remove a water under the contaminated sediments 303(d) category. Also, toxicity data for aquatic toxicant parameters, if they were

recorded, could not be located in the SWIMS database online. Please provide a summary of aquatic toxicant concentrations, or indicate where they can be located, if available. (USEPA)

**RESPONSE:** The Department considered conducting sediment or macroinvertebrate sampling but determined that ambient water column sampling was a sufficient approach for assessing this waterbody. After a thorough Department review of records, no documentation was found to corroborate the original 1998 listing of Big Silver Lake as impaired for aquatic toxicity. While the original listing indicated an “unknown” pollutant, and contaminated sediment as a source, recent consultation with regional DNR biologists and the local lake association determined that there was no indication of a historic source of sediment contamination, and therefore there was no indication of where sediment or macroinvertebrate sampling might be conducted to assess sediments for delisting the water. If there were current problems from sediment contamination, it would be expected that these should manifest in the water column. For these reasons, staff determined that the best approach was to conduct ambient toxicity testing, and notified EPA of this sampling approach before beginning the sampling. WDNR believes Big Silver Lake to not be impaired and maintains that it should be delisted for aquatic toxicity. The results from the aquatic toxicity tests conducted in 2011 are attached at the end of this document as Attachment E2.

**40) COMMENT: GERMAN VALLEY BRANCH – (WBIC 909200, RM 0.00 to 7.36).** This water is proposed to be moved from Category 4A to 2 in the draft list. Please provide a summary of data used to determine that the water is now meeting standards and any corroborating data if used. Data to make the determination that the water is meeting standards does not appear to meet minimum data requirements used to originally make an impairment determination (i.e., there are not two consecutive years of good or excellent MIBI or FIBI scores available). If the MIBI and FIBI’s observed in 2005 were used to corroborate one another, please clarify if that approach satisfies data requirements for moving a water from Category 4A to Category 2. (USEPA)

**RESPONSE:** Data for delisting this water is found at the end of this document in Attachment E3.

**41) COMMENT: MUSKY BAY – (WBIC 2390800)** It is requested that Musky Bay be listed as impaired for phosphorus for the 2012 assessment cycle. **(Courte Oreilles Lakes Association and Lac Courte Oreilles Band of Lake Superior Chippewa Indians (Tribe))**

**RESPONSE:** While Musky Bay of Lac Courte Oreilles was not initially on the draft list that was released for public comment, based on the addition of recent data and public comment, the bay is being added as impaired for Recreational Uses due to phosphorus criteria exceedances.

**42) COMMENT: MUSKY BAY – (WBIC 2390800)** The phosphorus criteria apply to the whole lake, and bays should not be evaluated independently.

- a) LCO bays are an integral part of LCO proper, accounting for 1/3 of the total surface area of LCO.
- b) The bays are directly connected to LCO and can exchange water and nutrients
- c) WisCALM 2010 does not provide specific guidance which justifies application of separate standards to different parts of the lake.

**(Courte Oreilles Lakes Association and Lac Courte Oreilles Band of Lake Superior Chippewa Indians (Tribe))**

**RESPONSE:** In the 2012 WisCALM guidelines (available on the WDNR site: <http://dnr.wi.gov/org/water/condition/wiscalm.htm>) Section 4.3 under ‘Whole Lake vs. Partial Lake Assessment’ it reads, “[I]n cases where a known or suspected localized pollution source is believed to cause impairment in only one portion of a lake (such as an isolated bay or well-defined lobe), biologists may consider assessing and listing that portion as impaired separate from the larger lake”. The specific inputs into Musky Bay, in addition to the bay being a well-defined lobe, allow WDNR to consider the bay separately. The WDNR continues to assess Musky Bay separately from the larger Lac Courte

Oreilles, and recommends that Musky Bay be listed as impaired, while Lac Courte Oreilles not be listed as impaired because data from the larger lake do not support listing.

**43) COMMENT: MUSKY BAY – (WBIC 2390800)** Other parameters, besides phosphorus in the water column should be addressed, including:

- a) Phosphorus concentrations in the sediment
- b) Aquatic invasive species (AIS); i.e. curly leaf pondweed
- c) Physical parameters, such as dissolved oxygen, pH, and water clarity
- d) Chlorophyll concentrations
- e) Fish and invertebrate metrics
- f) Fish flesh toxicants
- g) Qualitative habitat

**(Courte Oreilles Lakes Association and Lac Courte Oreilles Band of Lake Superior Chippewa Indians (Tribe))**

**RESPONSE:** For the 2012 assessment WDNR considered data for which there were developed assessment methods, including total phosphorus (water column), chlorophyll, dissolved oxygen, pH, and fish flesh toxicants. Based on exceedances of phosphorus, Musky Bay is now being recommended for listing as impaired for Recreational Uses. Dissolved Oxygen and pH did not indicate additional impairments, and there are no specific fish consumption advisories for Musky Bay. WDNR is working towards the development of assessment methods and listing criteria for aquatic macrophytes to determine attainment of the fish and aquatic life and recreation uses.

**44) COMMENT: MUSKY BAY & OUTSTANDING RESOURCE WATERS –** I detect a startling disconnect between the State's Outstanding Resource Waters (ORW) concept of "non-degradation" and the Federal Clean Water standard of "impairment"? In other words the WisCALM system allows an ORW to seriously degrade until they finally reach the level of "impaired". How do you handle an impaired bay within an ORW system? What standards are the bays compared to and who makes that determination?  
**(Frank Pratt, Hayward, WI)**

**RESPONSE:** Outstanding or Exceptional Resource Waters receive a high level of protection from permitted point source discharges under Wisconsin's antidegradation rules in ch. NR 207, Wis. Adm. Code.

Although these point source protections are in place, there are certain cases where an ORW or ERW has become degraded due to nonpoint pollution or other sources and is now on the impaired waters list. DNR recognizes that prevention of degradation of these waters is the goal, and in the future DNR staff may consider different protocols for evaluating ORWs and ERWs to respond to declining quality in these waterbodies. For ORWs/ERWs that have already been listed as impaired, they may be addressed through development of a Total Maximum Daily Load analysis, as are other impaired waters, but because there are usually few dischargers to these waters they may be best addressed through nonpoint best management practices.

WisCALM guidance for 2012 contains new protocols for listing individual bays of a larger lake as impaired, though we expect this to be used in few cases where the impairment does not stem from a whole-lake problem (see Section 4.3, under "Whole Lake vs. Partial Lake Assessment"). This is typically warranted when the geography of the lake is such that there is a physical barrier separating most of one portion of the lake from the main portion. In such cases, the partial lake area will typically be assigned its own Natural Community, which may differ from that of the greater lake. For instance, in the case of Musky Bay, a bay of Lac Courte Oreilles, the Natural Community of the lake is considered to be a Deep Lowland Drainage Lake, while Musky Bay is considered to be Shallow Lowland Drainage. The standards that the bay would be compared to would be the standards for the bay's Natural Community. Those standards are shown in WisCALM Tables 4A and 5.

**45) COMMENT: MUSKY BAY & OUTSTANDING RESOURCE WATERS** – (WBIC 2390800) LCO is designated as an outstanding resource water (ORW) under NR 102.10(1m)(a)17, and thus, may not be lowered in quality. **(Courte Oreilles Lakes Association and Lac Courte Oreilles Band of Lake Superior Chippewa Indians (Tribe))**

**RESPONSE:** DNR has confirmed that Lac Courte Oreilles is designated as an ORW under NR 102.10(1m)(a)17 and that NR 102.10(2) states that the water “may not be lowered in quality.” However, the antidegradation provisions apply to new or increased discharges. The Department may explore in the future whether additional protocols might be developed to better recognize and prevent degradation of ORWs/ERWs before they become impaired. See also the response to Comment #44 regarding protection of ORWs/ERWs.

**46) COMMENT: LAKE WINGRA** – (WBIC 805000) A recommendation that Lake Wingra be added to the impaired waters list for exceeding the chronic chloride toxicity water quality standards criterion of 375 mg/L. **(Steve Arnold, Chair – Friends of Lake Wingra)**

**RESPONSE:** Wisconsin’s acute chloride toxicity water quality standard criterion for lakes is 757 mg/L, and the chronic criteria is 395 mg/L. Based on the available data from the North Temperate Lakes Long Term Ecological Research database and the Madison Department of Public Health the chloride levels in Lake Wingra did not exceed either the acute or chronic thresholds. Within the last ten years chloride yearly averages ranged from 72 – 109 mg/L and no single data point exceeded 114 mg/L. Therefore, WDNR does not recommend listing Lake Wingra as impaired for chlorides at this time.

Some efforts are in progress to assess and reduce the impacts of chlorides in the Madison area. The discharge permit for Madison Metropolitan Sewerage District (MMSD) currently contains a chloride variance. As part of this variance they are required perform chloride source reduction to work towards chloride limit compliance. This project is in its infancy, but over time it should result in chloride reductions from stormwater in the Madison area. Additionally, a volunteer monitoring effort is underway to assess the impacts of road salt—a main source of chlorides—on urban waterways in Madison and Milwaukee. (<http://watermonitoring.uwex.edu/level3/UrbanRoadSalt.html>).

**47) COMMENT: ODANA POND** – (WBIC 10021231) A strong recommendation that Odana Pond be added to the impaired waters list for phosphorus and chloride related impairments. Public use is restricted due to harmful algal blooms and in 2008 the lake experienced a winter fish kill. Monitoring data shows substantial exceedances of both the acute and chronic chloride concentrations over the last six or more years. **(Steve Arnold, Chair – Friends of Lake Wingra)**

**RESPONSE:** Phosphorus and chlorophyll *a* levels both exceeded the impairment thresholds for FAL and Recreation. Odana Pond will be added to the 2012 303(d) list as impaired for phosphorus with a biological indicator of chlorophyll *a* under Fish and Aquatic Life and Recreational uses. A review of monitoring data also show that acute chloride levels were exceeded eight times in 2008-2010. Accordingly, Odana Pond will also be proposed for listing for chlorides, with the corresponding impairment of Acute Aquatic Toxicity. See additional information on Madison-area efforts to assess and reduce chlorides in the response to Comment #46.

**48) COMMENT: EAST TWIN RIVER (KROK CREEK)** – (WBIC 84000, RM 26.40 – 34.18) Listing of East Twin River between county highway B and highway 29 in Kewaunee Co was requested based on pollution from Agrapur/Trega Foods effluents, including high levels of chlorides. Additional pollutants included effluence from a cattle ranch. **(Mark Musial, Green Bay, WI and Lynn Utesch, Kenosha, WI)**



**RESPONSE:** Water chemistry and biological data from the East Twin River and the unnamed tributary from Trega Foods were examined, but there were insufficient chloride samples to make an assessment and the MIBI (Macroinvertebrate Index of Biotic Integrity) and FIBI (Fish Index of Biotic Integrity) results were conflicting. The river was not placed on the impaired waters list, but has been targeted for additional monitoring. Increased sampling is under way for the 2014 assessment cycle including chlorides, phosphorus, pH, and dissolved oxygen among other measurements.

**49) COMMENT: PIKE RIVER** – (WBIC 1300, RM 0.00-9.50) I monitored the Pike River at a site downriver from the recently removed dam monthly for five months in 2010 and six months in 2012. On every occasion during both years, the biotic index consisted only of macroinvertebrates that tolerate pollutants such as aquatic sowbugs and bloodworms. I do not know if phosphorus is the main pollutant here. I only know that the Pike River is seriously impaired. **(Ron Story, Kenosha, WI; macroinvertebrate data submitted with comment)**

**RESPONSE:** Thank you for the macroinvertebrate data. Your observations provide further evidence that this portion of Pike River should be listed as impaired. Pike River will remain on the proposed list of impaired waters.

**50) COMMENT: PIKE RIVER** – (WBIC 1300, RM 0.00-9.50) We support adding Pike River in Kenosha County to the Impaired Waters List. We have not let our dog walk in or drink from the Pike for years since a bacterial infection the veterinarian said was due to farm field runoff. We wouldn't dream of letting a child wade in the water. This is a far cry from the "fishable, swimmable, drinkable" goal for our state waters. **(Joe & Barbara Vass, Kenosha, WI)**

**RESPONSE:** Thank you for your comments in support of this proposed listing.

**51) COMMENT: BASS LAKE AND LONG LAKE** – (WBICs 969600 and 1001000) The Long and Bass Lake Association has recently heard the news that our lake is going to be labeled as a Mercury high lake? We have participated in testing through the DNR for at least 10 years. Do you know who I could talk to in order to clarify what this is all about – when was this testing done, by whom – what do the results mean and how would the results have gotten like this – or what are the contributing factors? I have always been given the impression that our population is healthy. This is concerning. **(Jean Lemke)**

**RESPONSE:** Waters are classified as impaired for a number of reasons including poor quality for swimming, fish health, and contaminants in sediment or fish. There are over 1000 waters (lakes and river segments) in Wisconsin that are currently on the impaired waters list due to mercury contamination in fish. Recently, largemouth bass from Bass-Long Lake in Lincoln County (T34 R08E S16) were found to have higher concentrations of mercury and as a result both lakes are proposed for addition to the impaired waters list\*. Mercury in the largemouth bass averaged 0.698 ppm (parts per million) and reached 0.99 ppm based on the 8 samples.

Wisconsin has fish consumption advice for all inland waters but some species from some waters should be eaten less frequently due to higher concentrations of mercury, PCBs, or other contaminants. Because of the mercury levels, additional advice was provided for Bass-Long Lake in 2010. We recommend that women of childbearing age and children under 15 not eat Largemouth bass from Bass-Long Lake and men and older women eat no more than 1 meal per month. All other species fall under the statewide general advisory (<http://dnr.wi.gov/fish/consumption>).

For more information about fish consumption advisories and mercury, or the specifics on samples collected at your lake, contact Candy Schrank at [candy.schrank@wisconsin.gov](mailto:candy.schrank@wisconsin.gov) or 608-267-7614. If you would like to discuss other aspects of lake management with your regional DNR lakes biologist, contact Kevin Gauthier at [Kevin.gauthier@wisconsin.gov](mailto:Kevin.gauthier@wisconsin.gov) or 715-365-8937.

\*Note: WDNR intended to list Long Lake as impaired on the draft list that was released for public comment, but it was inadvertently left off the list. This mistake has been corrected and it has been added.

**52) COMMENT: SWAN LAKE–** (WBIC 179800) I find it very hard to believe that Swan Lake in Columbia Cty is not polluted with PCBs and phosphorus. As the Fox River is polluted with both of these from Green Bay to the Illinois-Wisconsin border. Also the two lakes above Swan, both have these contaminants and more. Or is this just an oversight on this list. **(Jeff Taylor, Watertown, WI)**

**RESPONSE:** Swan Lake was assessed for phosphorus in the 2012 cycle and did not exceed threshold levels. The amount of chlorophyll *a*, however, did exceed thresholds so the lake was put on the Watch Waters list for further assessment. The Department does not currently have sufficient PCB data to assess levels in Swan Lake. WDNR does not recommend adding Swan Lake to the impaired list at this time.

**53) COMMENT: LAKE NOKOMIS–** (WBIC 1516500) Consumption of large game fish, walleye and northern of about 20 inches in length, from Lake Nokomis around 1995 caused dizziness and nausea. **(Roman T. Byrka, Wausau, WI)**

**RESPONSE:** Thank you for the information. Lake Nokomis, previously listed for mercury, was proposed for delisting in 2010. A general fish consumption guide can be found at <http://dnr.wi.gov/fish/consumption/FishAdvisoryweb2011.pdf>.

**54) COMMENT: POINT CREEK AND FISCHER CREEK –** The nutrient data I submitted for adding Point Creek and Fischer Creek to the Impaired Water List was earlier evaluated by the DNR. The results showed probable cause for adding these creeks. However, I now understand that the DNR requires biological information as well before making a decision. I've attached additional biological data which confirms my suspicions that these two creeks should be added to the Impaired Water List. The file "BIO 108 Stream Assessment Class Data Sheet-1.xls" contains sampling done by students at UW-Manitowoc under the supervision of Professors Abler and Hein. The results indicate high E.coli and a poor biotic index for both creeks. "Point.pdf" contains additional data for Point Creek. Please consider this additional information. Thank you for all the hard work necessary for the impaired water list. **(Russ Tooley; additional data attached to submittal)**

**RESPONSE:** Thank you for the additional data. Based on comments received from EPA and the public, WDNR will now be listing those waters that exceed phosphorus criteria but do not show demonstrated biological impairments in a new subcategory, 5P (see response to comments for #14-16). Based on your earlier submittal of phosphorus data, Point Creek exceeds applicable phosphorus criteria and has been added to the impaired waters list under category 5P. Fischer Creek did not "Clearly Exceed" the criteria and will therefore not be listed during the 2012 cycle; however, because the data indicated that it "May Exceed", further monitoring is recommended. Any additional monitoring data received will be reassessed for the 2014 listing cycle.

## **OTHER**

**55) COMMENT: GENERAL –** What are your plans for cleaning up the impaired waters and not adding more lakes to your list next year? **(Mark Vukovich)**

**RESPONSE:** Once a water is defined as impaired a TMDL for the pollutant is created. This is essentially a pollutant "budget" that is then implemented for restoration of that waterbody. Details on restoration and Wisconsin's impaired waters process are available at <http://dnr.wi.gov/org/water/wm/wqs/303d/>.

**56) COMMENT: TMDLS** – Can you elaborate on how the baseline TMDL values are calculated or determined within a given watershed. **(Chris Stempa)**

**RESPONSE:** A Total Maximum Daily Load (TMDL) is the total amount of a pollutant a waterbody can receive and still meet water quality standards.  $TMDL = Wasteload\ Allocation\ (WLA) + Load\ Allocation\ (LA) + Margin\ of\ Safety\ (MOS)$ . WLA is the pollutant load from point sources such as wastewater facilities and Concentrated Animal Feeding Operations (CAFOs). LA is the pollutant load from nonpoint sources such as agricultural runoff and non-regulated urban areas. The MOS accounts for any uncertainty in the analysis and modeling. Computer models that utilize weather, topography, soil types, land use and other data inputs calculate the pollutant loads. Visit <http://dnr.wi.gov/topic/TMDLs/> for more information on TMDLs, their development, implementation, and current projects.

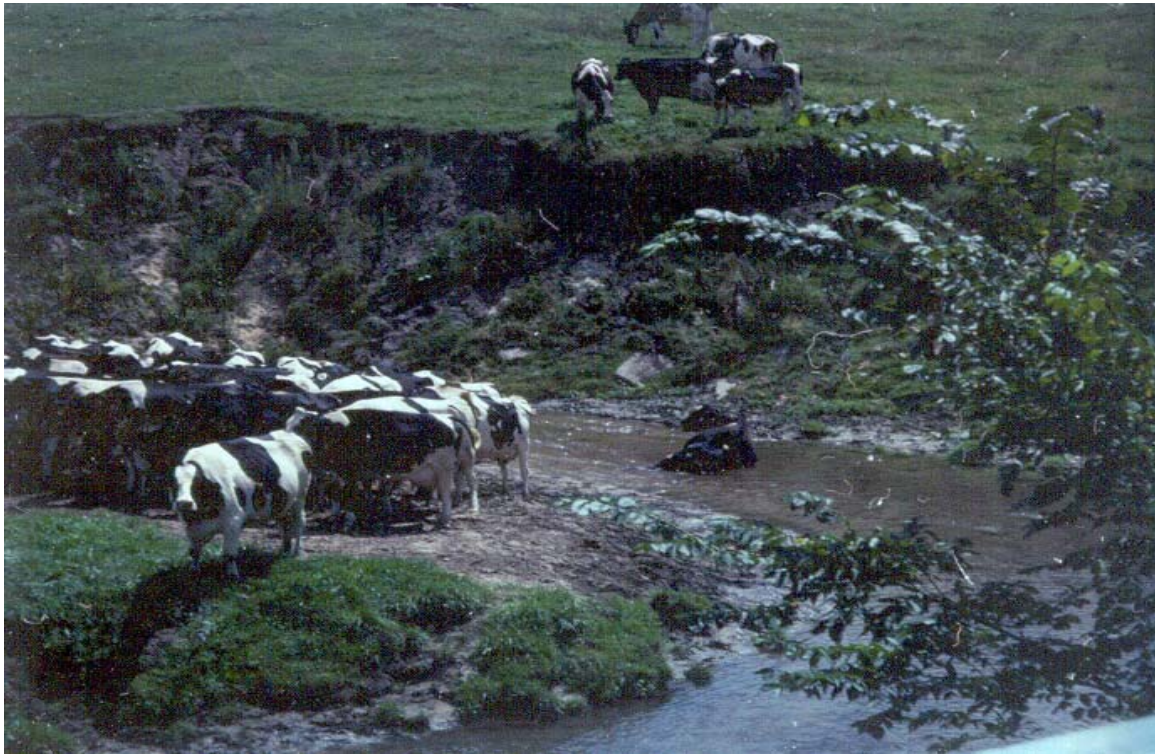
**57) COMMENT: MINING** – I think mining is inevitable in northern Wisconsin. But it must be done responsibly! Our natural resources must be protected. Even though the legislative aim is to take away your protective abilities, you are still the last line of defense to protect our beautiful state. Please name all the problems created by the mining industry! The people have the right to know. **(Renee Ketchum, Hayward, WI)**

**RESPONSE:** Thank you for your comments. Mining topics and WDNR documents on impacts are available at <http://dnr.wi.gov/topic/Mines/>. The EPA has documents available outlining potential environmental impacts, including one specifically on hardrock mining, which is available at <http://www.epa.gov/npdes/pubs/appb.pdf>.



**Attachment E1.** Supporting photo documentation for delisting of Eagle and Joos Valley Creeks (in response to Comment #38).

**Eagle and Joos Valley Creeks before and after management practices**



Cows in stream and gully erosion before stabilization



Gully erosion before stabilization





Mud Bank on Joos Valley Creek before management practices



Installation of rip-rapping and stabilization of streambank





Lower Eagle Creek after restoration



Joos Valley Creek after management practices.

**Attachment E2.** Aquatic toxicity test results in support of delisting (Big) Silver Lake (in response to Comment #39).

**Results from August, 2010 aquatic toxicity testing of Big Silver Lake**

**CORRESPONDENCE/MEMORANDUM**

**State of Wisconsin**

DATE: September 23, 2010

TO: Bob Masnado – WT/3

FROM: Kari Fleming - Biomonitoring Coordinator, Bureau of Watershed Management

SUBJECT: **SLH Biomonitoring Results for Silver Lake Ambient Sites**

Attached is a copy of the "Ambient Toxicity Test Report Form", which summarizes the toxicity tests completed by the University of Wisconsin-Madison's State Laboratory of Hygiene (SLH) with samples collected in August, 2010 from Silver Lake (Waushara County).

**Acute Toxicity Tests**

No toxicity was observed. No statistical difference was noted between ambient lake samples and lab water controls. Please see the attached report for more details.

**Chronic Toxicity Tests**

No toxicity was observed to *Pimephales promelas* (fathead minnow) or *Selenastrum capricornutum* (algae). No statistical difference was noted between ambient lake samples and lab water controls. The *Ceriodaphnia dubia* (water flea) chronic test was inconclusive due to poor performance of the lab organisms. Please see the attached report for more details.

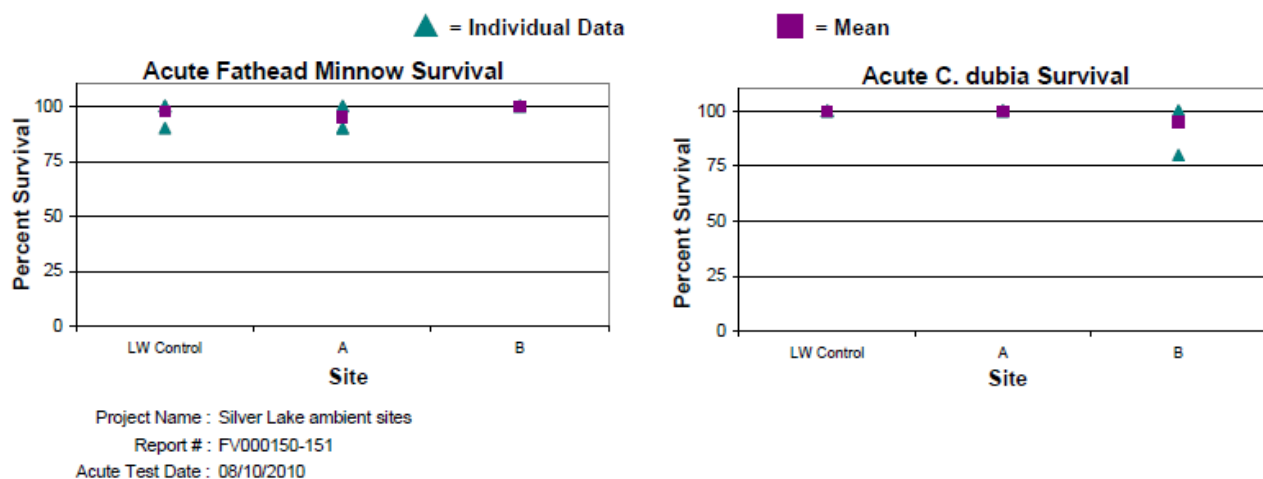
If you have any questions concerning this report or biomonitoring in general, please call me at (608) 267-7663 or email to: [Kari.Fleming@dnr.state.wi.us](mailto:Kari.Fleming@dnr.state.wi.us).

# AMBIENT TOXICITY TEST REPORT FORM

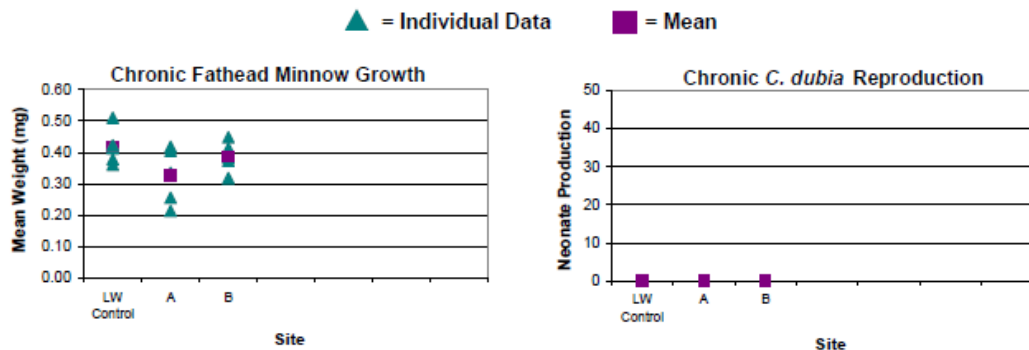
GENERAL INFORMATION									
PROJECT NAME: <b>Silver Lake ambient sites</b>				LABORATORY NAME: <b>Wisconsin State Laboratory of Hygiene</b>					
REPORT TYPE: <input checked="" type="checkbox"/> Original <input type="checkbox"/> Amended				REPORT NUMBER: <b>FV000150-151</b>					
				If amended, original report number:					
SAMPLE INFORMATION									
SAMPLE NO.	LAB NO.	FIELD NO.	SITE DESCRIPTION				STATION NO. (SWIMS, STORET or LAT/LONG)		
1	FV000150	A	Sample Location A						
2	FV000151	B	Sample Location B						
3									
4									
5									
6									
SAMPLE NO.	SAMPLE COLLECTION			SAMPLE TEMP. °C		pH at LAB	HAND DELIVER? (If Yes, ≤ 4 hr?)	HOLD TIME ≤ 36 HR?	SAMPLE ACCEP- TABLE?
	SAMPLE TYPE	SAMPLING DATE	DATE at LAB	COLLECTION	AT LAB				
1	GRAB	08/08/2010	08/10/2010	26.1	3.7	8.44	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2	GRAB	08/08/2010	08/10/2010	25.6	3.8	8.56	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3							<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
4							<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
5							<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
6							<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe any unusual conditions during sampling that may influence test results. (see Part 6.1.2 of the Methods Manual for examples.)									
COMMENTS:									
TEST INFORMATION									
ACUTE					CHRONIC				
Date Test Initiated: <b>08/10/2010</b>					Date Test Initiated: <b>08/10/2010</b>				
QA/QC CONDITIONS									
						ACUTE		CHRONIC	
Temperatures maintained during test? (20 ± 1°C or 25 ± 1°C)						<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Dissolved oxygen > 4.0 mg/l throughout test?						<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
pH maintained within 6.0 - 9.0 s.u. throughout test?						<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Concurrent or monthly reference tests within acceptable limits?						<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Tests conducted in a carbon dioxide atmosphere throughout test?						<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Light intensity for <i>Selenastrum</i> maintained throughout test? (4,300 ± 430 lux)						<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Were samples modified prior to testing? (ex. filtration, aeration, chem addition)						<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
COMMENTS:									
WATER CHEMISTRY									
(All values reported in mg/L, except pH and Conductivity)									
SAMPLE TYPE	SAMPLE NO.	HARDNESS	ALKALINITY	TOTAL AMMONIA	DISSOLVED OXYGEN	pH (s.u.) After Warming	Conductivity (µS)		
SITES	1	112	120	<0.015	9.4	8.48	257		
	2	124	120	<0.015	9.3	8.61	273		
LAB WATER	MHW	84	65	NA	8.2	8.42	312		
	DC	172	280	NA	8.7	8.84	619		
COMMENTS: MHW = Moderately hard water is used as the lab control water for the <i>Ceriodaphnia dubia</i> & <i>Selenastrum</i> tests. DC = Dechlorinated Madison tap water is used as the lab control for the fathead minnow test. For ammonia analysis, limit of detection (LOD) is 0.015 mg/L.									



ACUTE TEST CONTROL PERFORMANCE								
<b>LAB WATER CONTROLS</b>								
Fathead Minnow			<i>Ceriodaphnia dubia</i>					
Survival $\geq$ 90%			Survival $\geq$ 90%					
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
COMMENTS:								
ACUTE TEST DATA								
SPECIES	SITE DESCRIPTION		Percent Survival By Replicate				Mean Percent Survival	Statistical Significance*
			1	2	3	4		
Fathead Minnow	LC	LW Control	100	100	100	90	97.5	A
	1	A	100	90	90	100	95.0	A
	2	B	100	100	100	100	100.0	A
Age of Organism: <div style="background-color: yellow; display: inline-block; width: 20px; height: 10px; vertical-align: middle;"></div> 4 Days								
COMMENTS: <small>Please describe any unusual behavior and/or appearance of organisms. (see Part 6.1.2 of the Methods Manual for ex.)</small> * Samples with the same letter are not statistically different from each other.								
SPECIES	SITE DESCRIPTION		Percent Survival By Replicate				Mean Percent Survival	Statistical Significance*
			1	2	3	4		
<i>Ceriodaphnia dubia</i>	LC	LW Control	100	100	100	100	100.0	A
	1	A	100	100	100	100	100.0	A
	2	B	100	100	80	100	95.0	A
Age of Organism: < 24 Hours Old								
COMMENTS: <small>Please describe any unusual behavior and/or appearance of organisms. (see Part 6.1.2 of the Methods Manual for ex.)</small> * Samples with the same letter are not statistically different from each other.								



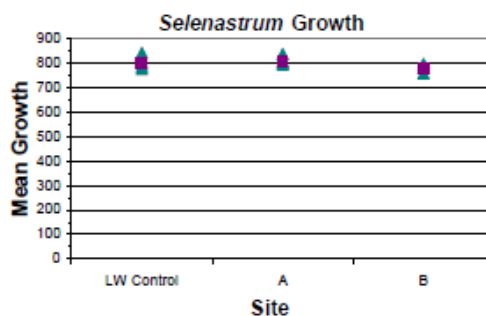
CHRONIC TEST CONTROL PERFORMANCE														
LAB WATER CONTROLS														
<b>Fathead Minnow</b>			<b><i>Ceriodaphnia dubia</i></b>											
Survival > 80%			Survival > 80%											
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			<input type="checkbox"/> Yes <input type="checkbox"/> No											
> 0.25 mg/fish			> 15 neonates/female											
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			<input type="checkbox"/> Yes <input type="checkbox"/> No											
Survival Weight CV < 40%			Reproduction CV < 40%											
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			<input type="checkbox"/> Yes <input type="checkbox"/> No											
Survival Weight % CV = 14			Reproduction %CV= #DIV/0!											
			> 80% 3rd brood											
			<input type="checkbox"/> Yes <input type="checkbox"/> No											
			< 20% males											
			<input type="checkbox"/> Yes <input type="checkbox"/> No											
COMMENTS:														
CHRONIC TEST DATA														
SPECIES	SITE DESCRIPTION		MEAN % SURVIVAL	MEAN DRY BIOMASS PER REPLICATE PAIR (mg)					MEAN BIOMASS (mg)	Statistical Significance*				
				1	2	3	4	5						
Fathead Minnow Growth & Survival Test	LC	LW Control	100	0.510	0.413	0.378	0.360	0.423	0.417	A				
		LW Survival Weight		0.510	0.413	0.378	0.360	0.423						
	1	A	85	0.213	0.255	0.418	0.335	0.405	0.325	A				
	2	B	95	0.413	0.373	0.448	0.383	0.318	0.387	A				
Please describe any unusual behavior and/or appearance of organisms.(see Part 6.1.2 of the Methods Manual for ex.)														
COMMENTS: * Samples with the same letter are not statistically different from each other.														
SPECIES	SITE	NEONATE PRODUCTION BY REPLICATE										MEAN NEONATES	% ADULT SURVIVAL	Statistical Significance*
		1	2	3	4	5	6	7	8	9	10			
<i>C. dubia</i> Reproduction & Survival Test	LC											#DIV/0!		
	1											#DIV/0!		
	2											#DIV/0!		
Male Production ≤ 20% Over All Treatments?											<input type="checkbox"/> Yes <input type="checkbox"/> No			
Please describe any unusual behavior and/or appearance of organisms.(see Part 6.1.2 of the Methods Manual for ex.)														
COMMENTS: <i>C. dubia</i> chronic test was inconclusive due to poor performance of the organisms in control lab water. The poor performance is a result of problems we were experiencing with our <i>C. dubia</i> culture at the time of this test.														



Project Name : Silver Lake ambient sites  
 Report # : FV000150-151  
 Chronic Test Date : 08/10/2010

CHRONIC TEST CONTROL PERFORMANCE														
LAB WATER CONTROLS														
Selenastrum														
≥ 1x10 <sup>5</sup> cells/ml														
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No														
CV < 20%														
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No														
%CV = 4														
GROWTH MEASUREMENT PER REPLICATE														
SPECIES	SITE DESCRIPTION		Blank	1		2		3		4		MEAN GROWTH	%CV	Statistical Significance*
				Initial	Adjusted	Initial	Adjusted	Initial	Adjusted	Initial	Adjusted			
Selenastrum capricornutum GROWTH TEST	LC	LW Control	0	801	801	839	839	786	786	774	774	800	4	A
	1	A	0	804	804	800	800	793	793	834	834	808	2	A
	2	B	0	794	794	780	780	757	757	782	782	778	2	A
Test Type: <input type="checkbox"/> flask <input checked="" type="checkbox"/> microplate      Endpoint: <input type="checkbox"/> count <input type="checkbox"/> spec. <input checked="" type="checkbox"/> fluor.														
Please describe any unusual appearance of organisms. (see Part 6.1.2 of the Methods Manual for ex.) COMMENTS: * Samples with the same letter are not statistically different from each other.														

▲ = Individual Data      ■ = Mean



Project Name : Silver Lake ambient sites  
 Report # : FV000150-151  
 Chronic Test Date : 08/10/2010

*I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I also certify that these results relate only to these samples.*

LAB REPRESENTATIVE:	Amy Mager	SIGNATURE:	
DATE:	9/15/2010		
PHONE:	(608) 224-6230	WDNR LAB CERT #:	113133790
LAB ADDRESS:	Wisconsin State Laboratory of Hygiene, 2601 Agriculture Drive, Madison, WI 53718		
REVIEWED BY:	Steve Geis	DATE:	09/21/2010
PERMITTEE		SIGNATURE:	
PHONE:		DATE:	

Send all pages of this form (plus any attachments or additional information which you believe to be relevant to the test) to: Biomonitoring Coordinator, Bureau of Watershed Management, Department of Natural Resources, 101 South Webster St., P.O. Box 7921, Madison, WI 53707-7921.

Copies of the State of Wisconsin Aquatic Life Toxicity Testing Methods Manual (Methods Manual) and the WET Guidance Document can be obtained from the WDNR Biomonitoring Coordinator at the address given above or at:  
<http://dnr.wi.gov/org/water/wm/ww/biomon/>

TO BE COMPLETED BY THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES		
Results Entered Into Database? <input type="checkbox"/> Yes <input type="checkbox"/> No		
COMMENTS:		
REVIEWED BY:	Kari Fleming	DATE: September 23, 2010
CC:	Bob Masnado - WT/3	

Project Name : Silver Lake ambient sites  
 Report # : FV000150-151  
 Test Date : 08/10/2010

CORRESPONDENCE/MEMORANDUM

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DATE: November 19, 2010

TO: Bob Masnado – WT/3

FROM: Kari Fleming - Biomonitoring Coordinator, Bureau of Watershed Management

SUBJECT: **SLH Biomonitoring Results for Silver Lake Ambient Sites (sampling event #2)**

Attached is a copy of the "Ambient Toxicity Test Report Form", which summarizes the toxicity tests completed by the University of Wisconsin-Madison's State Laboratory of Hygiene (SLH) with samples collected in October, 2010 from Silver Lake (Waushara County).

Acute Toxicity Tests

No toxicity was observed to *Pimephales promelas* (fathead minnow) or *Ceriodaphnia dubia* (water flea). See the report for a statistical interpretation of the data.

Chronic Toxicity Tests

No toxicity was observed to *Pimephales promelas* (fathead minnow), *Ceriodaphnia dubia* (water flea) or *Selenastrum capricornutum* (algae). See the report for a statistical interpretation of the data.

If you have any questions concerning this report or biomonitoring in general, please call me at (608) 267-7663 or email to: [Kari.Fleming@dnr.state.wi.us](mailto:Kari.Fleming@dnr.state.wi.us).

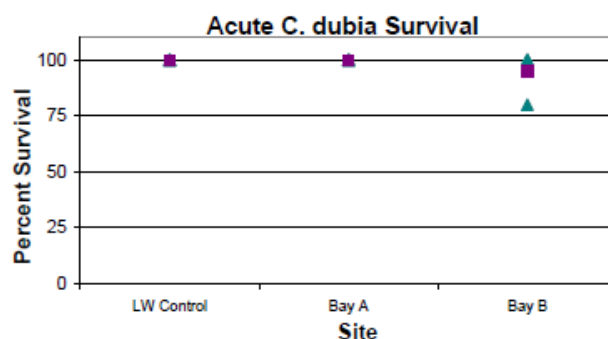
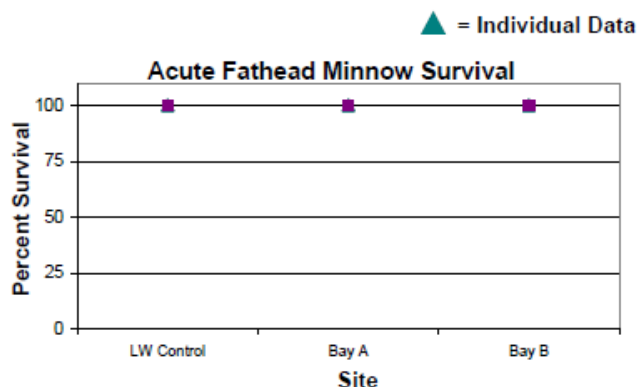
Cc:

# AMBIENT TOXICITY TEST REPORT FORM

GENERAL INFORMATION									
PROJECT NAME: <b>Silver Lake ambient sites, sample event #2</b>				LABORATORY NAME: Wisconsin State Laboratory of Hygiene					
REPORT TYPE: <input checked="" type="checkbox"/> Original <input type="checkbox"/> Amended				REPORT NUMBER: FV000266-267					
				If amended, original report number:					
SAMPLE INFORMATION									
SAMPLE NO.	LAB NO.	FIELD NO.	SITE DESCRIPTION				STATION NO. (SWIMS, STORET or LAT/LONG)		
1	FV000266	Bay A	Sample Location A						
2	FV000267	Bay B	Sample Location B						
3									
4									
5									
6									
SAMPLE NO.	SAMPLE COLLECTION			SAMPLE TEMP. °C		pH at LAB	HAND DELIVER? (If Yes, ≤ 4 hr?)	HOLD TIME ≤ 36 HR?	SAMPLE ACCEP- TABLE?
	SAMPLE TYPE	SAMPLING DATE	DATE at LAB	COLLECTION	AT LAB				
1	GRAB	10/25/2010	10/27/2010	11.1	2.0	8.23	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2	GRAB	10/25/2010	10/27/2010	11.1	2.1	8.18	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3							<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
4							<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
5							<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
6							<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe any unusual conditions during sampling that may influence test results. (see Part 6.1.2 of the Methods Manual for examples.)									
COMMENTS:									
TEST INFORMATION									
ACUTE					CHRONIC				
Date Test Initiated: 10/27/2010					10/27/2010				
QA/QC CONDITIONS									
						ACUTE		CHRONIC	
Temperatures maintained during test? (20 ± 1°C or 25 ± 1°C)						<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Dissolved oxygen ≥ 4.0 mg/l throughout test?						<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
pH maintained within 6.0 - 9.0 s.u. throughout test?						<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Concurrent or monthly reference tests within acceptable limits?						<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Tests conducted in a carbon dioxide atmosphere throughout test?						<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Light intensity for <i>Selenastrum</i> maintained throughout test? (4,300 ± 430 lux)						<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Were samples modified prior to testing? (ex. filtration, aeration, chem addition)						<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
COMMENTS: Temperature in algae test was low on day 1 due to failure of the incubator test was placed in (21.0 C). Test was moved to a shaker with an internal temperature control. Temperatures were within range on days 2 and 3, but were slightly high on day 4 before test was shut down (25.9 - 26.8 C).									
WATER CHEMISTRY									
(All values reported in mg/L, except pH and Conductivity)									
SAMPLE TYPE	SAMPLE NO.	HARDNESS	ALKALINITY	TOTAL AMMONIA	DISSOLVED OXYGEN	pH (s.u.) After Warming	Conductivity (µS)		
SITES	1	136	125	0.105	8.8	8.23	263		
	2	128	125	0.107	8.9	8.06	262		
LAB WATER	MHW	88	70	NA	8.4	8.08	284		
	DC	128	250	NA	8.5	8.80	564		
COMMENTS: MHW = Moderately hard water is used as the lab control water for the <i>Ceriodaphnia dubia</i> & <i>Selenastrum</i> tests. DC = Dechlorinated Madison tap water is used as the lab control for the fathead minnow test. For ammonia analysis, limit of detection (LOD) is 0.015 mg/L, limit of quantification (LOQ) is 0.048 mg/L.									



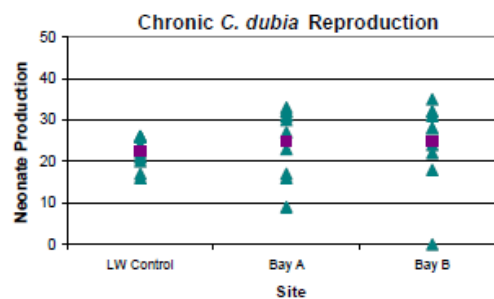
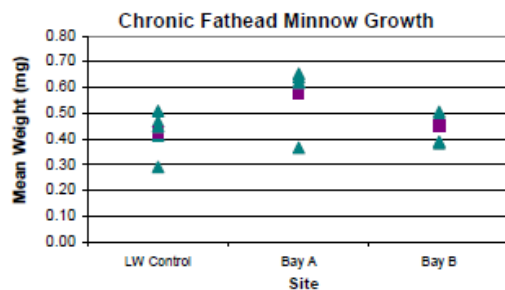
ACUTE TEST CONTROL PERFORMANCE								
<b>LAB WATER CONTROLS</b>								
Fathead Minnow			Ceriodaphnia dubia					
Survival > 90%			Survival > 90%					
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
COMMENTS:								
<b>ACUTE TEST DATA</b>								
SPECIES	SITE DESCRIPTION		Percent Survival By Replicate				Mean Percent Survival	Statistical Significance*
			1	2	3	4		
Fathead Minnow  Age of Organism: 9 Days	LC	LW Control	100	100	100	100	100.0	A
	1	Bay A	100	100	100	100	100.0	A
	2	Bay B	100	100	100	100	100.0	A
Please describe any unusual behavior and/or appearance of organisms. (see Part 6.1.2 of the Methods Manual for ex.)								
COMMENTS: * Samples with the same letter are not statistically different from each other.								
SPECIES	SITE DESCRIPTION		Percent Survival By Replicate				Mean Percent Survival	Statistical Significance*
			1	2	3	4		
Ceriodaphnia dubia  Age of Organism: < 24 Hours Old	LC	LW Control	100	100	100	100	100.0	A
	1	Bay A	100	100	100	100	100.0	A
	2	Bay B	80	100	100	100	95.0	A
Please describe any unusual behavior and/or appearance of organisms. (see Part 6.1.2 of the Methods Manual for ex.)								
COMMENTS: * Samples with the same letter are not statistically different from each other.								



Project Name : Silver Lake ambient sites, sample event #2  
 Report # : FV000266-267  
 Acute Test Date : 10/27/2010

CHRONIC TEST CONTROL PERFORMANCE														
LAB WATER CONTROLS														
<b>Fathead Minnow</b>				<b><i>Ceriodaphnia dubia</i></b>										
Survival > 80% <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Survival > 80% <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										
> 0.25 mg/fish <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				> 15 neonates/female <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										
Survival Weight CV < 40% <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Reproduction CV < 40% <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										
Survival Weight % CV = 18				Reproduction %CV= 17										
				> 80% 3rd brood <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										
				< 20% males <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										
COMMENTS:														
CHRONIC TEST DATA														
SPECIES	SITE DESCRIPTION		MEAN % SURVIVAL	MEAN DRY BIOMASS PER REPLICATE PAIR (mg)					MEAN BIOMASS (mg)	Statistical Significance*				
				1	2	3	4	5						
Fathead Minnow Growth & Survival Test	LC	LW Control	89	0.467	0.413	0.508	0.290	0.448	0.425	A				
	LW Survival Weight			0.467	0.413	0.508	0.387	0.597						
	1	Bay A	95	0.620	0.365	0.653	0.640	0.618	0.579	A				
	2	Bay B	95	0.480	0.495	0.505	0.388	0.383	0.450	A				
Please describe any unusual behavior and/or appearance of organisms. (see Part 6.1.2 of the Methods Manual for ex.)														
COMMENTS: * Samples with the same letter are not statistically different from each other.														
SPECIES	SITE	NEONATE PRODUCTION BY REPLICATE										MEAN NEONATES	% ADULT SURVIVAL	Statistical Significance*
		1	2	3	4	5	6	7	8	9	10			
<i>C. dubia</i> Reproduction & Survival Test	LC	21	26	17	22	24	20	26	26	26	16	22	90	A
	1	27	23	17	32	9	33	32	31	16	30	25	90	A
	2	22	32	32	28	24	18	28	0	35	31	25	100	A
Male Production ≤ 20% Over All Treatments?											<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Please describe any unusual behavior and/or appearance of organisms. (see Part 6.1.2 of the Methods Manual for ex.)														
COMMENTS: * Samples with the same letter are not statistically different from each other.														

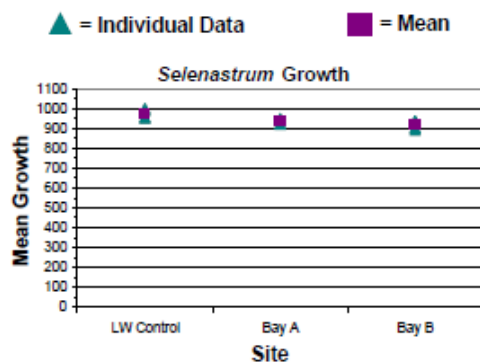
▲ = Individual Data      ■ = Mean



Project Name : Silver Lake ambient sites, sample event #2  
 Report # : FV000266-267  
 Chronic Test Date : 10/27/2010



CHRONIC TEST CONTROL PERFORMANCE														
<b>LAB WATER CONTROLS</b>														
<i>Selenastrum</i>														
≥ 1x10 <sup>6</sup> cells/ml <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No														
CV < 20% <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No														
%CV = 3														
GROWTH MEASUREMENT PER REPLICATE														
SPECIES	SITE DESCRIPTION		Blank	1		2		3		4		MEAN GROWTH	%CV	Statistical Significance*
				Initial	Adjusted	Initial	Adjusted	Initial	Adjusted	Initial	Adjusted			
<i>Selenastrum capricornutum</i> GROWTH TEST	LC	LW Control	0	952	952	1000	1000	955	955	991	991	975	3	A
	1	Bay A	0	935	935	919	919	939	939	948	948	935	1	B
	2	Bay B	0	905	905	893	893	936	936	935	935	917	2	B
Test Type: <input type="checkbox"/> flask <input checked="" type="checkbox"/> microplate      Endpoint: <input type="checkbox"/> count <input type="checkbox"/> spec. <input checked="" type="checkbox"/> fluor.														
Please describe any unusual appearance of organisms. (see Part 6.1.2 of the Methods Manual for ex.) <b>COMMENTS:</b> *Samples with the same letter are not statistically different from each other. Temperature in algae test was low on day 1 due to failure of the incubator test was placed in (21.0 C). Test was moved to a shaker with an internal temperature control. Temperatures were within range on days 2 and 3, but were slightly high on day 4 before test was shut down (25.9 - 26.8). While algae growth at both sampling sites was statistically different from that in the control, there was not a toxic effect. Algal growth was good in the control and both samples. The statistical difference arose due to the low variability in the data.														



Project Name : Silver Lake ambient sites, sample event #2  
 Report # : FV000266-267  
 Chronic Test Date : 10/27/2010

*I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I also certify that these results relate only to these samples.*

LAB REPRESENTATIVE:	Amy Mager	SIGNATURE:	
DATE:	11/19/2010		
PHONE:	(608) 224-6230	WDNR LAB CERT #:	113133790
LAB ADDRESS:	Wisconsin State Laboratory of Hygiene, 2601 Agriculture Drive, Madison, WI 53718		
REVIEWED BY:	Steve Geis	DATE:	12/06/2010
PERMITTEE		SIGNATURE:	
PHONE:		DATE:	

Send all pages of this form (plus any attachments or additional information which you believe to be relevant to the test) to:  
 Biomonitoring Coordinator, Bureau of Watershed Management, Department of Natural Resources, 101 South Webster St.,  
 P.O. Box 7921, Madison, WI 53707-7921.

Copies of the State of Wisconsin Aquatic Life Toxicity Testing Methods Manual (Methods Manual) and the WET Guidance Document can be obtained from the WDNR Biomonitoring Coordinator at the address given above or at:  
<http://dnr.wi.gov/org/water/wm/www/biomon/>

TO BE COMPLETED BY THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES		
Results Entered Into Database? <input type="checkbox"/> Yes <input type="checkbox"/> No		
COMMENTS:		
REVIEWED BY:	Kari Fleming	DATE: December 15, 2010
CC:	Bob Masnado - WT/3	
	Rob McClennan - NER	

Project Name : Silver Lake ambient sites, sample event #2  
 Report # : FV000266-267  
 Test Date : 10/27/2010

**Attachment E3.** Data documentation to support delisting of German Valley Branch (in response to Comment #40).

Introduction:

German Valley Creek is within Gordan Creek Watershed, and within the greater Sugar Pecatonica River Basin. While the upper half of the stream can generally be regarded as a “cool” water system, the lower half, augmented by higher spring flow, generally has colder water temperatures than the upper half. It is on the state’s 303(d) list of impaired waters because of habitat degradation caused by sedimentation, due to cropland and bank erosion, stream bank grazing, and barnyard runoff (4). German Valley Branch was originally listed in 1998. The TMDL for this listing was approved in 2005. This water is proposed as a delist candidate in 2012. Assessments conducted before and after TMDL implementation show that stream habitat and biological condition have improved and the stream now meets applicable water quality standards and designated uses (9/30/2011 comment in **WATERS**).

According to the “Wisconsin Consolidated Assessment and Listing Methodology (WisCALM) Report 2012,” and the “USEPA Decision Document for the Approval of the Sugar Pecatonica TMDL 875300,” though sediment has been determined to be the pollutant of concern in the Sugar Pecatonica watershed [including German Valley Branch], WDNR will be monitoring the aquatic communities to determine the effectiveness of the TMDL implementation, since aquatic life is the designated use being affected. Various measures, such as biotic indices ( $IBI \geq 50$ ) and sustainable fishery year classes (I and II), will be used as surrogate targets in order to assess whether the goal of meeting the designated uses for each stream will be met (6).

According to WisCALM, the same methodology must be used to delist a lake, stream or river as was used to list the water (5). German Valley Branch was listed based on “best professional judgment,” and is being recommended for de-listing based on the same “best professional judgment” by the WDNR staff most familiar with this waterbody (5).

Discussion:

The goal of the Sugar-Pecatonica TMDLs is to re-establish a balanced and sustainable aquatic community consistent with the water quality standards designated uses (1). Previously, under its impaired condition, German Valley Branch only supported a warm water forage fishery. Recent monitoring indicates that the stream now supports a cold water fish community. Due to considerable improvements in agricultural conservation since the late 1970s and early 1980s, monitoring data supports that much of the sediment impairment for the Sugar-Pecatonica watersheds (containing German Valley Branch) occurred previous to the implementation of current conservation practices (3). German Valley especially, has shown signs of improvement over the last several years, and is now considered to be meeting its designated use. German Valley Branch and Syftstad Creek now serve as reference streams for the remaining TMDLs in the Sugar-Pecatonica River Basin (3).

In 2010, fisheries management designated the entire German Valley Branch as a “Class II” trout stream, meaning that the stream may have some natural reproduction, but needs stocking to maintain a desirable fishery. This stream has good survival and carryover of adult trout. It is, therefore, recommended that German Valley Creek be removed from the state’s list of impaired waters (2).

In DNR biologist Jim Amrhein’s report, two to four consecutive years of post-rehabilitation data are summarized in Tables 4a - 4e. The data show that MIBI and FIBI scores have all increased from “very poor,” “poor,” and “fair” (pre-rehabilitation), to very high “fair” (almost “good”), “good,” and “excellent” scores (4). All of the Habitat scores moved up a category from pre- to post-rehabilitation (from “fair” to “good,” or “good” to “excellent”). Multiple year classes of trout indicate adequate survival from one year to the next. Though brook trout were stocked into the stream in 2009, brook trout were showing up in the surveys (likely migrating up from Gordon Creek) even before this stocking (2).

The Wisconsin Department of Natural Resources (WDNR) uses four levels of condition to represent waters' placement in the overall water quality continuum. Waters described as excellent and good clearly attain each assessed designated use; waters described as fair are also meeting their designated uses, but may be in a state that warrants additional monitoring/restoration in the future to assure water conditions are not declining. Waters that are described as poor may be considered "impaired" and added to the Impaired Waters List in accordance with Section 303(d) of the federal Clean Water Act (5).

Response: (by Jim Amrhein – South Central Region Biologist)

1) The cold IBI as it is written considers brook trout streams to be the highest quality coldwater stream. In order to obtain an "excellent" rating (90 or higher), brook trout must be present. Although brook trout have been found in German Valley, water temperature monitoring shows that this system would not be optimum for establishment of significant brook trout populations. Also, since brown trout dominate the system, they often out-compete brook trout. In the absence of brook trout, the highest score one can get for the coldwater IBI is 80, or "good". So you've lowered the curve by 20%. The cold IBI recognizes brown trout, although they are an exotic, as a contributor to the coldwater IBI, but it should also be recognized that these waters will never meet the full measure of the IBI.

2) Another component of the coldwater IBI is the percent of individuals that are top level carnivores - trout in this case. Since the rehabilitation project has taken place, we've seen trout numbers nearly double in many sections of the stream (see Tables 4a - 4e; Trout/mile (4)). However, we have also seen an explosion in population of mottled sculpin - another intolerant coldwater indicator species -- due to improvements in habitat that they also find to their liking. This is not a bad thing, but it does decrease the percent individuals that are top level carnivores (trout vs. mottled sculpin), and therefore the coldwater IBI is depressed by 10 to 20 points. This phenomenon is what is keeping the IBIs from being well into the "good" category.

An even more important note:

3) At the time of the writing of the report (4) there was recognition that certain systems might not be true coldwater streams, but more accurately coolwater systems. Indeed German Valley is modeled to be a cool-cold transitional system. At the time this report (4) was written, the coolwater IBI had not yet been developed. If one were to now apply the coolwater IBI to this system, all of the cool-cold IBIs would fall into the "good" to "excellent" category (see attached excel table (7)).

Therefore, the best professional judgment is still that German Valley Branch is functioning to its attainable use, whether that is cool-cold, or more likely cold, and should be removed from the state's list of impaired waters.

#### **References:**

- (1) TMDL: Carpenter Creek, Wisconsin (*in WATERS*)
- (2) Jim Amrhein's delisting documentation - 9/22/2011 (*in WATERS*)
- (3) TMDLs for Sediment Impaired Streams in the Sugar-Pecatonica River Basin - June 28, 2005 (*in WATERS*)
- (4) "An Assessment of German Valley Creek - A proposal for delisting from the state's 303(d) list of impaired waters - In fulfillment of SP12 projects SCR02\_09 and SCR04\_10, January, 2011, Jim Amrhein" (*in WATERS*)
- (5) The Wisconsin Consolidated Assessment and Listing Methodology (WisCALM) Report 2012, <http://dnr.wi.gov/org/water/condition/wiscalm.htm>

(6) USEPA Decision Document for the Approval of the Sugar Pecatonica TMDL 875300 (*in WATERS*)

(7) “German Valley Creek Coolwater\_IBI\_V2011,” Excel table created by Jim Amrhein, 7/05 – 9/10 (*attached*)

Table: Cool-Cold IBI Scores for German Valley Creek. An Excel file showing the scores for individual components of the overall IBI score is available through DNR.

Station Name	Survey year	Survey Begin Date	Cool cold ibi	Cool cold ibi score
GERMAN VALLEY BR - ALONG CTY. RD. E UPSTREAM OF N. PERRY RD.	2005	05-Jul-2005	Excellent	90
GERMAN VALLEY BRANCH - MAYFLOWER RD	2005	12-Jul-2005	Good	70
GERMAN VALLEY BRANCH ~800M UPSTREAM OF MAYFLOWER ROAD BRIDGE	2008	19-Jun-2008	Good	60
GERMAN VALLEY BR - ALONG CTY. RD. E UPSTREAM OF N. PERRY RD.	2008	19-Jun-2008	Good	70
GERMAN VALLEY AT UPPER KAHL STREAM CROSSING	2008	20-Jun-2008	Good	80
GERMAN VALLEY BR - CTY. RD. E BRIDGE (SOUTH) UPSTREAM 150 M TO END	2008	20-Jun-2008	Good	70
GERMAN VALLEY BR - ALONG CTY. RD. E UPSTREAM OF N. PERRY RD.	2009	29-May-2009	Good	70
GERMAN VALLEY BR UPSTREAM OF CTY. RD. E BRIDGE (SOUTH) (SEC. 28)	2009	29-May-2009	Excellent	90
GERMAN VALLEY AT UPPER KAHL STREAM CROSSING	2009	29-May-2009	Good	70
GERMAN VALLEY BR - CTY. RD. Z BRIDGE TO N. PERRY RD. BRIDGE	2009	03-Jun-2009	Excellent	90
GERMAN VALLEY BRANCH ~800M UPSTREAM OF MAYFLOWER ROAD BRIDGE	2009	09-Jun-2009	Good	70
GERMAN VALLEY BR - CTY. RD. E BRIDGE (NORTH) UPSTREAM 101 M TO END	2010	29-Jun-2010	Good	80
GERMAN VALLEY BRANCH 200 M S OF COUNTY E .5 MILE SW OF MAYFLOWER RD.	2010	07-Sep-2010	Excellent	90





**German Valley Creek** *before*: Deeply entrenched, highly eroding banks



**German Valley Creek** *after*: Banks sloped, seeded, stabilized; stream able to spread out in high flow events, reducing erosive energy.





**German Valley Creek** *after*: Cattle crossing in place, fencing to keep cows out of stream



**German Valley Creek** *after*: Actually moved the stream back to its original bed and meander pattern and away from the barnyard. Filter bed put in. Fence to keep cattle out.