

**Framework for Reporting and Evaluation**



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This section describes the framework and basic elements for evaluating and reporting the water quality information in this report.

The 2012 Integrated Report (IR) continues Ohio's evolution to a fully-formed watershed basis for reporting on water quality conditions. For the past 20 years Ohio has maintained strong linkages between Section 305(b) reporting and Section 303(d) listing. Under the title *Water Resource Inventories*, Ohio prepared Section 305(b) reports every two years since 1988 using a biologically based assessment methodology<sup>1</sup>. Subsequently, Section 303(d) lists were compiled using the output of Section 305(b) reporting in 1992, 1994, 1996, and 1998. In 2002, the first IR was produced, addressing the needs of both reporting requirements.

Reporting on Ohio's water resources continues to develop, including more data types and more refined methodologies. The basic framework for this report is built on four beneficial uses, as follows:

- **Aquatic Life.** Analysis of the condition of aquatic life was the long-standing focus of reporting on water quality in Ohio and continues to provide a strong foundation. The 2012 methodology contains no changes. Also in this report, as in the 2010 IR, a methodology for assessing the aquatic life condition of lakes is previewed for possible inclusion in the 2014 report.
- **Recreation.** A methodology for using bacteria data to assess recreation suitability was developed for the 2002 report and refined in 2004, remaining essentially the same for 2006 and 2008. In 2010, the recreation use analysis changed significantly to a new indicator, a new water quality standard, and a data grouping procedure similar to that used for aquatic life. The methodology has not changed for the 2012 report.
- **Human Health.** A methodology for comparing fish tissue contaminant data to human health criteria via fish consumption advisories was included in the 2004 report. That methodology has been refined in each subsequent report to align more directly with the human health water quality criteria. The methodology was changed in the 2010 report to be consistent with the methodology described in U.S. EPA's 2009 guidance for implementing the methylmercury water quality criterion. The 2012 methodology did not change.
- **Public Drinking Water.** An assessment methodology for the public drinking water supplies was introduced in 2008 after being demonstrated in the 2006 report. No changes were made to the methodology in this report.

The methodology for assessing support of each beneficial use is described in more detail in Sections E through H.

## **D1. Assessment Units**

The 2012 IR continues the watershed orientation outlined in previous reports; the assessment units have not changed significantly from the 2010 report. Throughout this report, references are made to large rivers and watersheds as assessment units defined for 303(d) listing purposes. Data from individual sampling locations in an assessment unit are accumulated and analyzed; summary information and statewide statistics are provided in this report. The three types of assessment units (AUs) are:

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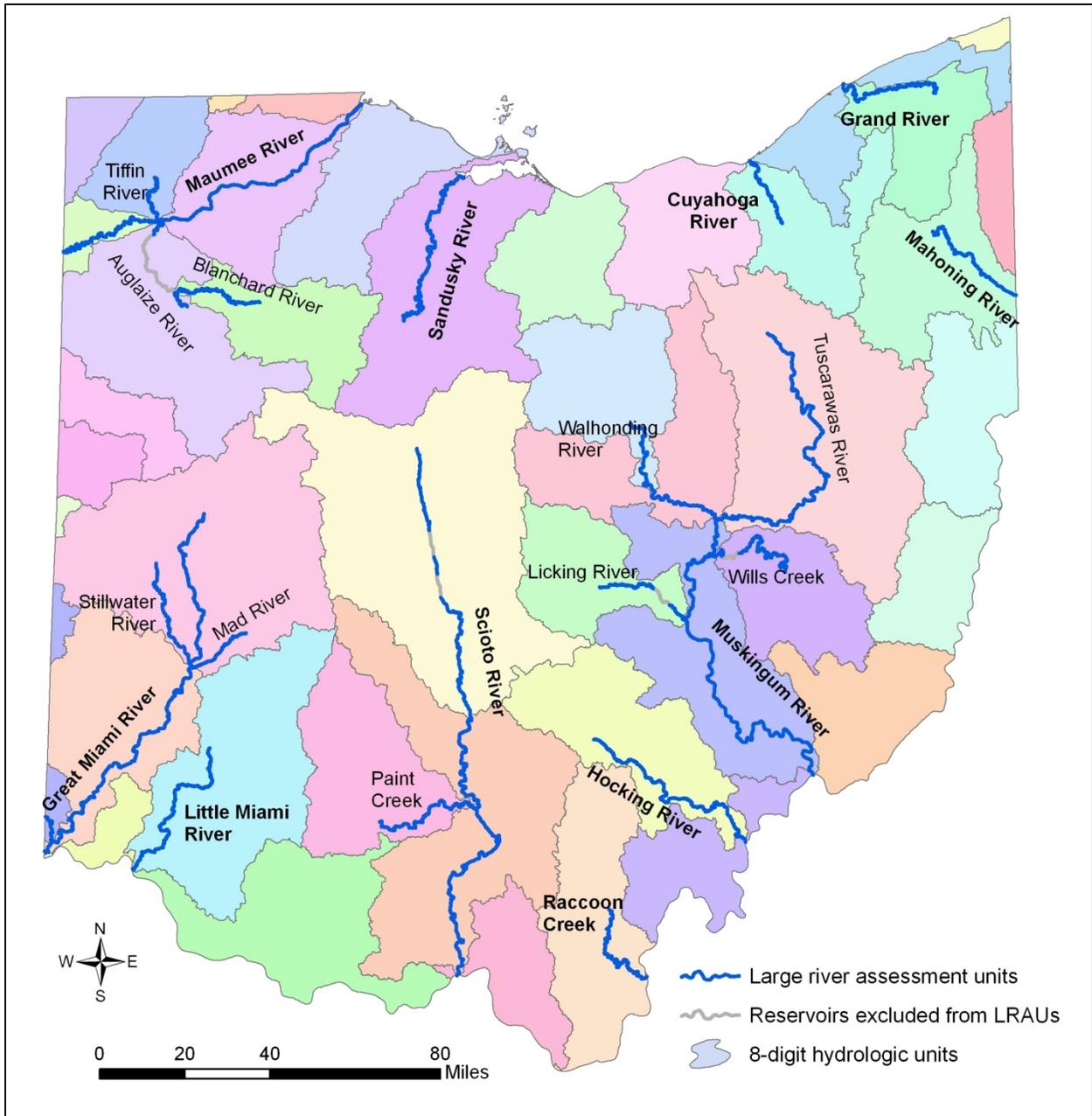
<sup>1</sup> In 1990, the linkage of fish and macroinvertebrate community index scores and attainment of aquatic life use designations was established in Ohio's Water Quality Standards (OAC 3745-1).

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- Watershed Assessment Units (WAUs) – 1,538 watersheds that align with the 12-digit hydrologic unit code (HUC) system. Ohio HUC numbers are lowest in the northwest corner of the state, proceeding approximately clockwise around the state. The first two digits of Ohio numbers are either 04 (draining to Lake Erie) or 05 (draining to the Ohio River).
  - Large River Assessment Units (LRAUs) – 38 segments in the 23 rivers that drain more than 500 square miles; the length of each river included is from the mouth of each river upstream to the point where the drainage area reaches approximately 500 square miles.
  - Lake Erie Assessment Units – for 3 nearshore areas of the lake: western (Ohio/Michigan state line to eastern terminus of Sandusky Bay opening to Lake Erie), central (eastern terminus of Sandusky Bay opening to Lake Erie to Ohio/Pennsylvania state line), and Lake Erie islands (including South Bass Island, Middle Bass Island, North Bass Island, Kelleys Island, West Sister Island and other small islands).

Ohio River assessment units have been defined by the Ohio River Valley Water Sanitation Commission (ORSANCO). See Section D4 for additional discussion of ORSANCO's work.

It is important to remember that the information presented here is a summary. All of the underlying data observations are available and can be used for more detailed analysis of water resource conditions on a more localized, in-depth scale. Much of the information is available in watershed reports available at [http://www.epa.ohio.gov/dsw/document\\_index/psdindx.aspx](http://www.epa.ohio.gov/dsw/document_index/psdindx.aspx). TMDL reports are another source of more in-depth analyses, available at <http://www.epa.ohio.gov/dsw/tmdl/index.aspx>. Ohio EPA displays stream data it collects on interactive maps (see <http://wwwapp.epa.ohio.gov/dsw/gis/bio/index.php>). Currently, biological data from selected projects in watersheds monitored by the Ohio EPA since 2005 are available. New data and historical data (prior to 2005) will be added as resources allow.

Ohio's large rivers, defined for this report as draining greater than 500 square miles, are illustrated in Figure D-1. Ohio's watershed units are shown in Figure D-2. Some reporting also mentions principal streams, defined as draining 50 to 500 square miles. Principal streams are not assessment units, but information is included here to provide a more complete picture of water quality conditions. Principal streams and their condition are discussed in more detail in Section B2.



**Figure D-1. Ohio's large rivers (rivers with drainages greater than 500 mi<sup>2</sup>) and their watersheds.**  
*Note: Bolded river names indicate the primary mainstem of that drainage basin.*

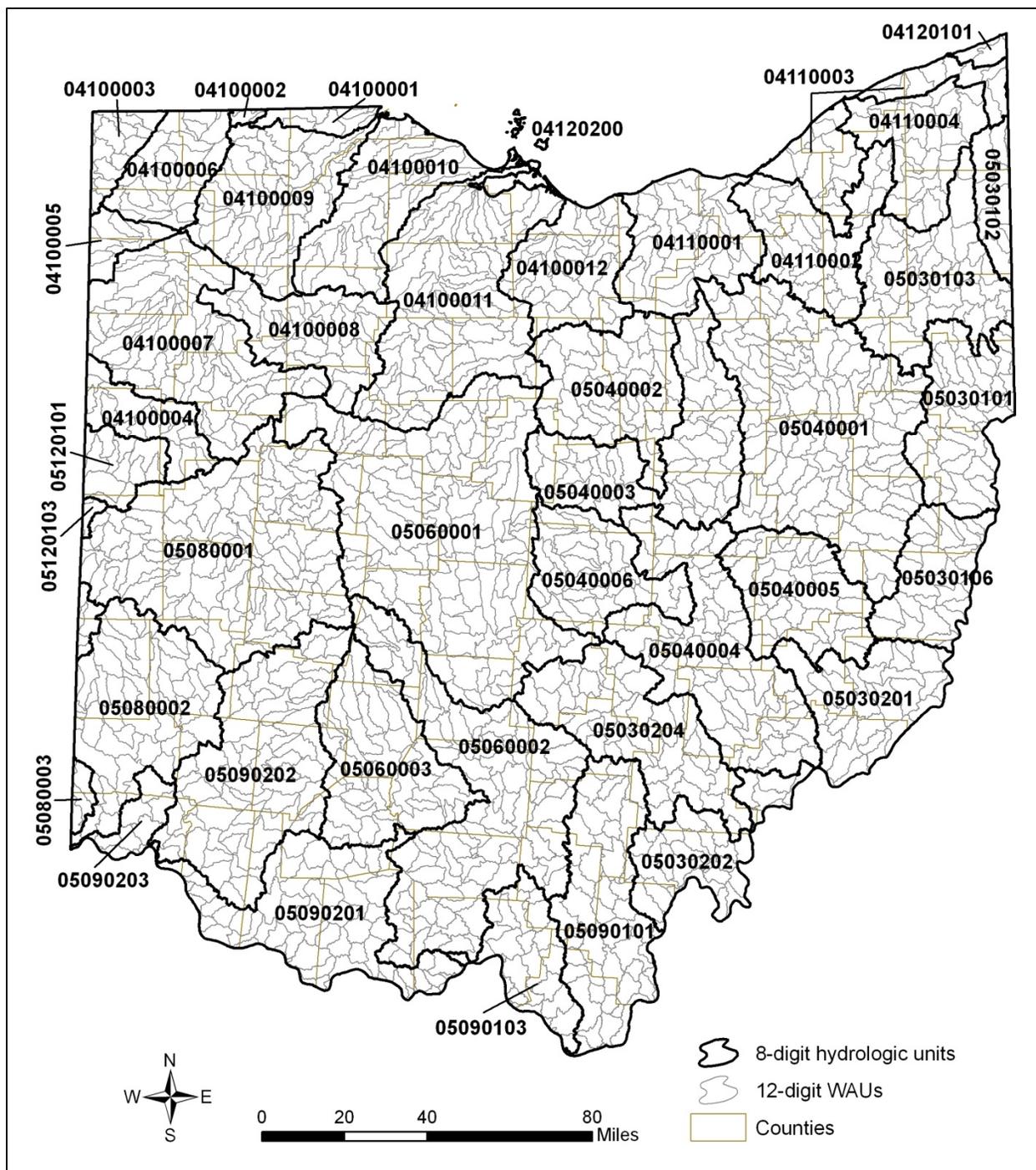


Figure D-2. Ohio's 12-digit watershed assessment units (gray lines) and 8-digit hydrologic units (heavy black lines).

## D2. Ohio's Water Quality Standards Use Designations

Beneficial use designations describe existing or potential uses of water bodies. They take into consideration the use and value of water for public water supplies, protection and propagation of aquatic life, recreation in and on the water, agricultural, industrial and other purposes.

Ohio EPA assigns beneficial use designations to water bodies in the state. There may be more than one use designation assigned to a water body. Examples of beneficial use designations include: public water supply, primary contact recreation, and numerous sub-categories of aquatic life uses. Table D-1 lists all of Ohio's water quality standards (WQS) designated uses and outlines how the use was evaluated for the Ohio 2012 IR.

**Table D-1. Ohio water quality standards in the 2012 Integrated Report.**

<b>Beneficial Use Category</b>	<b>Key Attributes (why a water would be designated in the category)</b>	<b>Evaluation status in 2012 Integrated Report</b>
<i>Categories for the protection of aquatic life</i>		
Coldwater Habitat	native cold water or cool water species; put-and-take trout stocking	Assessed on case by case basis
Seasonal Salmonid Habitat	supports lake run steelhead trout fisheries	No direct assessment, streams assessed as EWH or WWH
Exceptional Warmwater Habitat	unique and diverse assemblage of fish and invertebrates	59% of the WAUs and 82% of the LRAUs fully assessed using direct comparisons of fish and macroinvertebrate community index scores to the biocriteria in Ohio's WQS; sources and causes of impairment were assessed using biological indicators and water chemistry data
Warmwater Habitat (WWH)	typical assemblages of fish and invertebrates	
Modified Warmwater Habitat	tolerant assemblages of fish and macro-invertebrates; irretrievable condition precludes WWH	
Limited Resource Waters	fish and macroinvertebrates severely limited by physical habitat or other irretrievable condition	Assessed on case by case basis
<i>Categories for the protection of recreational activities</i>		
Bathing Waters	Lake Erie (entire lake); for inland waters, bathing beach with lifeguard or bathhouse facility	Lake Erie public beaches fully evaluated; nine inland lakes evaluated
Primary Contact Recreation	waters suitable for one or more full-body contact recreation activity such as wading and swimming; three classes are recognized, distinguished by relative potential frequency of use	56% of the AUs assessed using applicable PCR geometric mean <i>E. coli</i> criteria
Secondary Contact Recreation	waters rarely used for recreation because of limited access; typically located in remote areas and of very shallow depth	Assessed as part AU using applicable SCR geometric mean <i>E. coli</i> criteria
<i>Categories for the protection of water supplies</i>		
Public Water Supply	waters within 500 yards of all public water supply surface water intakes, publically owned lakes, waters sued as emergency supplies	Sufficient data were available to assess 42% of the 129 AUs with PDWS use; assessed using chemical water quality data; only waters with active intakes were assessed
Agricultural Water Supply	water used, or potentially used, for livestock watering and/or irrigation	Not assessed
Industrial Water Supply	water used for industrial purposes	Not assessed

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### D3. Sources of Existing and Readily Available Data

For two decades Ohio EPA has placed a high priority on collecting data to accurately measure the quality of Ohio's rivers and streams. Therefore, the Agency has a great deal of information and data to draw upon for the IR. The available data sets from Ohio EPA and external sources, including efforts used to obtain additional data, are also discussed below. The 2008 IR marked the first time that Ohio's Credible Data Law was fully implemented in generating external data for consideration.

The "credible data law," enacted in 2003 (ORC 6111.50 to 6111.56), requires that the Director of Ohio EPA adopt rules which would, among other things, do the following:

- establish a water quality monitoring program for the purpose of collecting credible data under the act, require qualified data collectors to follow plans pertaining to data collection, and require the submission of a certification that the data were collected in accordance with such a plan; and
- establish and maintain a computerized database or databases of all credible data in the Director's possession, and require each state agency in possession of surface water quality data to submit them to the Director.

The Ohio EPA adopted rules in 2006, revised in 2011, to establish criteria for three levels of credible data for surface water quality monitoring and assessment, and to establish the necessary training and experience for persons to submit credible data. Apart from a few exceptions, people collecting data and submitting it to Ohio EPA for consideration as credible data must have status as a qualified data collector (QDC). Only Level 3 data can be used for decisions about beneficial use assignment and attainment, water quality standards, listing and delisting (303(d) list), and total maximum daily load (TMDL) calculations.

Ohio EPA solicited data from all Level 3 QDCs for the 2012 IR. The letter requesting data and the web site containing information about how to submit data are included in Section D5.1. Table D-2 summarizes the WQS uses evaluated in the 2012 IR, the basic types of data used, the period of record considered, the sources of data and the minimum amount of data needed to evaluate a water body. Specific methodologies used to assess attainment of the standards are described in more detail in Sections E through H.

Table D-3 summarizes the data Ohio EPA used in the 2012 IR. Ohio EPA's 2012 IR uses fish contaminant data to determine impairment using the human health based water quality criteria. Fish consumption advisories (FCAs) were not used in determining impairment status. However, the public should use the FCAs in determining the safety of consuming Ohio's sport fish.

The evaluation of bacteria, biological and water quality survey data was not changed from the approach used in the 2010 IR. Data collected by Ohio EPA and Level 3 Qualified Data Collectors were evaluated. The following Qualified Data Collectors submitted data or the data were available from readily obtained reports:

- Ohio Department of Natural Resources
- U.S. Geological Survey
- Northeast Ohio Regional Sewer District
- Midwest Biodiversity Institute / Center for Applied Bioassessment and Biocriteria

- Heidelberg College
- The Ohio State University
- Ohio Department of Health
- Cuyahoga County Board of Health
- EnviroScience, Inc.

**Table D-2. Data types used in the 2012 Integrated Report.**

WQS Uses & Criteria Evaluated (basic rationale <sup>1</sup> )	Type of Data Time Period	Source(s) of Data	Minimum Data Requirement
Human health, single route exposure via food chain accumulation and eating sport fish (criteria apply to all waters of the State)	Fish Tissue Contaminant Data  2001 to 2010	Fish Tissue Contaminant Database	Data collected within past 10 years. Two samples, each from trophic levels 3 and 4 in each HUC12 or inland lake.
Recreation uses and subclasses - evaluation based on a comparison of <i>E. coli</i> levels to applicable geometric mean <i>E. coli</i> criteria in the WQS. Lake Erie shoreline evaluated on the basis of frequency of advisories posted at beaches	<i>E. coli</i> counts  2006 to 2010 (May through October only)	Ohio Dept of Health Cuyahoga County Health Department Northeast Ohio Regional Sewer District (NEORS)	Bathing Waters – One or more geometric mean <i>E. coli</i> values (inland lakes; <i>E. coli</i> data from one or more beaches (Lake Erie shoreline AUs); minimum of one geometric mean <i>E. coli</i> concentration per WAU or one site every ~5-7 river miles for LRAUs
Aquatic life (specific sub-categories), fish and macroinvertebrate community index scores compared to biocriteria in WQS <sup>2</sup>	Watershed scale biological and water quality surveys & other more targeted monitoring  2001 to 2010	Ohio DNR U.S. Geological Survey NEORS Midwest Biodiversity Institute Heidelberg College Ohio State University EnviroScience, Inc.	Fish and/or macroinvertebrate samples collected using methods cited in WQS <sup>3</sup> . Generally, 2 to 3 locations sampled per watershed assessment unit (12-digit HUC).
Public drinking water supply (criteria apply within 500 yards of active drinking water intakes, all publically owned lakes, and all emergency water supplies)	Chemical water quality data  2006 to 2010	SDWIS (PWS compliance database) Syngenta Crop Protection, Inc. (Atrazine Monitoring Program) <sup>4</sup>	Data collected within past five years. Minimum of 10 samples with a few exceptions (noted in Section H).

<sup>1</sup> Additional explanation is provided in the text of Section D2.

<sup>2</sup> OAC 3745-1-07(A)(6) and Table 7-15.

<sup>3</sup> OAC 3745-1-03(A)(5)

<sup>4</sup> These data were collected as part of an intensive monitoring program at community water systems required by the January 2003 Atrazine Interim Reregistration Eligibility Decision and subsequent Memorandum of Agreement between U.S. EPA and the atrazine registrants (including Syngenta Crop Protection, Inc.).

**Table D-3. Description of data used in the 2012 Integrated Report from sources other than Ohio EPA.**

Entity	Dates Data Were Collected	Data Description	Basis of Qualification <sup>1</sup>
<i>Data Collected Before Credible Data Law (March 24, 2006)</i>			
NPDES permittees	2002 – 2005 (May – Oct only)	Bacteria	
Ohio Department of Health (ODH)	2002 – 2005 (May – Oct only)	Bacteria	
Cuyahoga County Health Department	2002 – 2005 (May – Oct only)	Bacteria	
Northeast Ohio Regional Sewer District	2002 – 2005 (May – Oct only)	Bacteria	
Lake County General Health District	2002 – 2005 (May – Oct only)	Bacteria	
Ohio Department of Natural Resources	1997 – 2005	Fish tissue	
	2001 – 2005	Biology (fish only) Physical habitat	
Ohio Northern University	1997	Biology	
Ohio University (Athens)	1995	Biology	
U.S. Geological Survey	2003	Biology (macroinvertebrates only)	
Northeast Ohio Regional Sewer District	2001	Biology (macroinvertebrates only)	
	2005	Fish Tissue	
Midwest Biodiversity Inst./ Ctr for Applied Bio-assessment & Biocriteria	2001 – 2004	Biology	
		Physical habitat	
		Chemistry	
Heidelberg College	2004	Biology (macroinvertebrates only)	
	Jan 2002 – Feb 2006	Chemistry	
PWS compliance database (permittees)	Jan 2002 – Feb 2006	Chemistry	
Syngenta Crop Protection, Inc.	Jan 2002 – Feb 2006	Chemistry	
<i>Data Collected After Credible Data Law (March 24, 2006)</i>			
NPDES permittees	2009 – 2010 (May - Oct only)	Bacteria	Data credible - submittal pursuant to permit
Ohio Department of Health (ODH)	2006 – 2010 (May - Oct only)	Bacteria	State Agency
Cuyahoga County Health Department	2006 – 2010 (May – Oct only)	Bacteria	Level 3 qualified data collectors (under ODH's study plan)
Northeast Ohio Regional Sewer District	2006 – 2010 (May – Oct only)	Bacteria	Level 3 qualified data collectors
	July 2006 – Oct 2010	Biology	
		Physical habitat	
	2008	Fish tissue	

Entity	Dates Data Were Collected	Data Description	Basis of Qualification <sup>1</sup>
Ohio Department of Natural Resources	April 2006 – Nov 2010	Fish Tissue	State Agency/Level 3 qualified data collectors
	Sept 2006 – Sept 2010	Biology (fish only)	
		Physical habitat	
PWS compliance database (permittees)	March 2006 – Dec 2010	Chemistry	Data credible - submittal pursuant to permit
Syngenta Crop Protection, Inc. <sup>2</sup>	March 2006 – Dec 2010	Chemistry	See footnote
The Ohio State University	May – Oct 2006	Biology (macroinvertebrates only)	Level 3 qualified data collector
Midwest Biodiversity Inst./ Ctr for Applied Bio-assessment & Biocriteria	July – Oct 2010	Biology	Level 3 qualified data collectors
		Physical habitat	
EnviroScience, Inc.	Sept – Nov 2009	Biology	Level 3 qualified data collectors
		Physical habitat	
Ohio Department of Transportation	June 2007 – Oct 2010	Biology (fish only)	State Agency/Level 3 qualified data collectors
		Physical habitat	
Clermont County Office of Environmental Quality	May – July 2009	Chemistry (drinking water)	Level 3 qualified data collectors

<sup>1</sup> Level 3 Qualified Data Collector requirements are described in OAC Rule 3745-4-03(A)(4). Included above are Qualified Data Collectors Ohio EPA has approved for stream habitat assessment, fish community biology, benthic macroinvertebrate biology and/or chemical water quality assessment.

<sup>2</sup> These data were collected as part of an intensive monitoring program at community water systems required by the Jan 2003 Atrazine Interim Reregistration Eligibility Decision and subsequent Memorandum of Agreement between U.S. EPA and the atrazine registrants (including Syngenta Crop Protection, Inc.).

## D4. Evaluation of the Ohio River

Since 1948, the Ohio River Valley Water Sanitation Commission (ORSANCO) and its member states have cooperated to improve water quality in the Ohio River Basin so that the river and its tributaries can be used for drinking water, industrial supplies and recreational purposes; and can support healthy and diverse aquatic communities. ORSANCO operates monitoring programs to check for pollutants and toxins that may interfere with specific uses of the river, and conducts special studies to address emerging water quality issues. ORSANCO was established on June 30, 1948, to control and abate pollution in the Ohio River Basin. ORSANCO is an interstate commission representing eight states and the federal government. Member states include Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia and West Virginia. ORSANCO operates programs to improve water quality in the Ohio River and its tributaries including: setting waste water discharge standards; performing biological assessments; monitoring for the chemical and physical properties of the waterways; and conducting special surveys and studies. ORSANCO also coordinates emergency response activities for spills or accidental discharges to the river, and promotes public participation in the programs such as the Ohio River Sweep, RiverWatchers Volunteer Monitoring Program and Friends of the Ohio.

As a member to the Commission, the State of Ohio and the Ohio EPA support ORSANCO activities, including monitoring of the Ohio River mainstem, by providing funding based on state population and miles of Ohio River shoreline. As such, monitoring activities on the Ohio River

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are coordinated and conducted by ORSANCO staff or its contractors. ORSANCO has developed a detailed monitoring strategy for the Ohio River that has been endorsed by member states and the federal government (ORSANCO 2005). The document was developed under the guidance and oversight of several committees and subcommittees of ORSANCO that are composed of scientists and technical staff from state environmental and natural resource agencies and various federal agencies. The document is available at <http://www.orsanco.org>.

Ohio EPA participates in an ORSANCO workgroup to promote consistency in 305(b) reporting and 303(d) listing. The workgroup discussed and agreed upon methods to evaluate attainment / non-attainment of aquatic life, recreation and public water supply uses, as well as impairments based on Sportfish Consumption Advisories. ORSANCO prepares the Section 305(b) report for the Ohio River and has indicated the impaired beneficial uses and segments of the Ohio River. Ohio EPA defers to the ORSANCO analysis and the list of impaired Ohio River segments found in *2010 Biennial Assessment of Ohio River Water Quality Conditions* (ORSANCO 2010). ORSANCO plans to complete a biennial assessment in 2012, but the document is not expected to be available by the time Ohio's 2012 Integrated Report will be available for public review.

## **D5. Public Involvement in Compiling Ohio's Section 303(d) List of Impaired Waters**

The public was involved in various ways in the development of the 2012 Integrated Report. Several means of public communication are discussed below.

Ohio EPA convened an advisory group that included representatives from the regulated community (e.g., industries, municipalities), environmental groups, consultants, citizens, state and federal agencies, farm organizations, and development interests. The group, which included about eighty active participants, met from late 1998 to June 2000. One subgroup addressed listing issues. Their conclusions were as follows:

- monitoring and data quality are essential
- use outside data of highest quality
- endorse priorities of 1998 list
- increase attention to human health issues
- quantify "cost of inaction"
- more monitoring is needed
- data should be accessible and geographically referenced
- increased public involvement is needed
- current funding and resources are inadequate.

The cost associated with implementing the advisory group's listing recommendations was \$3.2 million annually; the cost for implementing all advisory group recommendations was \$9.7 million annually. Ohio EPA used these estimates to seek additional state funding but ultimately was unsuccessful in competing with other state funding priorities. We have incorporated the "low cost" recommendations (the first four listed above), and we continue to seek ways to address all of the group's recommendations.

Much of the data used in this report have been presented to the public in meetings and publications concerning individual watersheds. Data and assessments have also been

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available in previous 305(b), 303(d), and integrated reports. All of this information can be accessed from the following Internet web sites: <http://www.epa.ohio.gov/dsw/formspubs.aspx>.

The draft 2012 303(d) list, contained in the draft 2012 Integrated Report, will be available for public review beginning in December 2011 (date to be determined) for at least 30 days. Comments received, and responses to those comments, will be summarized in Section D6 of the final report.

#### **D5.1 Solicitation for External Water Quality Data, 2012 Integrated Report Project (June 6, 2011)**

A memorandum soliciting level 3 qualified data was mailed at the beginning of June 2011 to all level 3 qualified data collectors. The memorandum is displayed below.

**Date** June 6, 2011

**Re** Solicitation of Water Quality Data, 2012 Integrated Report  
***(No action is required on your part - submission of data is voluntary)***

**To** Interested Parties: Stream Monitoring Personnel

**From** George Elmaraghy, Chief  
Division of Surface Water

Ohio EPA is asking for chemical, biological and/or physical data you may wish to submit for consideration as the Agency prepares its 2012 Integrated Report. Both the state and federal governments have an interest in utilizing all available data to make informed decisions about managing Ohio's aquatic resources. Ohio EPA is only able to use data from a limited number of external sources, including Level 3 certified data collectors and NPDES discharge permit holders<sup>2</sup>.

At this time, the Ohio EPA Division of Surface Water (DSW) is soliciting readily available data for use in the 2012 Integrated Report. The report, due to U.S. EPA on April 1, 2012, fulfills the State's reporting obligations under Sections 305(b) and 303(d) of the Clean Water Act. Information is available at <http://www.epa.ohio.gov/dsw/tmdl/2012IntReport/index.aspx>.

#### **Credible Data Law**

In 2003 a new law was enacted in Ohio dealing with sources of data external to Ohio EPA. The "credible data law," as it is known (ORC 6111.50 to 6111.56), requires that the Director of Ohio EPA adopt rules which would, among other things, do the following:

- establish a water quality monitoring program for the purpose of collecting credible data under the act, require qualified data collectors to follow plans pertaining to data collection, and require the submission of a certification that the data were collected in accordance with such a plan; and

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<sup>2</sup> It is unnecessary to resubmit data that have already been submitted to the Division of Surface Water.

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- establish and maintain a computerized database or databases of all credible data in the Director's possession, and require each state agency in possession of surface water quality data to submit them to the Director.

The Director has adopted rules (OAC 3745-4-01 through 06), effective March 2006, that delineate these requirements.

In addition, the law explicitly established that external data found compliant with the specifications for "level 3 credible data," which generally means data from a level 3 qualified data collector, can be used for certain regulatory and reporting purposes, such as the Section 303(d) list.

According to the Ohio EPA administrative rules, you may meet the qualifications of a "level 3 qualified data collector" in one or more areas of water quality data. Therefore, in pursuit of all readily available data for use in the state's reporting documents, the Agency is requesting your voluntary participation by submitting any recent water quality data that you have on Ohio's waters (e.g., lakes, rivers, streams and wetlands) that you are qualified to collect by August 1, 2011.

More information about the specific types of data being requested by Ohio EPA, and how to submit such data, can be found at:

<http://www.epa.ohio.gov/dsw/tmdl/2012IntReport/CallForData.aspx>.

#### **D5.1.1 Web Page with Instructions for Submitting Level 3 Credible Data**

For those who received the memorandum and who were interested in submitting data to the Ohio EPA, a web page was established with instructions on what qualified data to be submitted and how to do so.

### **2012 Integrated Water Quality Monitoring and Assessment Report – Call for Level 3 Credible Data**

- [What kind of data does Ohio EPA want?](#)
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  - [Biological and Physical Data](#)
  - [Chemical Water Quality Data](#)
- [Do I have Level 3 data?](#)
- [Have I already given Ohio EPA my data?](#)
- [What will be needed in addition to data?](#)
  - [Microbiological Data Requirements](#)
  - [Biological, Chemical and Physical Data Requirements](#)
- [How do I send the data?](#)
- [To whom do I send the data?](#)

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#### **What kind of data does Ohio EPA want?**

Ohio EPA is asking for chemical, biological and/or physical data you may wish to submit for consideration as the Agency prepares its 2012 Integrated Report. Both the state and federal

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governments have an interest in utilizing all available data to make informed decisions about managing Ohio's aquatic resources. Ohio EPA is soliciting data primarily from NPDES major permit holders, Level 3 Qualified Data Collectors and others that may be in possession of Level 3 Credible Data that were collected in 2009 and 2010. The data can be of various types (bacteria, biological, physical, and chemical water quality data).

### Microbiological Data

- Ohio EPA measures recreational use attainment by comparing the level of indicator bacteria present in ambient water samples against the bacteria criteria contained in [rule 3745-1-07 of Ohio's water quality standards](#) [PDF 77K]. These indicator bacteria serve as predictors for the presence of enteric pathogens in the water that can cause a variety of illnesses. The type of indicator bacteria that Ohio EPA is utilizing in the 2012 Integrated Report is *E. coli*.

Data collected by NPDES discharge permit holders at ambient stream sites upstream and downstream of discharge locations and reported in discharge monitoring reports (DMRs) will be extracted from the SWIMS database. **It is unnecessary to resubmit data already submitted into SWIMS.** However, if bacteria data were collected at additional ambient stations and not reported through SWIMS, permit holders may voluntarily submit this data to the Agency. Data must have been collected between May 1, 2009 through October 31, 2010 and must meet the basic terms of acceptability found in the requirements listed below.

### Biological and Physical Data

- Ohio EPA measures aquatic life use attainment in Ohio streams and rivers by comparing indices generated from fish and aquatic macroinvertebrate data against the biological criteria contained in Ohio's water quality standards, [OAC 3745-1-07, Table 7-15](#) [PDF 77K]. Field collection and data analysis methodologies for fish and macroinvertebrate community assessments are strictly adhered to and must follow procedures as outlined in the [Ohio EPA biological criteria manuals](#).
- Chemical water quality data collected in conjunction with biological data is of interest to Ohio EPA. Data should follow the parameters discussed below.

### Chemical Water Quality Data

- Ohio EPA primarily uses sampling methods described in the "[Manual of Ohio EPA Surveillance Methods and Quality Assurance Practices, 2009 Revision](#)" [PDF 197K]. Sample collection and analysis method references are listed in [paragraph \(C\) of OAC 3745-4-06](#) [PDF 25K]. Ohio EPA is interested in other chemical water quality data collected and analyzed by these methods or others of similar quality control/quality assurance rigor.

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## Do I have Level 3 data?

In 2003, a new law was enacted in Ohio dealing with external sources of data. The "credible data law," as it is known ([ORC 6111.50 to 6111.56](#)), requires the Director of Ohio EPA to adopt rules that would, among other things:

- establish a water quality monitoring program for the purpose of collecting credible data under the act, require qualified data collectors to follow plans pertaining to data collection, and require the submission of a certification that the data were collected in accordance with such a plan; and
- establish and maintain a computerized database or databases of all credible data in the Director's possession, and require each state agency in possession of surface water quality data to submit them to the Director.

The Director has adopted rules ([OAC 3745-4-01 to 06](#)), effective March 2006, to accomplish these requirements.

In addition, the law explicitly established that external data found compliant with the specifications for "level 3 credible data," which generally means data from a level 3 qualified data collector, can be used for certain regulatory and reporting purposes, such as the Section 303(d) list of Ohio's impaired waters.

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### Have I already given Ohio EPA my data?

External data Ohio EPA has received and may use for 305(b)/303(d) reporting:

Entity	Dates Data Were Collected	Data Description	Basis of Qualification <sup>1</sup>
<i>Data Collected Before Credible Data Law (March 24, 2006)</i>			
NPDES permittees	2002 – 2005 (May - Oct only)	Bacteria	
Ohio Department of Health (ODH)	2002 - 2005 (May - Oct only)	Bacteria	
Cuyahoga County Health Department	2002 – 2005 (May - Oct only)	Bacteria	
Northeast Ohio Regional Sewer District	2002 – 2005 (May - Oct only)	Bacteria	
Lake County General Health District	2002 – 2005 (May - Oct only)	Bacteria	
Ohio Department of Natural Resources	1997 - 2005	Fish tissue	
		Biology (fish only)	
	2001 - 2005	Physical habitat	
Ohio Northern University	1997	Biology	
Ohio University (Athens)	1995	Biology	
U.S. Geological Survey	2003	Biology (macroinvertebrates only)	
Northeast Ohio Regional Sewer District	2001	Biology (macroinvertebrates only)	

Entity	Dates Data Were Collected	Data Description	Basis of Qualification <sup>1</sup>
	2005	Fish Tissue	
Midwest Biodiversity Inst./ Ctr for Applied Bio-assessment & Biocriteria	2001 - 2004	Biology	
		Physical habitat	
		Chemistry	
Heidelberg College	2004	Biology (macroinvertebrates only)	
	Jan 2002 - Feb 2006	Chemistry	
PWS compliance database (permittees)	Jan 2002 - Feb 2006	Chemistry	
Syngenta Crop Protection, Inc.	Jan 2002 - Feb 2006	Chemistry	
<i>Data Collected After Credible Data Law (March 24, 2006)</i>			
NPDES permittees	2009 - 2010 (May - Oct only)	Bacteria	Data credible - submittal pursuant to permit
Ohio Department of Health (ODH)	2006 - 2010 (May - Oct only)	Bacteria	State Agency
Cuyahoga County Health Department	2006 - 2010 (May - Oct only)	Bacteria	Level 3 qualified data collectors (under ODH's study plan)
Northeast Ohio Regional Sewer District	2006 - 2010 (May - Oct only)	Bacteria	Level 3 qualified data collectors
	July 2006 - Oct 2009	Biology	
		Physical habitat	
	2008	Fish tissue	
Ohio Department of Natural Resources	April 2006 - Nov 2010	Fish Tissue	State Agency
	Sept - Oct 2006	Biology (fish only)	
		Physical habitat	
PWS compliance database (permittees)	March 2006 - Dec 2010	Chemistry	Data credible - submittal pursuant to permit
Syngenta Crop Protection, Inc. <sup>2</sup>	March 2006 - Dec 2010	Chemistry	See footnote
The Ohio State University	2006 (May - Oct only)	Biology (macroinvertebrates only)	Level 3 qualified data collector
Midwest Biodiversity Inst./ Ctr for Applied Bio-assessment & Biocriteria	July - Oct 2010	Biology	Level 3 qualified data collectors
		Physical habitat	
EnviroScience, Inc.	September - November 2009	Biology	Level 3 qualified data collectors
		Physical habitat	

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<sup>1</sup> Level 3 Qualified Data Collector requirements are described in OAC Rule 3745-4-03(A)(4). Included above are Qualified Data Collectors Ohio EPA has approved for stream habitat assessment, fish community biology, benthic macroinvertebrate biology and/or chemical water quality assessment.

<sup>2</sup> These data were collected as part of an intensive monitoring program at community water systems required by the Jan 2003 Atrazine Interim Reregistration Eligibility Decision and subsequent Memorandum of Agreement between U.S. EPA and the atrazine registrants (including Syngenta Crop Protection, Inc.).

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## What will be needed in addition to data?

Specific guidelines for submission of data are listed below. While these guidelines correspond to the regulations regarding credible data, they are not verbatim. To see the regulations, please go to [OAC 3745-4-06](#) [PDF 25K].

### Microbiological Data Requirements

An individual or organization who submits bacteria data to Ohio EPA for consideration in the 2012 Integrated Report shall attest to the validity of the data and adhere to the data quality specification listed here. The submission of data must cover the following:

1. Sampling and Test Methods, QA/QC Specifications: Sampling must be conducted in a manner consistent with procedures contained in *Standard Methods for the Examination of Water and Wastewater* or the "[Manual of Ohio EPA Surveillance Methods and Quality Assurance Practices, 2009](#)" [PDF 197K].

Analytical testing must be conducted in accordance with U.S. EPA approved methods under [40 CFR 136.3](#) [PDF 2,020K]. Acceptable references for methods for QDCs are given in [paragraph \(C\) of OAC 3745-4-06](#) [PDF 25K] and include Ohio EPA references, U.S. EPA references, and Standard Methods. Data submissions must include a description of the Quality Assurance/Quality Control (QA/QC) plans under which the bacteria sample analysis occurred. This should address topics such as sample handling and preservation, sample holding time, chain of custody, precision, accuracy, etc.

2. Description of Sampling Program: A brief description of the purpose of data collection and the sampling design considerations should be provided. Were specific sources of potential contamination under investigation? Were samples collected at fixed station locations? How often and under what kinds of environmental conditions were samples collected? Have the results been published in a report or the scientific literature?
3. Minimum Data Submission: Ohio EPA is requesting only bacteria data (*E. coli*) collected during the recreational season (May 1st to October 31st) from 2009-2010. The following information must be included in the data submission in an electronic spreadsheet or database format:
  - Sample collection date
  - Sample collection method (with reference)
  - Sample site location including water body name, county, river mile (if known), latitude/longitude (decimal degrees or degrees, minutes, and seconds)
  - *E. coli* count

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- Identification of units associated with bacteria counts
  - Any applicable data qualifiers (as received from the lab, if applicable)
  - Contact name, address, telephone number, and e-mail address of the person submitting the data set
  - Identification of the laboratory performing the sample analysis

### Biological, Chemical and Physical Data Requirements

An individual or organization who submits biological, chemical and/or physical data to Ohio EPA for consideration in the 2012 Integrated Report shall attest to the validity of the data and adhere to the data quality specification listed here. The submission of data must cover the following:

1. Analytical and sampling procedures (examples):
  - [Manual of Ohio EPA Surveillance Methods and Quality Assurance Practices, 2009](#) [PDF 197K]
  - [Habitat and biology sampling manuals](#)

Only data that are consistent with these guidelines can be considered Level 3 data.

2. Description of Sampling Program: A brief description of the purpose of data collection and the sampling design considerations should be provided. Were specific sources of potential contamination under investigation? Were samples collected at fixed station locations? How often and under what kinds of environmental conditions were samples collected? Have the results been published in a report or the scientific literature?

If the data have been or will be submitted as part of the Credible Data Program and there is an approved project study plan, this requirement is potentially waived, pending a successful data review that confirms the study plan was adhered to as written.

3. Minimum Data Submission: Ohio EPA is requesting biological, chemical and physical data collected from 2009-2010. The following information must be included in the data submission in an electronic spreadsheet or database format:
  - Sample collection date
  - Sample collection method (with reference)
  - Sample site location including waterbody name, county, river mile (if known), latitude/longitude (decimal degrees or degrees, minutes and seconds)
  - Type of data collected (fish, macroinvertebrate, chemical and physical parameters)
  - Analytical and collection methodologies used (include references)
  - Contact name, address, telephone number, and e-mail address of the person submitting the data set
  - Identification of the laboratory performing the sample analysis (if applicable)
  - Weather conditions, flow, and precipitation (all optional)

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## How do I send the data?

If you have bacteria data collected from surface waters in Ohio, then Ohio EPA would be interested in discussing its possible use in the Integrated Report. Contact Chris Skalski at (614) 644-2144 or [chris.skalski@epa.state.oh.us](mailto:chris.skalski@epa.state.oh.us) before preparing and submitting any information. The Agency's capacity to accept and utilize the data in preparation of the Integrated Report is dependent upon a variety of factors and the use of all data brought to our attention may not be possible. Data must have been collected after May 1, 2006 and must meet the basic acceptability specifications listed above. Data must be provided in electronic format such as STORET, Excel or Access.

Ohio EPA already has data from some credible data collectors, as listed in the table above. Additional data may be available and Ohio EPA is soliciting these data. If you have biological, chemical or physical data collected from surface waters in Ohio, then Ohio EPA would be interested in discussing its possible use in the Integrated Report. Contact Jeff DeShon at (614) 836-8780 or [jeff.deshon@epa.state.oh.us](mailto:jeff.deshon@epa.state.oh.us) or Dennis Mishne at (614) 836-8775 or [dennis.mishne@epa.state.oh.us](mailto:dennis.mishne@epa.state.oh.us) before preparing and submitting any information. The Agency's capacity to accept and utilize the data in preparation of the Integrated Report is dependent upon a variety of factors and the use of all data brought to our attention may not be possible. Data must have been collected after January 1, 2009 and must meet the basic acceptability specifications listed above. Data must be provided in electronic format such as STORET, Excel or Access.

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## To whom do I send the data?

Submit microbiological data and supporting information listed above by July 15, 2011, to Chris Skalski, [chris.skalski@epa.state.oh.us](mailto:chris.skalski@epa.state.oh.us), Ohio EPA/DSW, P.O. Box 1049, Columbus, Ohio 43216-1049.

Submit biological, physical, and chemical water quality data and supporting information listed above by July 15, 2011, to Jeff DeShon, [jeff.deshon@epa.state.oh.us](mailto:jeff.deshon@epa.state.oh.us), or Dennis Mishne, [dennis.mishne@epa.state.oh.us](mailto:dennis.mishne@epa.state.oh.us), Ohio EPA/Groveport Field Office, 4675 Homer-Ohio Lane, Groveport, Ohio 43125.

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More information about the Integrated Report is on the [2012 Integrated Water Quality Monitoring and Assessment Report](#) page.

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## D5.2 Web Page Announcing 2012 Integrated Report Preparation

### 2012 Integrated Water Quality Monitoring and Assessment Report

#### Preparation of 2012 Integrated Report is Underway

Ohio EPA is preparing the 2012 Integrated Report, which fulfills the State's reporting obligations under Sections 303(d), 305(b) and 314 of the Federal Clean Water Act. The report will indicate the general condition of Ohio's waters and list those waters that are currently impaired and may require Total Maximum Daily Load (TMDL) development in order to meet water quality standards.



U.S. EPA released [guidance](#) on the preparation of 2012 Integrated Reports in March 2011. The [most recent Ohio Integrated Report](#) was completed on March 8, 2010.

In the 2010 report, Ohio EPA made major changes to assessment unit size, methodologies, and report format. Ohio EPA plans to update the content of the 2012 Integrated Report but does not expect to make similar major structural changes.

#### Major project milestones and dates for completion are:

Refine methodologies / compile data	June - October 2011
External level 3 credible data are due to Ohio EPA	August 1, 2011
Prepare list / internal review	October - November 2011
Public notice draft 303(d) list	December 2011 - January 2012
Respond to comments / prepare final list	February - March 2012
Submit to U.S. EPA Region V for approval	April 1, 2012

Please continue to check this website for updates.

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#### For more information, contact:

Trinka Mount  
TMDL Coordinator  
[trinka.mount@epa.state.oh.us](mailto:trinka.mount@epa.state.oh.us)  
(614) 644-2140

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Back to the [Ohio Integrated Water Quality Monitoring and Assessment Report](#) page.

\* Although Ohio EPA cannot endorse, sanction or guarantee the accuracy of information found on external Web sites, we think you might find these outside links useful. When you select a link to an external Web site, you are leaving Ohio EPA's Web site and are subject to the privacy, security and accessibility policies of the owners/sponsors of the external site.

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### **D5.3 Notice of Availability and Request for Comments FWPCA Section 303(d) TMDL Priority List for 2012**

The following notice was posted on the Division of Surface Water web page, included in the Ohio EPA Weekly Review, and published in major newspapers statewide.

Public Notice Date: December 28, 2011

#### OHIO ENVIRONMENTAL PROTECTION AGENCY PUBLIC NOTICE

#### **NOTICE OF AVAILABILITY and REQUEST FOR COMMENTS FWPCA Section 303(d) TMDL PRIORITY LIST FOR 2012**

Public notice is hereby given that the Ohio Environmental Protection Agency (Ohio EPA) Division of Surface Water (DSW) is providing for public review and comment the Total Maximum Daily Load (TMDL) priority list for 2012 as required by Section 303(d) of the Federal Water Pollution Control Act, 33 U.S.C. Section 1313(d). The list indicates the waters of Ohio that are currently impaired and may require TMDL development in order to meet water quality standards. The waters are ranked according to level of impairment to help indicate which have the greatest need for TMDL development. The list is contained within the *2012 Integrated Water Quality Monitoring and Assessment Report*, which in accordance with federal guidance, satisfies the Clean Water Act requirements for both Section 305(b) water quality reports and Section 303(d) lists. The report describes the procedure that Ohio EPA used to develop the list and indicates which areas have been selected for TMDL development during FFY 2012 through 2014.

Ohio EPA will hold a public information session on January 11, 2012, at 3:30 p.m. The meeting will be held at the Ohio EPA, Conference Room A, 50 West Town Street, Suite 700, Columbus, OH 43215.

All interested persons wishing to submit comments for Ohio EPA's consideration may do so by email to [dsw.webmail@epa.state.oh.us](mailto:dsw.webmail@epa.state.oh.us), or in writing to Ohio EPA, Division of Surface Water, P.O. Box 1049, Columbus, Ohio 43216-1049 Attn: 303(d) Comments, by the close of business, February 6, 2012. Comments received after this date may be considered as time and circumstances permit. After consideration of comments, Ohio EPA will submit a final document to the United States Environmental Protection Agency (U.S. EPA) for approval. The final report must be submitted to U.S. EPA by April 1, 2012.

The report will be available on the Ohio EPA Division of Surface Water Web site at <http://www.epa.ohio.gov/dsw/Home.aspx> no later than December 28, 2011. To receive a printed copy, contact the Ohio EPA - DSW reception desk by telephone at (614) 644-2001 and request the report by name. To arrange to inspect Agency files or records pertaining to the document, to ask technical questions regarding the list or report, or to request notice of when Ohio EPA submits the document to U.S. EPA, please contact the e-mail address above or call Trinka Mount at (614) 644-2146 or Beth Risley at (614) 728-2384.

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## D6. Public Comments and Responses to Comments on Draft Report

The Draft 2012 Ohio Integrated Report was available for public review from December 28, 2011 through February 6, 2012. This section contains the comments received and responses to those comments.

Six sets of public comments were received on the draft report, in addition to comments from U.S. EPA. The initials in parentheses following each comment denote the specific commenter, as listed in the following table:

Initials	Name	Organization	Date Received
CB	Cheri A. Budzynski	Shumaker, Loop & Kendrick, LLP; representing the Water Task Force of the Ohio Utility Group	February 6, 2012
LW	Lyman C. Welch	Alliance for the Great Lakes	February 6, 2012
MM	Michael Murray	National Wildlife Federation	February 6, 2012
SB	Sandy Bihn	Lake Erie WaterKeeper	February 6, 2012
GM	Grant Maki	Ohio Environmental Council	February 7, 2012
RH	Robin Halperin	Northeast Ohio Regional Sewer District	February 7, 2012

One other comment was received that did not concern the Integrated Report and, therefore, no response is being provided. Copies of the comments are included at the end of this appendix and are available for review.

The public comments are grouped by general topic, followed by editorial comments. Please note that location references to the draft report may not correspond to the same page numbers in the final report.

In late 2011, Ohio EPA requested that U.S. EPA complete a TMDL for the western basin of Lake Erie. Options subsequently discussed with U.S. EPA included using Ohio's nearshore listings for nutrients as a basis for an open water TMDL and U.S. EPA adding Lake Erie to the 303(d) lists of Ohio and other states.

U.S. EPA provided comments on the draft 2012 Integrated Report in a letter dated February 6, 2012 (included at the end of this section). The letter included data that U.S. EPA believes could be used to include Lake Erie on the 2012 303(d) list.

After careful consideration, Ohio EPA has decided not to add Lake Erie to the 2012 303(d) list because the data were not received by the submission date for consideration of external data and no methodologies exist for considering the data. A new public review period would also be needed for the new listing, and there would not be time to do so before the April 1 submittal deadline. Ohio will consider listing Lake Erie on the 303(d) list in 2014, taking into consideration the many factors about data quantity and quality, methodology and authority and shared responsibility with other contributing states.

In the meantime, U.S. EPA is willing to proceed with work that will set the stage for a TMDL (e.g., evaluate targets, evaluate data, investigate allocation scenarios). This will likely result in allocations at the mouths of streams flowing into Lake Erie, then the states will need to do TMDLs on each of the tributaries. Ohio has already completed or is in the process of developing nutrient TMDLs on many of these streams; depending on the alignment of the stream-based targets with lake targets, some of these approved TMDLs may need to be revised.

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U.S. EPA also commented on wetland listings. One comment involved a statement in Section I1 regarding wetland rules. The rule package addressed in this comment was proposed several years ago and has not been adopted. At this time, the changes being discussed are on hold and unlikely to be adopted in the near future. As such, Section I-1 has been modified in the following manner:

*A rule package was proposed in 2006 that included wetland numeric biological criteria, which would have established benchmarks for attainment of a tiered, ecoregion-specific wetland aquatic life use system. This rule package is currently on hold and unlikely to be adopted in the near future. However, it is still Ohio's intention to incorporate this system into future Ohio EPA rules, if possible.*

Also, Ohio is not proposing to apply any additional chemical criteria to wetlands. Currently, we have a single wetland designated use, and the only criterion that applies is that warm water habitat chemical parameters must be met at the end of any pipe that discharges to a wetland. Ohio EPA's currently proposed rules will not change this requirement. If there is any misunderstanding with these proposed rules, please contact Ohio EPA for further clarification.

If watershed-specific probabilistic surveys of wetlands are conducted in the future, the ORAM, VIBI and AmphIBI scores generated would be used to verify results from the Level 1 assessments. Level 2 and Level 3 data that have been collected historically from each watershed will be reported for informational purposes, but will not be used to verify Level 1 assessments, as these historic data were not always collected from a random selection of wetlands. Current resources do not allow Ohio EPA to systematically assess wetland resources on a rotating watershed basis in the same manner that rivers and streams are monitored in Ohio. However, this approach would be possible if additional resources were made available.

Ohio will be reporting wetland data as discussed in the draft Integrated Report summarized on a watershed assessment unit basis. At this time, Ohio EPA is not planning to list individual wetlands based on the proposed methodology.

### **Comment (GM)**

Harmful Algal Blooms should be discussed in the Recreational Use section, in addition to their own section.

Harmful Algal Blooms ("HABs") have significantly impacted Lake Erie as well as many inland lakes and streams, resulting in harm to human and animal health and increasing the costs of treatment for drinking water supplies.<sup>3</sup> We therefore support OEPA's efforts to monitor and combat HABS in Ohio, and its intention to include a further discussion on HABs in future integrated reports.

We also feel that HABs should be discussed in Section F, evaluating the beneficial use of recreation. Harmful algal blooms have caused numerous beach closures and advisories over the past several years, including the designation of Grand Lake St. Marys as a distressed watershed. The distressed watershed designation was made in part because Ohio DNR found that the lake's waters represented a threat to human health, and that the water was not fit for

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<sup>3</sup> George Elmaraghy, Nutrient Reduction Strategy Framework for Ohio Waters, Ohio EPA (Nov. 2011), 5. available online at: [http://www.epa.ohio.gov/portals/35/documents/nutrient\\_reduction\\_strategy\\_framework.pdf](http://www.epa.ohio.gov/portals/35/documents/nutrient_reduction_strategy_framework.pdf)

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recreation.<sup>4</sup> While *E. Coli* is one good indicator of attainment for the recreational uses, it is also clear that HABs are an independent impairment on the recreational use of Ohio's waters. Thus, a discussion of recreational uses that mentions only *E. Coli* is incomplete. Where credible data is available, it would help present a more complete picture of the status of recreational beneficial use in Ohio to discuss HABs.

We understand that HABs have not made a significant impact on drinking water that is delivered to customers in Ohio. With that in mind, it is acceptable to limit the discussion of HABs impact on drinking water to subsection I4, dealing specifically with HABs. Perhaps it would also be worthwhile to mention HABs in the Section H, evaluating drinking water supplies, as a potential threat that is currently being managed successfully. It would present a more complete picture of the status of the beneficial use and highlight Ohio EPA and other actors' efforts in controlling the problem.

### **Response**

Ohio EPA has not developed methods to evaluate the trophic state of Lake Erie's open water. Recently Ohio EPA received a Great Lake Restoration Initiative grant to develop a Nearshore Monitoring Program in the hope that additional information can be collected to understand the lake environs.

The discussions in Sections E, F, G and H are limited to the factors that influence decisions about including waters on the 303(d) list of impaired waters. For the most part, Ohio EPA has restricted its listing methodology to comparisons of high-quality data (as stipulated in the Ohio Administrative Code 3745-4) to promulgated Ohio administrative rules. By relying on criteria that have been vetted through a public review process, Ohio has maintained a strong 303(d) list that can withstand scrutiny. Ohio EPA does look beyond the 303(d) list, however, and works to improve waters where no listing exists because TMDLs are only one tool and permits and incentive programs can be effective on their own.

Ohio EPA believes that the appropriate way to handle HABs with respect to the Integrated Report is to include as much information as is available for Ohio waters (per requirements of Section 305(b)), to list when stable criteria are available, and to work as vigorously as possible to reduce excess nutrients from various sources.

### **Comment (LW)**

Ohio EPA must modify assessment methodology for recreational use to include impairment of beaches due to algae.

Lake Erie has recently experienced a large increase in algae; including both harmful algal blooms (HABs) caused by cyanobacteria as well as excessive nuisance algae. Algal blooms in Lake Erie are observable from space (Figure 1) and cover most of the Western and parts of Central Basins of Lake Erie. They are unsightly, odorous, and detrimental to recreation. Algae may also interfere with drinking water treatment. Furthermore, HABs produce toxins harmful to people and wildlife. Unfortunately, Ohio EPA has not modified its methodology to evaluate impairment at Great Lakes beaches due to algae. Recreational use is clearly impaired when stinky slime covers the beach or nearshore waters, especially if this slime harbors toxins. The

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<sup>4</sup> See Ohio DNR, *Distressed Watershed Designation Analysis Grand Lake St. Marys Watershed* (Jan. 2011), 8, available at [http://ohiodnr.com/portals/12/water/watershedprograms/GLSM/Distressed Watershed Designation Analysis Grand Lake St Marys.pdf](http://ohiodnr.com/portals/12/water/watershedprograms/GLSM/Distressed_Watershed_Designation_Analysis_Grand_Lake_St_Marys.pdf)

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Alliance urges Ohio EPA to apply methods to assess recreational impairments due to excessive algae.

Algal blooms result from excessive nutrients in the water. Ohio's narrative criterion in water quality standards rule 3745-1-04 prohibits nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae. Since Ohio has not yet adopted numeric water quality standards for phosphorus and nutrients, Ohio EPA must apply methodology that utilizes its narrative standard to assess impairment of beaches due to excessive algae.



**Figure 1. Algae blooms across Western and Central Basins of Lake Erie, Oct. 2011**

The current methodology for recreational use does not include any evaluation of trophic levels of Lake Erie Assessment Units. This is alarming considering that the majority of US Lake Erie shoreline, impacted most severely by excessive nutrients and algae, falls under Ohio jurisdiction. Other Great Lakes states, including Minnesota, Wisconsin, and Michigan, have at least developed methods to evaluate the trophic state of the lakes' open water, and New York utilizes nutrient and algae criteria to evaluate use support of nearshore waters and beaches.

#### **Comment (LW)**

The draft 2012 report does not include any changes in the methodology or Lake Erie listings for phosphorus and algae impairments. Section I (Consideration for future lists) part 4 discusses what Ohio EPA has done to address HABs in the state waters, but the effort has been focused on monitoring and advisories. Addressing the root cause of the problem, i.e. nutrient pollution is discussed in section I4.5 only very briefly, concluding with the following statement:

“In the meantime, as documented throughout this report, ongoing monitoring identifies where nutrients are causing water quality impairments and TMDLs are being developed to quantify needed load reductions.”

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This statement is misleading at best because the tables summarizing use impairments do not include the information about the cause of impairment and therefore, it is not clear which TMDL will address excessive nutrients. Furthermore, nutrients are discussed only in the context of aquatic life impairments in Section G2.3 of the draft report, not recreational use. Section G2.3 actually states that most of the data in the nearshore regions was collected in the mid-1990's and is no longer relevant to make a proper assessment due to significant changes.

### **Response**

The report includes many tables that summarize on a statewide basis. The online summaries indicate the causes of impairment for each assessment unit (see <http://www.epa.ohio.gov/dsw/tmdl/2012IntReport/2012IRAssessmentSummaries.aspx>). Tables J-14 and J-15 also indicate which completed TMDLs included nutrient (phosphorus and/or nitrate) TMDLs.

### **Comment (LW)**

Section G2.3 also states that "... Ohio EPA was awarded a Great Lakes Restoration Initiative (GLRI) grant in 2010 to develop a comprehensive Lake Erie nearshore monitoring program. This 2011 – 2013 project includes a strategy to design and implement a monitoring program for the Ohio Lake Erie nearshore zone (including bays, harbors and lacustuaries) that can be maintained on an annual basis." There is no mention of it in Section F of the report and it is not clear whether this Lake Erie nearshore monitoring program will result in amendments to the recreation use assessment methodology of the Lake Erie nearshore areas and beaches. The Alliance urges Ohio EPA to make the program truly comprehensive such that recreational use of Lake Erie beaches can also be evaluated with respect to excessive nutrients and algae.

### **Response**

It is too early to say what will result from the nearshore monitoring initiative. Ohio EPA is collecting data, refining methodologies, and striving to develop a program that can be continued with available funding. Efforts to establish targets and criteria are ongoing.

Sections E, F, G and H discuss the methodology for listing. It is premature to speculate about how the nearshore monitoring findings may be used in future listings.

### **Comment (LW)**

Ohio EPA must list Lake Erie beaches as impaired for algae.

The algae and nutrient impairment of Ohio's Lake Erie beaches is shown by additional evidence in published EPA reports. Over the last decade, total phosphorus concentrations have been on the rise (2008 Lake Erie Lakewide Management Plan or, LaMP, p 20.) and coinciding with increasing total phosphorus concentrations has been a trend of increasing growth of algae. Excess algal growth in the following areas has them considered as impaired ecologically (LaMP p 56, Section 4.4):

- Impaired: Maumee Bay, lake effect zones of Maumee/Ottawa Rivers, *western basin*; nearshore and river mouth areas of Canadian *eastern basin*
- Potentially impaired: lake effect zones of certain Ohio tributaries, *western and central basins*; Rondeau Bay and nearby nearshore and river mouth areas, Canadian *central basin*

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Working with the Alliance's award winning Adopt-a-Beach™ program, Alliance volunteers adopt beaches and shoreline areas in their local community to conduct litter removal, monitoring and water quality testing. Adopters work with the Alliance to locate a beach to adopt and log the information they gather into our online database. Alliance for the Great Lakes volunteers have recorded algae levels in the water and on the beach during their Lake Erie beach data collection visits. In particular, Alliance volunteers recorded high levels of algae in the water and on the beach at the Edgewater Park beach on 8/9/2010 and 7/11/2011. Medium levels of algae were recorded at Euclid Beach on 8/4/2010 and 7/6/2011 and Put-in-Bay Village Bathing Beach on 8/22/2010.

The Alliance urges Ohio EPA to list all Lake Erie assessment units as impaired for algae. Placing these water bodies on the Category 5 list would ensure that TMDLs are developed to correct the impairments. Beaches in the Western and Central basins of Lake Erie are listed as impaired due to *E.coli* exceedances, however, excessive algae is a problem at many of these beaches as well.

### **Response**

Ohio has promulgated water quality criteria for bacteria, but such criteria for algae do not exist. The Lake Erie nearshore units are already listed for nutrients based on Ohio's aquatic life beneficial use methodology and data.

### **Comment (MM)**

Regarding harmful algal blooms (HABs), while we appreciate the efforts undertaken thus far, including development of the Ohio Harmful Algal Bloom Response Strategy, monitoring, and posting efforts, we would like to emphasize the importance of addressing the problem at the source (i.e., draft report, Section I4.5). We support development of efforts such as the Nutrient Reduction Strategy submitted to U.S. EPA, and assume that strategy draws on numerous other completed efforts (such as the Ohio Lake Erie Phosphorus Task Force Final Report). We also believe the Nutrient Reduction Strategy should consider recommendations from other efforts, such as the soon-to-be released recommendations from the Agricultural Nutrients and Water Quality Working Group, organized by the Ohio Department of Agriculture. Furthermore, we believe all state strategies and resulting programs addressing nutrients and impacts (such as HABs) should have adequate opportunity for public participation and input.

### **Response**

Ohio EPA uses collaborative, inclusive teams of stakeholders; environmental groups and the public would have the opportunity to comment and would be kept informed under the envisioned Advisory Panel. Please refer to the *Nutrient Reduction Strategy Framework* document (please see pages 79-82 at:

[http://www.epa.ohio.gov/portals/35/documents/nutrient\\_reduction\\_strategy\\_framework.pdf](http://www.epa.ohio.gov/portals/35/documents/nutrient_reduction_strategy_framework.pdf)).

### **Comment (LW)**

Ohio EPA must accelerate the schedule for TMDL implementation at Lake Erie beaches.

Many of Ohio beaches experienced a high number of beach action days in 2010, as required when levels of *E. coli* exceed a daily maximum of 235 CFU/100 mL. According to the Ohio EPA's procedure for determining status for attainment of recreational use, both the number beach action days and the seasonal geometric mean of *E. coli* are considered. If the number of beach actions days exceeds 10 percent of total beach days, the beach is considered impaired for recreational use (for results, see page F-8 of the 2012 draft report). The Alliance supports

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Ohio EPA's methodology for listing beaches as impaired for *E. coli* which considers both the seasonal geomeans as well as the number of beach action days in a season.

Alliance volunteers who monitor Lake Erie beaches throughout the season, and have done so for both 2010 and 2011 seasons, recorded high *E.coli* levels at Euclid Beach, Edgewater Park beach, Villa Angela Beach, Arcola Creek Park, Fairport Harbor Metropark, and Huntington Beach, which are currently monitored and are included in the draft 303(d) list. We support continued listing of these beaches based on our volunteer data.

*E.coli* levels that exceeded standards have been detected at the Bradstreet Landing – Rocky River Park on 8/15/2010, 9/13/2010, 11/23/2010, 4/17/2011, and 9/23/2011 and Red Bird Beach (a private beach in Lake Co) on 6/4/2011, where Ohio EPA does not conduct bacteriological monitoring. *E.coli* levels were also exceeded at Kelleys Island State Park on 5/15/2010, even though the draft list states zero advisories have been posted there during 2010. The complete monitoring data can be found here: <http://www.greatlakesadopt.org/Home/HistoricalData>. The Alliance urges Ohio EPA to perform additional bacteria monitoring and evaluate the Kelleys Island State Park Beach to determine if this beach and the assessment unit Lake Erie Islands meet the water quality standards for full support of recreational use.

### **Response**

Based on the Credible Data Law, Ohio EPA can only use level 3 credible data for the purpose of determining use attainment and to the Agency's knowledge, these data do not meet that qualification. Ohio EPA does not monitor bacteria in Lake Erie and relies on data provided by the Ohio Department of Health (ODH) and its affiliates. Ohio EPA reviewed the 2010 data from Kelleys Island, and also verified from ODH web site, that Ohio EPA had no bacteria samples over 235 in 2010 at Kelleys Island. The earliest sample data for Kelleys Island from 2010 was on 6/7/10. Looking at the six-year history of sampling data from Kelleys Island, there is not a single sample (n=63) that was found to exceed the 235 colony-forming units/100 milliliters advisory threshold. In addition, a single exceedance would not trigger a non-attainment determination.

Ohio EPA is not familiar with Rocky River Park or Red Bird Beach. If the ODH program expands its number of beaches of monitoring in the future, those data will be included in future assessments.

### **Comment (LW)**

The Alliance is disappointed that Ohio EPA pushed the TMDL dates back further to 2016 rather than expediting the TMDLs for Lake Erie beaches. The 2012 draft 303(d) list simply extended the projected TMDL dates for Lake Erie Shorelines by another year from the 2010 list. Based on the persistent high counts of beach action days and elevated *E. coli* levels at these beaches, these areas need action now, not four years in the future. Therefore, we ask Ohio to complete TMDLs for all Lake Erie Assessment Units in 2012.

### **Response**

It makes sense to base TMDLs on the most recent data, and the recently initiated nearshore monitoring program should provide data that will result in more robust TMDLs. Regardless of what is happening with TMDLs, Ohio EPA has been working to eliminate or reduce the sources of the bacteria that impair many of the beaches. Control plans are in place for most of communities on Lake Erie that have combined sewer overflows. Implementation of controls is ongoing, which will result in both short-term and long-term reductions. Likewise, the recently

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approved control plan for the Cleveland area will result in CSO reductions within the next four years as well as additional long-term reductions.

**Comment (SB)**

Ohio has poured millions of dollars into evaluating creeks that are not a drinking water source. These creeks measure the quality of fish and aquatic life. Meanwhile Ohio E.P.A. does minimal to no testing in Lake Erie and there are few to no reports on trends on nutrient loads and aquatic life in Lake Erie. The same is true of the Maumee River which is the Great Lakes largest and most biologically productive watershed. Other watersheds left out of analysis that are key indicators for Lake Erie's health are Maumee and Sandusky Bays which are forgotten in the analysis.

Also absent is a recognition of a growing algae problem in Ohio's inland lakes of which many have had beach closings due to algae.

While Lake Erie public water intakes are incurring growing costs from algae growth, sport fish populations are threatened, and Lake Erie's economy is waning, it is insulting to those of us that drink Lake Erie water to say that Ohio's waters are improving.

When the methodology Ohio uses to measure the quality of Ohio's waters totally misses the mark on stating that Ohio's waters have a major nutrient problem the system is broke and needs fixing. To comment on the specifics of the 303d list, would be akin to contributing to a broke and failing system that is then used to evaluate water quality through the various measurements. A system that is broke should not rely on a system that fails to identify growing nutrient problems as the case in Ohio when Ohio suggests water quality is improving while the reality is, it is degrading.

**Response**

Ohio EPA's approach to measuring and reporting on water quality in Ohio waters has been accepted by U.S. EPA and is generally viewed as among the best programs in the country. As an agency with statewide responsibility and limited resources, we understand that not all citizens will view the attention afforded to their particular narrower area of interest as adequate. Contrary to the commenter's assertions, Ohio EPA has listed nutrients as a cause of impairment for numerous waters, completed many nutrient TMDLs, and documented water quality improvement in nutrient impaired waters in Ohio.

**Comment (MM)**

Regarding the open waters of Lake Erie, we note that Ohio EPA in October 2011 sent a letter to the U.S. EPA requesting that the latter initiate a TMDL for open waters of the western basin of Lake Erie (draft report, Section J2). We recognize that it is appropriate for U.S. EPA to coordinate actions for TMDLs for multi-state water bodies. However, we believe Ohio, Indiana and Michigan still bear primary responsibility under the Clean Water Act for development of TMDLs for the western basin of Lake Erie. As such, we recommend that Ohio EPA compile monitoring data available for the open waters, expand monitoring as necessary to ensure adequate data are available for listing decisions, list such waters where impaired (including for parameters such as nutrients and harmful algae), and coordinate (through U.S. EPA) with the other two states in developing needed TMDLs to address the impairments.

**Response**

Thank you for the suggestions. Please see the discussion of U.S. EPA comments at the beginning of this section.

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**Comment (GM)**

Ohio EPA might profit from collaborating with other parties engaged in modeling of Lake Erie

Establishing water quality criteria and standards for Lake Erie is a complicated task, both from a technical standpoint and from a political standpoint. However, there is a large amount of modeling already being done for the Western Lake Erie Basin, and coordination between technical experts might reduce the technical burden on the agency and allow for sharing of knowledge to improve the technical results.

With Ohio EPA continuing to work on TMDLs in the Lake Erie basin, and the possibility of a Western Lake Erie TMDL from US EPA, it seems logical that there be a coordinated effort for modeling, sharing results, and especially for common conclusions and implementation. This would allow agency to save the resources that would be required to come up with independent models. And since so many of the models are weak on implementation, there is a real role for the agency to move the ball forward on a lot of these models.

We know of several models currently in existence. Government agencies have done a good amount of work, including USGS's SPARROW, the Army Corps of Engineers' work through LimnoTech, and Ohio EPA's own Lake Erie work, as well as any work US EPA might initiate in coming up with a TMDL for the Western Basin. The academic community has also made substantial contributions, including work done by Confesor out of Heidelberg University, by Ludsin et al. at OSU, and modeling done at Purdue University. The Nature Conservancy's Michigan office has also done modeling work for Lake Erie.

We understand that these models are done for different reasons and address different points, and some might not be compatible. However, as some are addressing the nutrient loss issue, all might benefit from getting together and determining how to avoid unhelpful competition, and how to collaborate on furthering the points that still need to be addressed. Jeff Reutter of OSU/Stone Lab has done a good job with the Lake Erie Millennium Network in organizing research on the Lake's health. Maybe there is better opportunity to organize the modeling of the terrestrial part of the basin.

We suggest that Ohio EPA could save resources and potentially provide the spark for synergistic effects of knowledge sharing by bringing various modeling experts to the same table. If everyone could agree on goals (e.g. agreeing on acceptable loads to Lake Erie and stream health conditions) and increase the focus on implementation, we think there could be potential for much to be gained from coordinated effort. Anthony Sasson at The Nature Conservancy has specifically requested that we inform Ohio EPA that he is interested in helping to coordinate this collaborative effort in any way that he can.

**Response**

Thank you for the suggestions. Please see the discussion of U.S. EPA comments at the beginning of this section.

**Comment (SB)**

Rather these comments are asking that Ohio's water quality assessment methodology be totally changed so that when something like nutrient inputs grow over a fifteen year period, as documented by Heidelberg College, the 303d list methodology will show the changing trends and decline in water quality and aquatic life.

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Please consider the following:

1. Ohio should measure water and aquatic quality standards at the outfalls of each stream, river, bay, and lake to determine what the acceptable load at the outfall is for various inputs like phosphorous, ammonia, nitrogen, chlorophyll, dissolved oxygen should be. Then work from the main water bodies back to the tributaries. In this way the targets are established from the impacted water rather than acting as though each stream is independent of connecting waters. By establishing targets at the outfalls meaningful reductions, where needed, will establish needed goals for water improvement.
2. Ohio should measure water quality improvement by weighing water use with the highest order given to drinking water sources and consumable fish.
3. While the Ohio River is not in Ohio's jurisdiction over 2/3 of the State of Ohio drains to the Ohio River with the rest to Lake Erie. There should be measurements at the outfall of tributaries to the Ohio River with known acceptable loads to the Ohio River from Ohio's Ohio River tributaries.
4. While there seems to be testing of fish tissues for Ohio water quality analysis, there seems to be no trend analysis on the populations of each type of fish in the stream and if there are changes in the type of fish that the stream can support. Estimating fish quantity species would provide a check and balance in the system. If the type of fish a stream is supporting accepts a lower quality of water than the stream has historically had, then this means the stream, river, bay, lake is impaired. This factor should be part of the water quality assessment. For instance Lake Erie, according to Ohio DNR is getting more low quality fish because of decreased water quality than the more desirable fish like walleye and yellow perch.
5. A problem in the Western Lake Erie watershed and all tributaries is that the transport of water has increased because of field tiles, storm and development. Yet the models seem to suggest that conditions are the same today as they were before field tiles, expanded storm drainage and development along with changes in the types of crops planted and the practice of manure application. There needs to be testing that determines the impacts of these changes on water quality.
6. There seems to be no assessment on water quality from Ohio's allowed practice of applying manure and fertilizer to frozen ground.
7. Weather pattern/climate changes should be factored into how, when and the frequency of sampling collection. Results will be different if the water and sediment is sampled and analyzed before and/or after a wind/rain event. Results will also differ by at the outfall, upstream or downstream from a storm, creek, point source, river, bay outfall.
8. The Lake Erie model for point sources is lake wide. There needs to be a separate model and different requirements for point sources in the very shallow Western basin. The discharge allowance should not be the same for discharging limits in the 5' waters of Maumee Bay to be the same as discharge limits in Lake Erie at Ashtabula where the water is over 100' deep. This makes no sense.

Ohio should take a lead in water quality as the Ohio economy has a huge stake in needing good water quality, especially a healthy Lake Erie that supports tourism, fishing and good drinking water. Much is at stake if Ohio and USEPA allow the same old water quality assessments which will continue to support a failing Lake Erie.

### **Response**

Nutrient issues and the western basin of Lake Erie are now at the forefront of much research and modeling in response to observed resource quality declines in the last several years. The following web site (<http://ohioseagrant.osu.edu/maumeeriver/>) provides a good example of the

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multi-disciplinary activities going on in one Lake Erie watershed to try to understand the dynamics of the nutrient, sediment, and algal bloom issues. The outcome should be a practical and efficient course of action that can be presented to regulators including local, state, federal, and international agencies so that their task of restoring and protecting the Great Lakes and watersheds can be undertaken with sound science, a concerted focus, and the prudent use of public monies.

Concerning the Ohio River basin, Ohio is a member of the Ohio River Valley Water Sanitation Commission (ORSANCO), a multi-state compact taking a lead role in water quality issues related to the multi-jurisdictional Ohio River and its various major tributaries, as well as taking a much broader perspective and role with regard to the Gulf of Mexico hypoxia issue. ORSANCO has been active in pollutant modeling activities and total maximum daily load assessments for several key pollutants impairing beneficial uses in the Ohio River mainstem. Their web site (<http://www.orsanco.org/programs>) provides much greater detail as to the types of activities that have been completed or are underway.

Ohio EPA does not believe that the methodology for determining the attainment or non-attainment of designated aquatic life uses is relevant to the comments made by the commenter. In fact, the methodology seems to work well in that nearly all, if not all, of the major Ohio tributaries flowing into the western Lake Erie basin are already listed as impaired for aquatic life, especially in the lower reaches influenced by Lake Erie water levels. Major causes of the impairment almost universally include nutrients. The three defined Lake Erie shoreline assessment units are also listed as impaired for aquatic life and each includes nutrients, siltation and exotic species (e.g., *Lyngbya wollei*) as causes. The overarching issue is how best to proceed with actions to reduce or eliminate these causes of impairment. While a western Lake Erie basin TMDL is a possibility, TMDL activities are being implemented in all the major Ohio basins draining to Lake Erie. As implementation proceeds, there should be declining trends in nutrient and sediment loads beneficial to the western basin. Ohio EPA is optimistic that beneficial uses will ultimately be restored but, through adaptive management, course changes can and will be made if necessary.

#### **Comment (MM)**

Regarding monitoring, Section G3.3 of the draft report notes that due to recognition of a substantial portion of existing data being historical, there have been recent changes in aquatic life use status of the three Lake Erie assessment units (though the assessment units remain listed as Category 5, with impairments “due primarily to tributary loadings of nutrients and sediment...”) (draft report, page G-9). The draft report also describes other data collection efforts underway, including both the National Aquatic Resource Survey of coastal waters and the Great Lakes Restoration Initiative-funded multi-agency and university monitoring effort. While these efforts are laudable, and resulting data should be used in the various applications identified in the draft report, it is important that Ohio EPA build on these efforts and have a strategy to ensure regular and long-term monitoring of priority areas and for priority parameters, including nutrients in Lake Erie tributaries and nearshore areas, and beyond the period of the two aforementioned projects.

#### **Response**

Building on existing Lake Erie near shore projects and establishing a long-term monitoring and assessment program is a priority of the Ohio EPA surface water program and has thus been highlighted in the recently revised Ohio EPA Surface and Ground Waters Monitoring Strategy 2011-2015 ([http://www.epa.ohio.gov/portals/35/documents/FinalOHStrategy\\_2011.pdf](http://www.epa.ohio.gov/portals/35/documents/FinalOHStrategy_2011.pdf)). In

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particular, see the program deficiency noted in Table 6 on p. 87 and discussed in more detail in Section J.2.4 on p. 99.

### **Comment (GM)**

Stream flow and impacts from withdrawals should be studied, monitored, and/or reported on more closely.

Ohio EPA lists hydromodification among the top causes of impairment and as a main cause of impairment for aquatic life.<sup>5</sup> Reduced stream and river flows result in lower water levels, which can be harmful to aquatic life. Flow reduction also results in an increased concentration of effluents. Ohio EPA is right to mention hydromodification as a major cause of aquatic life impairments, and to consider hydromodification when it develops TMDLs or other potential solutions to water quality problems.

However, we suggest that hydromodification will become even more important in the near future, as the expansion of deep shale drilling causes increasing unregulated withdrawals<sup>6</sup> at the same time that the implementation of the Great Lakes Compact requires more fine grained stream flow management. Given these foreseeable future events that will increase the importance of hydromodification as an impairment on water quality, we suggest that Ohio EPA should place greater emphasis on stream and river flow in its present and future analysis of water quality, so that baselines can be measured and progress can be recorded.

In these circumstances, a comprehensive statewide assessment of stream flow and a commitment to detailed modeling of the potential effects of flow modification would be of great help to assessing the impact of water flow impairments to the various beneficial uses, and to the informed and effective implementation of the Compact

Therefore, we suggest Ohio EPA work to undertake a comprehensive statewide assessment of these impairments and address hydromodification in both the 'free from' and numeric water quality standards. Hydromodification standards would both address this impairment directly and also help meet existing water quality standards and TMDLs that are being developed. Such standards would provide a consistent level of environmental protection and improve the quality of regulatory decisions. They would also support efforts to implement the Compact by protecting our rivers and streams while allowing for other reasonable uses.

While the Integrated Report might not be the most logical place for much of this analysis, we encourage Ohio EPA to working to better understand and address hydromodification in the coming years.

### **Response**

Hydromodification is a fairly general term used by Ohio EPA to reflect a broad range of impairment conditions. The most common hydromodification-related impairments are those prevalent in agricultural watersheds where a significant amount of field tiles are used to facilitate drainage and enhance crop production, and in urban and suburban areas where extensive hardening of the watershed is occurring because of impervious surfaces. In both cases, the impact to aquatic life can be manifested with water quantity and water quality problems.

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<sup>5</sup> *Id.* at A-7(table) and A-9

<sup>6</sup> As EPA knows, each fracture can require around 5 million gallons of water, and currently there are no time, place, or manner restrictions on the withdrawals. Thus they are relatively more likely to occur during low-flow or other inopportune times. Further, wells can be refractured several times, requiring even more withdrawals.

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In the case of water quantity, the main problem is the disruption of the hydrologic cycle resulting in “feast or famine” scenarios where runoff from precipitation events is rapid and has high energy, followed by extensive periods of little or no surface flows, often resulting in intermittency. While Ohio EPA has no legislative authority to directly address hydromodification (i.e., quantity) issues with water quality standards, we do encourage and support efforts to address both quantity and quality issues due to hydromodification. Examples include urban/suburban projects focused on use of rain gardens and pervious surfaces and agricultural projects utilizing controlled drainage structures.

Concerning water needs in the emerging shale gas industry, it is likely that market pressures, industry innovations and prudent regulations will encourage the most efficient and economical use and reuse of water for hydraulic fracturing projects.

**Comment (RH)**

...In the Cuyahoga River Large River Assessment Unit Summary, data collected at RM 16.20 by NEORSD is not included. Assessments at this site in 2009 and 2010 have shown this area to be in full attainment of the warmwater habitat criteria. It was uncertain if this data was unintentionally [*sic*] omitted from the report, but its inclusion may help to further demonstrate the recovery within that section of the river.

**Response**

Because of the structure of the Ohio EPA data management system, the NEORSD data collected in 2009 and 2010 at RM 16.2, while not readily apparent, are included and accounted for. The LRAU summary lists a station at Hillside Road [river mile (RM) 15.6] that is the umbrella station for all data collected in that general vicinity, including the NEORSD data collected at RM 16.2. In fact, the assessment listed at the RM 15.6 umbrella station is based solely on the recent NEORSD data from RM 16.2.

**Comment (MM)**

Concerning the listing status and remedies for Lake Erie assessment units, the draft report appears to be inconsistent. For example, Figure J-5 in the draft report indicates Lake Erie nearshore waters are in the “impaired, other remedy” category, for human health and aquatic life (for all three assessment units), and recreation (for two assessment units). In contrast, discussion in Section G3.3 notes that all three Lake Erie assessment units remain Category 5 (thus needing TMDLs), and Section L3 indicates that all three assessment units are projected to have TMDLs developed by 2016. Presumably, Figure J-5 should be modified to reflect the current situation for impairments in nearshore Lake Erie.

**Response**

Thank you for pointing out this error. Both Figure J-5 and Table J-4 have been corrected.

**Comment (RH)**

In Table D-3 on page D-8, NEORSD fish tissue data used in the report is listed as being from 2007. This data was instead collected in 2008 as part of the joint project between the Ohio EPA and the NEORSD.

**Response**

The correction has been made in the final report.

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**Comment (CB)**

In the first full paragraph under G3.2 Watershed Units on page G-8, the word gauge is misspelled as “gage.” The sentence should read “Included in Table G-1 and depicted in Figure G-3 is the corresponding average score based on the old HUC11 WAUs, which were tracked from 2002 through 2010 and were used to **gauge** the progress ...” (emphasis added).

**Response**

The correction has been made in the final report.

**Comment (GM)**

We support the suggested more thorough discussion of Ohio’s wetland resources

We encourage Ohio EPA to present a more thorough discussion of wetlands in future Integrated Reports. We are particularly enthusiastic about OEPA’s plans to develop numeric biocriteria for wetlands. We also support plans to more rigorously evaluate and monitor the state of Ohio’s wetlands, including developing an inventory of historic wetland areas and an inventory of wetlands quality, together with an effort to evaluate the state of wetland buffer regions. These project would provide valuable information that would guide our efforts to maintain our wetland resource and specifically to evaluate and improve the effectiveness of mitigation projects, which are generally more successful when they take place in hydric soils over old wetlands.<sup>7</sup>

When Ohio EPA maps the historic and current wetland areas, it would be useful to also provide a breakdown of historic and current wetland use attainment in each twelve digit HUC. It would be best to combine this breakdown with evaluations of wetlands’ biological health, if possible. This would allow the agency to keep track of how effectively wetland functions are being maintained in each watershed, which is necessary to effectively evaluate the achievement of the goal of no net loss of wetlands in the state of Ohio.

**Response**

Thank you for the comment. The Ohio EPA Wetland Ecology Group intends to perform the preliminary historic and current wetland analysis for each watershed assessment unit (WAU) in Ohio as part of the 2014 Integrated Report. The long-term goal of the program is to determine wetland use status based on numeric biological criteria. Unfortunately, conducting specific watershed-targeted field assessments of the wetland vascular plant and/or amphibian communities is not feasible at this time using current resources. However, a level 1 wetland assessment using geographic information systems modeling, similar to the protocols described in the 2012 Integrated Report, will be conducted to evaluate wetland health within each WAU. While these off-site assessments are not as detailed as on-site biocriteria methodology, the information should be sufficient to estimate the overall ecological health of Ohio’s remaining wetland resources, and will allow Ohio EPA to document whether wetland functions are being adequately maintained within each of these WAUs.

**Comment (GM)**

We support the idea of future Integrated Reports containing a separate section on Inland Lakes.

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<sup>7</sup> Micacchion, Mick, Brian D. Gara, and John J. Mack. 2010. *Assessment of wetland mitigation projects in Ohio. Volume 1: An Ecological Assessment of Ohio Individual Wetland Mitigation Projects*. Ohio EPA Technical Report WET/2010-1A. Ohio Environmental Protection Agency, Wetland Ecology Group, Division of Surface Water, Groveport, Ohio, 13. available at: [http://www.epa.ohio.gov/portals/35/wetlands/M928\\_Final\\_Report\\_Vol\\_1.pdf](http://www.epa.ohio.gov/portals/35/wetlands/M928_Final_Report_Vol_1.pdf).

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We support Ohio EPA's continuing and expanding efforts to monitor and report on the health of our inland waters, have received more attention since the Grand Lakes Saint Marys was declared a distressed watershed. Since lakes are the final resting places for many upstream pollutants, they can be seen as representing a sort of aggregation of the water quality conditions that affect the watershed. An assessment of the health of Ohio's waters is most complete when it thoroughly discusses the health of lakes. Thus, such a discussion would be an improvement for future Integrated Reports.

### **Response**

Thank you for the comment. Ohio EPA hopes to expand the information provided for inland lakes as resources allow.

### **Comment (CB)**

Ohio EPA should revise the discussion of the Water Quality Standards for the Protection of Aquatic Life in Lakes to reflect the revisions that Ohio EPA made in the proposed rules that were public noticed on December 28, 2012 [*sic*] and later withdrawn on February 1, 2012. For example, Ohio EPA has indicated that it is no longer including lake habitat use criteria for Chlorophyll a, Phosphorus, and Secchi disk transparency in the rules and Ohio EPA has revised the criteria for Dissolved Oxygen. Further, because Ohio EPA is not moving forward with the nutrient criteria for lake habitat, the results for nutrients included in Table 1-2 regarding the lake habitat use assessment for lakes sampled in 2008-2010 using the draft assessment methodology should not be included.

### **Response**

Ohio EPA is still pursuing the nutrient criteria. However, it is not possible at this time to discern when the criteria might be adopted as rules. The intention behind previewing the methodology is to show how attainment determinations might be made for the lake habitat use in the future if criteria (such as those that were in the draft rules, which were not included in the rule proposal of 12/28/2011) are eventually codified in the water quality standards rules. The intention of including the preview methodology is to obtain comments on the approach before the practice is used to make official attainment determinations.

### **Comment (GM)**

Mercury contamination is an important issue that also merits further discussion

We are pleased to see a discussion of mercury included as a Consideration for Future Lists. Mercury is a bioaccumulative toxin of concern, meaning that it is not "cleaned up" by natural processes once it is released into the environment pollution. Instead, it builds up in the ecosystem and affects the beneficial use of human health by, for example, causing fish to become unsafe to eat.<sup>8</sup> Artificially removing mercury from water or the environment is also extremely expensive. Thus the agency is on the right track when it says that creating a 303(d) list just for mercury "would be preferable as a way to focus on this important pollutant".<sup>9</sup>

Mercury merits some separate discussion because it also affects the compliance status of WWTP in Ohio. Mercury often enters the environment as an air pollutant, but after it settles out of the air it typically makes its way into the water. Thus it exists in the water that flows in to WWTPs at elevated background concentrations. It is also discharged from businesses within the WWTP's service area. These factors may combine to make WWTP's effluent of mercury

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<sup>8</sup> See Draft Report, Section E

<sup>9</sup> *Id.* at I-9

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surpass its permitted limits, and yet the price of treatment to a healthy level can be steep. Because mercury is such a persistent and harmful pollutant that is discharged into the water primarily by sources that are not regulated as to water quality, it is somewhat unique pollutant from a regulatory perspective and therefore deserves its own separate discussion.

Because mercury pollution is such an important area of concern, we encourage EPA to go forward with the idea of implementing a 303(d) list for mercury. We also encourage Ohio EPA's other initiatives to try to solve the mercury problem, including identification of air sources of mercury and its affect on water bodies, adoption of statewide mercury reduction goals and targets, multi-media mercury monitoring, and public documentation of the State's mercury reduction program in conjunction with the State's Integrated Report.

While incorporating some of this information into future integrated reports would be beneficial, a free standing report that can focus in on mercury and evaluate the efforts to reduce mercury pollution could be even more helpful.

### **Comment (CB)**

As it did in 2008 and 2010, the Water Task Force continues to recommend that Ohio EPA pursue development of a voluntary mercury reduction program for the 2014 Integrated Report so that Ohio EPA may designate waters impaired by atmospheric deposition under subcategory 5m. As recognized by U.S. EPA, developing Total Maximum Daily Loads ("TMDLs") for mercury-impaired waters can be technically challenging because it requires a multi-media approach that is not feasible under the Clean Water Act alone. See, Memorandum from Craig Hooks, Director of the Office of Wetlands, Oceans, and Watersheds, U.S. EPA, to Regions I-X Water Division Directors regarding Listing Waters Impaired by Atmospheric Mercury Under Clean Water Act Section 303(d): Voluntary Subcategory 5m for States with Comprehensive Mercury Reduction Programs (March 8, 2007).

States are often presented with the insurmountable challenge of developing TMDLs although they lack the necessary resources. By implementing this voluntary program, the State would have additional time to develop TMDLs for mercury-impaired waters and the flexibility to develop programs that are tailored to address state-specific factors (e.g., economic feasibility, population exposure, economic impact, etc.). This proactive approach could lead to early reductions in mercury and reduce the number of mercury-impaired waters in Ohio. Furthermore, implementing the 5m impairment subcategory would help protect Ohio EPA from unfounded legal challenges.

The Water Task Force believes that the Ohio projects outlined in I3.2, if accomplished, would satisfy U.S. EPA's recommended elements of a voluntary mercury reduction program. Furthermore, in December 2011, U.S. EPA signed final rules that address mercury emissions from coal and oil-fired power plants. The standards in these rules will have an added benefit in significantly reducing mercury in waterbodies caused by atmospheric deposition. In implementing these projects in Ohio, however, the Water Task Force encourages Ohio EPA to make it as comprehensive as possible by examining a wide range of potential sources, processes, and products that contribute to mercury-impaired waters. This type of approach would allow Ohio EPA to implement the program in a way that ensures the greatest reduction in mercury and may result in the eventual delisting of mercury-impaired waters. Thus, the Water Task Force recommends that Ohio EPA make it a priority to implement this program by 2014 in order to ensure that early reductions are achieved.

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## Response

Ohio EPA continues to look for additional ways to reduce mercury emissions within the regulations and staff resources available.

## Comment (CB)

The Water Task Force recommends that Ohio EPA reassess the risk assessment input variables for determining whether a watershed is impaired for the PCB human health criteria. Under the methodology used in the 2012 Integrated Report, 48% of the state's stream miles and 23% of the state's inland lake and reservoir acres are impaired primarily due to Ohio EPA's assessment of PCBs in fish tissue. While a high percentage of streams have, historically, been listed as impaired due to measured PCB levels that exceed the fish consumption nonattainment use threshold, the Water Task Force is concerned with the practical implications of continued and pervasive "nonattainment" of the PCB criterion. Listing a water body as impaired consequently results in a *de facto* "no discharge" requirement for point sources located near that water body. The Water Task Force is concerned that if U.S. EPA adopts Method 1668C for detecting PCBs, point sources may find that they are discharging PCBs at levels higher than the water quality standards. While Method 1668C has not been officially adopted<sup>10</sup> by U.S. EPA pursuant to 40 CFR Part 136, Method 1668C has an extremely sensitive Method Detection Level and a discharger would likely report detectable levels of the pollutant even though the ultimate source of PCBs could be intake water or atmospheric deposition. Thus, the Water Task Force recommends that Ohio EPA reevaluate the values used to determine if a water body is impaired for PCBs so that it is prepared to address this issue if, or when, U.S. EPA elects to adopt the new analytic method. Moreover, it may be appropriate to list those water bodies impaired by PCBs under a separate category, such as the 5m category that is discussed below.

On page E-4—"Step 1: Determine available data," Ohio EPA describes the procedures used to evaluate fish tissue contaminant data for possible waterbody impairment. The second sentence reads: "The most recent 10 years of data collection, 2001 - 2010, were used for making category 1 and category 5 determinations." The Water Task Force believes that while the use of fish tissue data as old as ten years is generally acceptable, the agency should first assess the data for any temporal trends in contaminant concentration. While the Water Task Force understands that the long-term database for a particular species at a particular location may be limited, there are probably some locations where levels of a pollutant have been declining. There are many statistical procedures that can test whether a true trend is occurring or not. By calculating an average concentration of a contaminant in fish tissue over a 10-year period, the agency may find a risk of waterbody impairment that would not be identified if data from more recent years were used when there is evidence of a temporal trend.

Contaminant levels in fish tissue often co-vary with fish length, weight, or age. Does Ohio EPA evaluate fish tissue data using a size standardization? Levels of mercury in fish tissue are often standardized to a selected length so that comparisons of tissue levels over time are not confounded by size differences in fish collected throughout the assessment period.

Under Section "Step 2: Determine fish tissue contaminant concentrations," the agency indicates that one year of fish tissue data is adequate to categorize a waterbody as impaired or not impaired. The Water Task Force believes that such a decision should be based on the magnitude of variation in the fish tissue contaminant. While the Water Task Force agrees that a geometric mean concentration for each species at a particular location is appropriate, the variability of the pollutant concentrations should not be ignored. A trophic level-weighted

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<sup>10</sup> Adoption of this analytical method was proposed on September 23, 2010. 75 Fed. Reg. 58024-58076.

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average fish tissue concentration of mercury that has a cumulative coefficient of variation (CV) of 90% is different than a trophic level-weighted fish tissue concentration that has a cumulative CV of 25%. The difference between these CV is the certainty (confidence) in what is the true fish community average mercury concentration. The Water Task Force believes that Ohio EPA should consider the variability in levels of fish tissue contaminants before deciding that impairment decisions can be made with one year's data.

### **Response**

Non-attainment for PCBs is determined by a back-calculation to fish tissue concentrations from our water quality criteria. The water quality criteria have been developed using the procedures set forth in OAC 3745-1-36 through 39. In order to meet the guidelines set forth by U.S. EPA in its July 25, 2005 memorandum, "Guidance for 2006 Assessment, Listing, and Reporting Requirements Pursuant to Sections 303(d), 305(b), and 314 of the Clean Water Act," which explicitly states that "The assessment methodology should be consistent with the state's WQSs...", Ohio EPA is obligated to determine non-attainment in a way that directly ties back to Ohio's water quality criteria. In order to change the level of PCBs in fish tissue that would be considered in non-attainment, Ohio EPA would have to update the relevant OAC sections and subsequently update our water quality criteria to reflect those changes. In 2008, Ohio EPA proposed revising those sections of the OAC pertinent to the human health water quality criteria calculations to reflect newer methodologies; however, in 2011, the Agency decided not to move forward with the proposed changes. Therefore, the non-attainment thresholds for PCBs in fish tissue used in the 2012 Integrated Report continue to be the same thresholds as used in Ohio Integrated Reports dating back to 2006.

Should U.S. EPA move forward with adopting method 1668C for PCBs, Ohio EPA plans to evaluate permitting and compliance issues to determine how to deal with detections between the current reporting limit and the new, lower reporting limit that are in excess of the applicable water quality criteria. Ohio EPA has several possible legal mechanisms for dealing with potential non-compliance issues, including variances and site-specific criteria. Ohio EPA recognizes that in many cases, anthropogenic background levels of PCBs in the water column will be in excess of the water quality criteria, and will be prepared to take that into account in an appropriate regulatory context.

Ohio EPA has done some trend analysis on its fish tissue data in the past two years, as has U.S. EPA. However, Ohio EPA does not agree that a trend analysis is a relevant or necessary component to the Integrated Report attainment assessments. The Integrated Report is revised by Ohio EPA every two years; therefore, trends in impairment and tissue level changes can be tracked over time because of the frequency with which the report is generated. Though Ohio EPA uses ten years of data in its analyses, that ten years is a rolling average updated every two years with each new Integrated Report. Ohio EPA believes that by reevaluating and updating impairment information every two years, impairment determinations are up-to-date and reflective of all relevant data, irrespective of a separate trend analysis.

Ohio EPA acknowledges the many variables that affect fish tissue contaminant concentrations, and mercury concentrations in particular. However, the purpose of fish tissue data collection and assessment is not to determine an absolute value of mercury concentrations in fish tissue over time, such as would be provided by size standardization. The purpose of the data collection is to assess potential angler exposures to mercury concentrations in fish. Ohio EPA believes that its collection procedures for fish tissue capture the sizes and species of fish that anglers would catch and consume. Therefore, Ohio EPA is less concerned with whether mercury differences are caused by changes in fish size, because the important factor is that a

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typical angler would be catching, and subsequently consuming, larger fish if they are readily available.

Ohio EPA uses the attainment determination methodology for fish tissue specified by U.S. EPA in its “Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion” (April 2010). That methodology does not take into account the variability of pollutant concentrations. While Ohio EPA recognizes that some single-year data sets may be skewed by one or several highly contaminated fish, and that the level of skewness could be statistically determined, there is not a provision or guideline for what confidence level in fish tissue would be considered acceptable for determining impairment. The impairment determination process allows for delisting if subsequent data from an assessment unit indicate that the original impairment determination was not accurate. Ohio EPA believes that if original impairment determinations were made in error owing to a skewed single-year data set, follow-up evaluations will provide data to correct the error and reduce the original uncertainty.

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Copies of comment letters, in order received.

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February 6, 2012

VIA EMAIL AND U.S. MAIL

Ohio EPA  
Division of Surface Water  
P.O. Box 1049  
Columbus, Ohio 43216-1049  
[dsw.webmail@epa.state.oh.us](mailto:dsw.webmail@epa.state.oh.us)

Attn: 303(d) Comments – 2012 Integrated Water Quality Monitoring and  
Assessment Report  
*Our File No. 043751*

To Whom It May Concern::

On behalf of the Water Task Force of the Ohio Utility Group and its members,<sup>1</sup> we submit the following comments on the 2012 Integrated Water Quality Monitoring and Assessment Report and the 303(d) list (“Integrated Report”) that Ohio EPA has proposed to submit to U.S. EPA. The Water Task Force appreciates the time and effort that Ohio EPA has put into the Integrated Report, which is an extensive and detailed document. The Water Task Force believes that Ohio EPA has produced, in general, a technically sound approach to assessing the status of water bodies. However, because Ohio EPA strives to ensure that each report is updated with the most accurate data and the most sound scientific techniques, the Water Task Force provides these comments and hopes that Ohio EPA will consider them as it finalizes the report.

**Section E. Evaluating Beneficial Use: Human Health (Fish Contaminants)**

The Water Task Force recommends that Ohio EPA reassess the risk assessment input variables for determining whether a watershed is impaired for the PCB human health criteria. Under the methodology used in the 2012 Integrated Report, 48% of the state’s stream miles and 23% of the state’s inland lake and reservoir acres are impaired primarily due to Ohio EPA’s assessment of PCBs in fish tissue. While a high percentage of streams have, historically, been listed as impaired due to measured PCB levels that exceed the fish consumption nonattainment use threshold, the Water Task Force is concerned with the practical implications of continued and pervasive “nonattainment” of the PCB criterion. Listing a water body as impaired consequently results in a *de facto* “no discharge” requirement for point sources located near that water body. The Water Task

<sup>1</sup> The member companies include Buckeye Power, Inc., Columbus Southern Power Company (AEP), The Dayton Power and Light Company, Duke Energy Ohio, Inc., First Energy Corp., Ohio Power Company (AEP), and Ohio Valley Electric Corporation.

Force is concerned that if U.S. EPA adopts Method 1668C for detecting PCBs, point sources may find that they are discharging PCBs at levels higher than the water quality standards. While Method 1668C has not been officially adopted<sup>2</sup> by U.S. EPA pursuant to 40 CFR Part 136, Method 1668C has an extremely sensitive Method Detection Level and a discharger would likely report detectable levels of the pollutant even though the ultimate source of PCBs could be intake water or atmospheric deposition. Thus, the Water Task Force recommends that Ohio EPA reevaluate the values used to determine if a water body is impaired for PCBs so that it is prepared to address this issue if, or when, U.S. EPA elects to adopt the new analytic method. Moreover, it may be appropriate to list those water bodies impaired by PCBs under a separate category, such as the 5m category that is discussed below.

On page E-4— “Step 1: Determine available data,” Ohio EPA describes the procedures used to evaluate fish tissue contaminant data for possible waterbody impairment. The second sentence reads: “The most recent 10 years of data collection, 2001 - 2010, were used for making category 1 and category 5 determinations.” The Water Task Force believes that while the use of fish tissue data as old as ten years is generally acceptable, the agency should first assess the data for any temporal trends in contaminant concentration. While the Water Task Force understands that the long-term database for a particular species at a particular location may be limited, there are probably some locations where levels of a pollutant have been declining. There are many statistical procedures that can test whether a true trend is occurring or not. By calculating an average concentration of a contaminant in fish tissue over a 10-year period, the agency may find a risk of waterbody impairment that would not be identified if data from more recent years were used when there is evidence of a temporal trend.

Contaminant levels in fish tissue often co-vary with fish length, weight, or age. Does Ohio EPA evaluate fish tissue data using a size standardization? Levels of mercury in fish tissue are often standardized to a selected length so that comparisons of tissue levels over time are not confounded by size differences in fish collected throughout the assessment period.

Under Section “Step 2: Determine fish tissue contaminant concentrations,” the agency indicates that one year of fish tissue data is adequate to categorize a waterbody as impaired or not impaired. The Water Task Force believes that such a decision should be based on the magnitude of variation in the fish tissue contaminant. While the Water Task Force agrees that a geometric mean concentration for each species at a particular location is appropriate, the variability of the pollutant concentrations should not be ignored. A trophic level-weighted average fish tissue concentration of mercury that has a cumulative coefficient of variation (CV) of 90% is different than a trophic level-weighted fish tissue concentration that has a cumulative CV of 25%. The difference between these CV is the certainty (confidence) in what is the true fish community average mercury concentration. The Water Task Force believes that Ohio EPA should consider the variability in levels of fish tissue contaminants before deciding that impairment decisions can be made with one year’s data.

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<sup>2</sup> Adoption of this analytical method was proposed on September 23, 2010. 75 Fed. Reg. 58024-58076.

### **Section I2. Inland Lakes and Reservoirs**

Ohio EPA should revise the discussion of the Water Quality Standards for the Protection of Aquatic Life in Lakes to reflect the revisions that Ohio EPA made in the proposed rules that were public noticed on December 28, 2012 and later withdrawn on February 1, 2012. For example, Ohio EPA has indicated that it is no longer including lake habitat use criteria for Chlorophyll a, Phosphorus, and Secchi disk transparency in the rules and Ohio EPA has revised the criteria for Dissolved Oxygen. Further, because Ohio EPA is not moving forward with the nutrient criteria for lake habitat, the results for nutrients included in Table 1-2 regarding the lake habitat use assessment for lakes sampled in 2008-2010 using the draft assessment methodology should not be included.

### **Section I3. Mercury Reduction at Ohio EPA**

As it did in 2008 and 2010, the Water Task Force continues to recommend that Ohio EPA pursue development of a voluntary mercury reduction program for the 2014 Integrated Report so that Ohio EPA may designate waters impaired by atmospheric deposition under subcategory 5m. As recognized by U.S. EPA, developing Total Maximum Daily Loads (“TMDLs”) for mercury-impaired waters can be technically challenging because it requires a multi-media approach that is not feasible under the Clean Water Act alone. See, Memorandum from Craig Hooks, Director of the Office of Wetlands, Oceans, and Watersheds, U.S. EPA, to Regions I-X Water Division Directors regarding Listing Waters Impaired by Atmospheric Mercury Under Clean Water Act Section 303(d): Voluntary Subcategory 5m for States with Comprehensive Mercury Reduction Programs (March 8, 2007).

States are often presented with the insurmountable challenge of developing TMDLs although they lack the necessary resources. By implementing this voluntary program, the State would have additional time to develop TMDLs for mercury-impaired waters and the flexibility to develop programs that are tailored to address state-specific factors (e.g., economic feasibility, population exposure, economic impact, etc.). This proactive approach could lead to early reductions in mercury and reduce the number of mercury-impaired waters in Ohio. Furthermore, implementing the 5m impairment subcategory would help protect Ohio EPA from unfounded legal challenges.

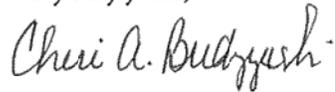
The Water Task Force believes that the Ohio projects outlined in I3.2, if accomplished, would satisfy U.S. EPA’s recommended elements of a voluntary mercury reduction program. Furthermore, in December 2011, U.S. EPA signed final rules that address mercury emissions from coal and oil-fired power plants. The standards in these rules will have an added benefit in significantly reducing mercury in waterbodies caused by atmospheric deposition. In implementing these projects in Ohio, however, the Water Task Force encourages Ohio EPA to make it as comprehensive as possible by examining a wide range of potential sources, processes, and products that contribute to mercury-impaired waters. This type of approach would allow Ohio EPA to implement the program in a way that ensures the greatest reduction in mercury and may result in the eventual delisting of mercury-impaired waters. Thus, the Water Task Force recommends that Ohio EPA make it a priority to implement this program by 2014 in order to ensure that early reductions are achieved.

Correction

In the first full paragraph under G3.2 Watershed Units on page G-8, the word gauge is misspelled as “gage.” The sentence should read “Included in Table G-1 and depicted in Figure G-3 is the corresponding average score based on the old HUC11 WAUs, which were tracked from 2002 through 2010 and were used to *gauge* the progress ...” (emphasis added).

The Water Task Force appreciates the opportunity to comment on these important issues and looks forward to working with Ohio EPA and other interested stakeholders to continue to improve the listing and de-listing process.

Very truly yours,



Cheri A. Budzynski

CAB\bd

cc: Michael Snyder, Esq.  
Michael Born, Esq.  
Louis E. Tosi, Esq.  
William Patberg, Esq.  
The Water Task Force Members



February 6, 2012

VIA ELECTRONIC MAIL [dsw.webmail@epa.state.oh.us](mailto:dsw.webmail@epa.state.oh.us)

Ohio EPA -- Division of Surface Water  
P.O. Box 1049  
Columbus, Ohio 43216-1049  
Attn: 303(d) Comments

Re: Public comments on Ohio's draft 2012 Integrated Water Quality Monitoring and Assessment Report

Dear Ohio EPA:

With 95 percent of America's fresh surface water, the Great Lakes are a national environmental and economic treasure. They provide drinking water, jobs, and recreation to tens of millions of people. An important component of ensuring the health of the Great Lakes into the future is the reduction in bacterial and algal contamination of Great Lakes beaches. With this in mind, the Alliance for the Great Lakes urges Ohio to go further to protect Great Lakes beaches with the 2012 Impaired Waters List.

With these comments, the Alliance for the Great Lakes recommends that the Ohio Environmental Protection Agency:

- Amend the methodology to evaluate Lake Erie beaches and nearshore waters to ensure that they meet the narrative standard for algae.
- List beaches impaired by algae contamination. Placing these water bodies on the list will ensure Total Maximum Daily Loads (TMDLs) are developed to correct the impairments.
- Accelerate the proposed schedule of TMDL implementation to speed the rate at which Lake Erie beaches return to their healthy status.

Each of these points is described in greater detail in the attached comment letter. Thank you for the opportunity to submit these comments. Should you have any questions about our comments, please do not hesitate to contact me at 312-939-0838 x230 or [lwelch@greatlakes.org](mailto:lwelch@greatlakes.org).

Sincerely,

Lyman C. Welch  
Water Quality Program Director

Olga Lyandres  
Dale Bryson Water Quality Intern

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# ALLIANCE FOR THE GREAT LAKES

ENSURING A LIVING RESOURCE FOR ALL GENERATIONS

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Eliminating Water Pollution from Lake Erie

Comments to the  
Ohio Environmental Protection Agency  
on  
Ohio's Proposed 2012 Integrated Water Quality Monitoring and Assessment Report

February 6, 2012

Alliance for the Great Lakes  
17 N. State St, Suite 1390  
Chicago, IL 60602  
(312) 939-0838

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These comments are submitted by the Alliance for the Great Lakes (Alliance), a nonprofit organization that has advocated on behalf of the Great Lakes and the people who enjoy them for decades. The Alliance’s mission is to conserve and restore the world’s largest freshwater resource using policy, education, and local efforts, ensuring a healthy Great Lakes and clean water for generations of people and wildlife.

## **BACKGROUND**

The Clean Water Act requires states to assess their waters for compliance with the state’s water quality standards. Under Section 303(d) of the Act, each state must make publicly available a list of waters that do not meet the standards. This “303(d) list” identifies the portion of the water body that is impaired, the pollutant(s) causing the impairment, and a schedule for the development of Total Maximum Daily Loads (TMDLs) to restore the impaired waters to health. As such, the 303(d) list is an important part of ensuring that states comply with their water quality standards and work towards the Clean Water Act’s goal of fishable and swimmable waters. To improve water quality and human health, it is essential that the list accurately reflect the impairment status of the state’s waters.

An important part of working towards water that is swimmable is to address excessive algae as well as bacterial contamination in recreational waters, namely, Ohio’s Lake Erie beaches. The Alliance urges the Ohio Environmental Protection Agency (Ohio EPA) to go further to recognize both nuisance and harmful algal blooms as impairments of recreational waters in the Great Lakes region.

## **ISSUES OF CONCERN IN OHIO’S PROPOSED 2012 IMPAIRED WATERS LIST**

### **I. Ohio EPA must modify assessment methodology for recreational use to include impairment of beaches due to algae**

Lake Erie has recently experienced a large increase in algae; including both harmful algal blooms (HABs) caused by cyanobacteria as well as excessive nuisance algae. Algal blooms in Lake Erie are observable from space (Figure 1) and cover most of the Western and parts of Central Basins of Lake Erie. They are unsightly, odorous, and detrimental to recreation. Algae may also interfere with drinking water treatment. Furthermore, HABs produce toxins harmful to people and wildlife. Unfortunately, Ohio EPA has not modified its methodology to evaluate impairment at Great Lakes beaches due to algae. Recreational use is clearly impaired when stinky slime covers the beach or nearshore waters, especially if this slime harbors toxins. The Alliance urges Ohio EPA to apply methods to assess recreational impairments due to excessive algae.

Algal blooms result from excessive nutrients in the water. Ohio’s narrative criterion in water quality standards rule 3745-1-04 prohibits nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae. Since Ohio has not yet adopted numeric water quality standards for phosphorus and nutrients, Ohio EPA must apply methodology that utilizes its narrative standard to assess impairment of beaches due to excessive algae.



**Figure 1. Algae blooms across Western and Central Basins of Lake Erie, Oct. 2011**

The current methodology for recreational use does not include any evaluation of trophic levels of Lake Erie Assessment Units. This is alarming considering that the majority of US Lake Erie shoreline, impacted most severely by excessive nutrients and algae, falls under Ohio jurisdiction. Other Great Lakes states, including Minnesota, Wisconsin, and Michigan, have at least developed methods to evaluate the trophic state of the lakes' open water, and New York utilizes nutrient and algae criteria to evaluate use support of nearshore waters and beaches.

The draft 2012 report does not include any changes in the methodology or Lake Erie listings for phosphorus and algae impairments. Section I (Consideration for future lists) part 4 discusses what Ohio EPA has done to address HABs in the state waters, but the effort has been focused on monitoring and advisories. Addressing the root cause of the problem, i.e. nutrient pollution is discussed in section I4.5 only very briefly, concluding with the following statement:

“In the meantime, as documented throughout this report, ongoing monitoring identifies where nutrients are causing water quality impairments and TMDLs are being developed to quantify needed load reductions.”

This statement is misleading at best because the tables summarizing use impairments do not include the information about the cause of impairment and therefore, it is not clear which TMDL will address excessive nutrients. Furthermore, nutrients are discussed only in the context of aquatic life impairments in Section G2.3 of the draft report, not recreational use. Section G2.3 actually states that most of the data in the nearshore regions was collected in the mid-1990's and is no longer relevant to make a proper assessment due to significant changes.

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Section G2.3 also states that “... Ohio EPA was awarded a Great Lakes Restoration Initiative (GLRI) grant in 2010 to develop a comprehensive Lake Erie nearshore monitoring program. This 2011 – 2013 project includes a strategy to design and implement a monitoring program for the Ohio Lake Erie nearshore zone (including bays, harbors and lacustuaries) that can be maintained on an annual basis.” There is no mention of it in Section F of the report and it is not clear whether this Lake Erie nearshore monitoring program will result in amendments to the recreation use assessment methodology of the Lake Erie nearshore areas and beaches. The Alliance urges Ohio EPA to make the program truly comprehensive such that recreational use of Lake Erie beaches can also be evaluated with respect to excessive nutrients and algae.

## II. Ohio EPA must list Lake Erie beaches as impaired for algae

The algae and nutrient impairment of Ohio’s Lake Erie beaches is shown by additional evidence in published EPA reports. Over the last decade, total phosphorus concentrations have been on the rise (2008 Lake Erie Lakewide Management Plan or, LaMP, p 20.) and coinciding with increasing total phosphorus concentrations has been a trend of increasing growth of algae. Excess algal growth in the following areas has them considered as impaired ecologically (LaMP p 56, Section 4.4):

- **Impaired:** Maumee Bay, lake effect zones of Maumee/Ottawa Rivers, *western basin*; nearshore and river mouth areas of Canadian *eastern basin*
- **Potentially impaired:** lake effect zones of certain Ohio tributaries, *western and central basins*; Rondeau Bay and nearby nearshore and river mouth areas, Canadian *central basin*

Working with the Alliance’s award winning Adopt-a-Beach™ program, Alliance volunteers adopt beaches and shoreline areas in their local community to conduct litter removal, monitoring and water quality testing. Adopters work with the Alliance to locate a beach to adopt and log the information they gather into our online database. Alliance for the Great Lakes volunteers have recorded algae levels in the water and on the beach during their Lake Erie beach data collection visits. In particular, Alliance volunteers recorded high levels of algae in the water and on the beach at the Edgewater Park beach on 8/9/2010 and 7/11/2011. Medium levels of algae were recorded at Euclid Beach on 8/4/2010 and 7/6/2011 and Put-in-Bay Village Bathing Beach on 8/22/2010.

The Alliance urges Ohio EPA to list all Lake Erie assessment units as impaired for algae. Placing these water bodies on the Category 5 list would ensure that TMDLs are developed to correct the impairments. Beaches in the Western and Central basins of Lake Erie are listed as impaired due to *E.coli* exceedances, however, excessive algae is a problem at many of these beaches as well.

## III. Ohio EPA must accelerate the schedule for TMDL implementation at Lake Erie beaches

Many of Ohio beaches experienced a high number of beach action days in 2010, as required when levels of *E. coli* exceed a daily maximum of 235 CFU/100 mL. According to the Ohio EPA’s procedure for determining status for attainment of recreational use, both the number beach action days and the seasonal geometric mean of *E. coli* are considered. If the number of beach actions days exceeds 10 percent of total beach days, the beach is considered impaired for recreational use (for results, see page F-8 of the 2012 draft report). The Alliance supports Ohio EPA’s methodology for listing beaches as impaired for *E. coli* which considers both the seasonal geomeans as well as the number of beach action days in a season.

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Alliance volunteers who monitor Lake Erie beaches throughout the season, and have done so for both 2010 and 2011 seasons, recorded high *E.coli* levels at Euclid Beach, Edgewater Park beach, Villa Angela Beach, Arcola Creek Park, Fairport Harbor Metropark, and Huntington Beach, which are currently monitored and are included in the draft 303(d) list. We support continued listing of these beaches based on our volunteer data.

*E.coli* levels that exceeded standards have been detected at the Bradstreet Landing – Rocky River Park on 8/15/2010, 9/13/2010, 11/23/2010, 4/17/2011, and 9/23/2011 and Red Bird Beach (a private beach in Lake Co) on 6/4/2011, where Ohio EPA does not conduct bacteriological monitoring. *E.coli* levels were also exceeded at Kelleys Island State Park on 5/15/2010, even though the draft list states zero advisories have been posted there during 2010. The complete monitoring data can be found here: <http://www.greatlakesadopt.org/Home/HistoricalData>. The Alliance urges Ohio EPA to perform additional bacteria monitoring and evaluate the Kelleys Island State Park Beach to determine if this beach and the assessment unit Lake Erie Islands meet the water quality standards for full support of recreational use.

The Alliance is disappointed that Ohio EPA pushed the TMDL dates back further to 2016 rather than expediting the TMDLs for Lake Erie beaches. The 2012 draft 303(d) list simply extended the projected TMDL dates for Lake Erie Shorelines by another year from the 2010 list. Based on the persistent high counts of beach action days and elevated *E. coli* levels at these beaches, these areas need action now, not four years in the future. Therefore, we ask Ohio to complete TMDLs for all Lake Erie Assessment Units in 2012.

Thank you for the opportunity to submit these comments. Should you have any questions, please do not hesitate to contact me at 312-939-0838 x 230 or [lwelch@greatlakes.org](mailto:lwelch@greatlakes.org).

Sincerely,



Lyman C. Welch  
Water Quality Program Director



Olga Lyandres  
Dale Bryson Water Quality Intern



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February 6, 2012

Ohio EPA  
Division of Surface Water  
P.O. Box 1049  
Columbus, Ohio 43216-1049

Re: Comments on Ohio 2012 Integrated Water Quality Monitoring and Assessment Report, Draft Report for Public Review

Dear Ohio EPA,

On behalf of the National Wildlife Federation (NWF), please accept these comments on the Ohio Environmental Protection Agency (Ohio EPA) draft 2012 Integrated Water Quality Monitoring and Assessment Report (“draft report”). NWF has long been involved in promoting necessary actions (including total maximum daily load (TMDL) plans) to address water quality problems, and recently highlighted ongoing challenges in the Great Lakes, including to Lake Erie, due to stresses including nutrient loadings and aquatic invasives species.<sup>11</sup> We appreciate the comprehensiveness of the Ohio EPA draft report, but have four concerns, regarding listing and remedies for Lake Erie, TMDLs for the open waters of Lake Erie, efforts to address harmful algal blooms, and long-term monitoring.

Concerning the listing status and remedies for Lake Erie assessment units, the draft report appears to be inconsistent. For example, Figure J-5 in the draft report indicates Lake Erie nearshore waters are in the “impaired, other remedy” category, for human health and aquatic life (for all three assessment units), and recreation (for two assessment units). In contrast, discussion in Section G3.3 notes that all three Lake Erie assessment units remain Category 5 (thus needing TMDLs), and Section L3 indicates that all three assessment units are projected to have TMDLs developed by 2016. Presumably, Figure J-5 should be modified to reflect the current situation for impairments in nearshore Lake Erie.

Regarding the open waters of Lake Erie, we note that Ohio EPA in October 2011 sent a letter to the U.S. EPA requesting that the latter initiate a TMDL for open waters of the western basin of Lake Erie (draft report, Section J2). We recognize that it is appropriate for U.S. EPA to coordinate actions for TMDLs for multi-state water bodies. However, we believe Ohio, Indiana and Michigan still bear primary responsibility under the Clean Water Act for development of TMDLs for the western basin of Lake Erie.

<sup>11</sup> Mida Hinderer, J., Murray, M.W., and Becker, T. Feast and famine in the Great Lakes: How nutrients and invasive species interact to overwhelm the coasts and starve offshore waters, National Wildlife Federation, 2011. Available from <http://www.nwf.org/News-and-Magazines/Media-Center/Reports/Archive/2011/Feast-and-Famine-in-the-Great-Lakes.aspx>.

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As such, we recommend that Ohio EPA compile monitoring data available for the open waters, expand monitoring as necessary to ensure adequate data are available for listing decisions, list such waters where impaired (including for parameters such as nutrients and harmful algae), and coordinate (through U.S. EPA) with the other two states in developing needed TMDLs to address the impairments.

Regarding harmful algal blooms (HABs), while we appreciate the efforts undertaken thus far, including development of the Ohio Harmful Algal Bloom Response Strategy, monitoring, and posting efforts, we would like to emphasize the importance of addressing the problem at the source (i.e., draft report, Section I4.5). We support development of efforts such as the Nutrient Reduction Strategy submitted to U.S. EPA, and assume that strategy draws on numerous other completed efforts (such as the Ohio Lake Erie Phosphorus Task Force Final Report). We also believe the Nutrient Reduction Strategy should consider recommendations from other efforts, such as the soon-to-be released recommendations from the Agricultural Nutrients and Water Quality Working Group, organized by the Ohio Department of Agriculture. Furthermore, we believe all state strategies and resulting programs addressing nutrients and impacts (such as HABs) should have adequate opportunity for public participation and input.

Regarding monitoring, Section G3.3 of the draft report notes that due to recognition of a substantial portion of existing data being historical, there have been recent changes in aquatic life use status of the three Lake Erie assessment units (though the assessment units remain listed as Category 5, with impairments “due primarily to tributary loadings of nutrients and sediment...”) (draft report, page G-9). The draft report also describes other data collection efforts underway, including both the National Aquatic Resource Survey of coastal waters and the Great Lakes Restoration Initiative-funded multi-agency and university monitoring effort. While these efforts are laudable, and resulting data should be used in the various applications identified in the draft report, it is important that Ohio EPA build on these efforts and have a strategy to ensure regular and long-term monitoring of priority areas and for priority parameters, including nutrients in Lake Erie tributaries and nearshore areas, and beyond the period of the two aforementioned projects.

Please feel free to contact me with any questions on these comments.

Sincerely,



Michael Murray, Ph.D.

Staff Scientist

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[murray@nwf.org](mailto:murray@nwf.org)



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lakeeriewaterkeeper.org 419-691-3788 Fax 419-691-2288 sandylakeerie@aol.com  
Lake Erie Waterkeeper Mission: "To preserve, protect, and improve the waters and fish of Lake Erie, the warmest, shallowest, most biologically productive area in all of the Great Lakes through collaboration, education & advocacy."  
Member: Waterkeeper Alliance

Sent email dsw.webmail@epa.gov

February 6, 2012

Ohio EPa Division of Surface Water  
PO Box 1049  
Columbus, Ohio 43216-1049  
Attn 303d comments

Ohio says water quality improved slightly since the last two year report. This does not agree with what we see and experience with the greatest source of Ohio's drinking water, Lake Erie. The theory through the years is if you take care of the tributaries the main stem water quality will be good. This has not worked.

Ohio has poured millions of dollars into evaluating creeks that are not a drinking water source. These creeks measure the quality of fish and aquatic life. Meanwhile Ohio E.P.A. does minimal to no testing in Lake Erie and there are few to no reports on trends on nutrient loads and aquatic life in Lake Erie. The same is true of the Maumee River which is the Great Lakes largest and most biologically productive watershed. Other watersheds left out of analysis that are key indicators for Lake Erie's health are Maumee and Sandusky Bays which are forgotten in the analysis.

Also absent is a recognition of a growing algae problem in Ohio's inland lakes of which many have had beach closings due to algae

While Lake Erie public water intakes are incurring growing costs from algae growth, sport fish populations are threatened, and Lake Erie's economy is waning, it is insulting to those of us that drink Lake Erie water to say that Ohio's waters are improving.

When the methodology Ohio uses to measure the quality of Ohio's waters totally misses the mark on stating that Ohio's waters have a major nutrient problem the system is broke and needs fixing. To comment on the specifics of the 303d list, would be akin to contributing to a broke and failing system that is then used to evaluate water quality through the various measurements. A system that is broke should not rely on a system that fails to identify growing nutrient problems as the case in Ohio when Ohio suggests water quality is improving while the reality is, it is degrading.

Rather these comments are asking that Ohio's water quality assessment methodology be totally changed so that when something like nutrient inputs grow over a fifteen year period, as documented by Heidelberg College, the 303d list methodology will show the changing trends and decline in water quality and aquatic life.

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Please consider the following:

1. Ohio should measure water and aquatic quality standards at the outfalls of each stream, river, bay, and lake to determine what the acceptable load at the outfall is for various inputs like phosphorous, ammonia, nitrogen, chlorophyll, dissolved oxygen should be. Then work from the main water bodies back to the tributaries. In this way the targets are established from the impacted water rather than acting as though each stream is independent of connecting waters. By establishing targets at the outfalls meaningful reductions, where needed, will establish needed goals for water improvement.
2. Ohio should measure water quality improvement by weighing water use with the highest order given to drinking water sources and consumable fish.
3. While the Ohio River is not in Ohio's jurisdiction over 2/3 of the State of Ohio drains to the Ohio River with the rest to Lake Erie. There should be measurements at the outfall of tributaries to the Ohio River with known acceptable loads to the Ohio River from Ohio's Ohio River tributaries.
4. While there seems to be testing of fish tissues for Ohio water quality analysis, there seems to be no trend analysis on the populations of each type of fish in the stream and if there are changes in the type of fish that the stream can support. Estimating fish quantity species would provide a check and balance in the system. If the type of fish a stream is supporting accepts a lower quality of water than the stream has historically had, then this means the stream, river, bay, lake is impaired. This factor should be part of the water quality assessment. For instance Lake Erie, according to Ohio DNR is getting more low quality fish because of decreased water quality than the more desirable fish like walleye and yellow perch.
5. A problem in the Western Lake Erie watershed and all tributaries is that the transport of water has increased because of field tiles, storm and development. Yet the models seem to suggest that conditions are the same today as they were before field tiles, expanded storm drainage and development along with changes in the types of crops planted and the practice of manure application. There needs to be testing that determines the impacts of these changes on water quality.
6. There seems to be no assessment on water quality from Ohio's allowed practice of applying manure and fertilizer to frozen ground.
7. Weather pattern/climate changes should be factored into how, when and the frequency of sampling collection. Results will be different if the water and sediment is sampled and analyzed before and/or after a wind/rain event. Results will also differ by at the outfall, upstream or downstream from a storm, creek, point source, river, bay outfall.
8. The Lake Erie model for point sources is lake wide. There needs to be a separate model and different requirements for point sources in the very shallow Western basin. The discharge allowance should not be the same for discharging limits in the 5' waters of Maumee Bay to be the same as discharge limits in Lake Erie at Ashtabula where the water is over 100' deep. This makes no sense.

Ohio should take a lead in water quality as the Ohio economy has a huge stake in needing good water quality, especially a healthy Lake Erie that supports tourism, fishing and good drinking water. Much is at stake if Ohio and USEPA allow the same old water quality assessments which will continue to support a failing Lake Erie.

Sincerely,

Sandy Bihn  
Executive Director,  
Lake Erie Waterkeeper



Ohio Environmental Council

[ UNLEASHING THE POWER OF GREEN ]

1207 Grandview Avenue, Suite 201  
Columbus, Ohio 43212

(614) 487-7506  
[www.theOEC.org](http://www.theOEC.org)

Ohio EPA, Division of Surface Water  
P.O. Box 1049  
Columbus, OH 43216  
Attn: 303(d) Comments

Date: February 7, 2012

Submitted via: [dsw.webmail@epa.state.oh.us](mailto:dsw.webmail@epa.state.oh.us)

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COMMENTS ON DRAFT INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT  
REPORT

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The Ohio Environmental Council (“OEC”) represents over 100 member environmental and conservation organizations as well as thousands of individual members throughout the state of Ohio. Our mission is to secure healthy land, air, and water for all who call Ohio home. On behalf of our members, and in support of our mission, we submit the following comments to the Ohio Environmental Protection Agency (“Ohio EPA”) regarding its Draft Integrated Water Quality Monitoring and Assessment Report (“Draft Integrated Report”).

### Introduction

The OEC thanks Ohio EPA for this opportunity to comment on the Draft Integrated Report. At the outset, we would like to acknowledge Ohio EPA’s overall progress in improving the health of Ohio’s waterways over the last few decades, particularly with regard to large streams. We also appreciate Ohio EPA’s continued steady effort towards completing TMDLs for Ohio’s waterways. As environmental advocates, of course we would like to see more monitoring and more progress. And we do have some suggestions as to how to improve the Integrated Report, and a couple of proposed courses of action that Ohio EPA might consider pursuing.

However, this is an appropriate time to acknowledge that most of the protections afforded to our environment and environmental health are predicated on the continued conscientious and diligent work of Ohio EPA’s staff, who often do not receive the level of funding that is necessary to do all that needs to be done. We appreciate all of your diligent technical work and your conscientious efforts to balance the many competing interests that come into play in the regulatory process.

### Comments

#### **I. We support many of the ideas proposed in Section I: Considerations for Future Lists**

In the spirit of continuing improvement, we are pleased to see the proposals for future lists in Section I of the Draft Integrated Report. Adding these sections to the integrated report would make it even more useful as an overview of the status of Ohio's water quality.

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**A. Harmful Algal Blooms should be discussed in the Recreational Use section, in addition to their own section**

Harmful Algal Blooms (“HABs”) have significantly impacted Lake Erie as well as many inland lakes and streams, resulting in harm to human and animal health and increasing the costs of treatment for drinking water supplies.<sup>12</sup> We therefore support OEPA’s efforts to monitor and combat HABS in Ohio, and its intention to include a further discussion on HABs in future integrated reports.

We also feel that HABs should be discussed in Section F, evaluating the beneficial use of recreation. Harmful algal blooms have caused numerous beach closures and advisories over the past several years, including the designation of Grand Lake St. Marys as a distressed watershed. The distressed watershed designation was made in part because Ohio DNR found that the lake's waters represented a threat to human health, and that the water was not fit for recreation.<sup>13</sup> While *E. Coli* is one good indicator of attainment for the recreational uses, it is also clear that HABs are an independent impairment on the recreational use of Ohio's waters. Thus, a discussion of recreational uses that mentions only *E. Coli* is incomplete. Where credible data is available, it would help present a more complete picture of the status of recreational beneficial use in Ohio to discuss HABs.

We understand that HABs have not made a significant impact on drinking water that is delivered to customers in Ohio. With that in mind, it is acceptable to limit the discussion of HABs impact on drinking water to subsection I4, dealing specifically with HABS. Perhaps it would also be worthwhile to mention HABS in the Section H, evaluating drinking water supplies, as a potential threat that is currently being managed successfully. It would present a more complete picture of the status of the beneficial use and highlight Ohio EPA and other actors' efforts in controlling the problem.

**B. We support the suggested more thorough discussion of Ohio’s wetland resources**

We encourage Ohio EPA to present a more thorough discussion of wetlands in future Integrated Reports. We are particularly enthusiastic about OEPA’s plans to develop numeric biocriteria for wetlands. We also support plans to more rigorously evaluate and monitor the state of Ohio’s wetlands, including developing an inventory of historic wetland areas and an inventory of wetlands quality, together with an effort to evaluate the state of wetland buffer regions. These project would provide valuable information that would guide our efforts to maintain our wetland resource and specifically to evaluate and improve the effectiveness of mitigation projects, which are generally more successful when they take place in hydric soils over old wetlands.<sup>14</sup>

When Ohio EPA maps the historic and current wetland areas, it would be useful to also provide a breakdown of historic and current wetland use attainment in each twelve digit HUC. It would be best to combine this breakdown with evaluations of wetlands’ biological health, if possible. This would allow the agency to keep track of how effectively wetland functions are being maintained in each watershed, which is necessary to effectively evaluate the achievement of the goal of no net loss of wetlands in the state of Ohio.

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<sup>12</sup> George Elmaraghy, *Nutrient Reduction Strategy Framework for Ohio Waters*, Ohio EPA (Nov. 2011), 5. available online at: [http://www.epa.ohio.gov/portals/35/documents/nutrient\\_reduction\\_strategy\\_framework.pdf](http://www.epa.ohio.gov/portals/35/documents/nutrient_reduction_strategy_framework.pdf)

<sup>13</sup> See Ohio DNR, *Distressed Watershed Designation Analysis Grand Lake St. Marys Watershed* (Jan. 2011), 8, available at [http://ohiodnr.com/portals/12/water/watershedprograms/GLSM/Distressed\\_Watershed\\_Designation\\_Analysis\\_Grand\\_Lake\\_St\\_Marys.pdf](http://ohiodnr.com/portals/12/water/watershedprograms/GLSM/Distressed_Watershed_Designation_Analysis_Grand_Lake_St_Marys.pdf)

<sup>14</sup> Micacchion, Mick, Brian D. Gara, and John J. Mack. 2010. *Assessment of wetland mitigation projects in Ohio. Volume 1: An Ecological Assessment of Ohio Individual Wetland Mitigation Projects*. Ohio EPA Technical Report WET/2010-1A. Ohio Environmental Protection Agency, Wetland Ecology Group, Division of Surface Water, Groveport, Ohio, 13. available at: [http://www.epa.ohio.gov/portals/35/wetlands/M928\\_Final\\_Report\\_Vol\\_1.pdf](http://www.epa.ohio.gov/portals/35/wetlands/M928_Final_Report_Vol_1.pdf).

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**C. We support the idea of future Integrated Reports containing a separate section on Inland Lakes.**

We support Ohio EPA's continuing and expanding efforts to monitor and report on the health of our inland waters, have received more attention since the Grand Lakes Saint Marys was declared a distressed watershed. Since lakes are the final resting places for many upstream pollutants, they can be seen as representing a sort of aggregation of the water quality conditions that affect the watershed. An assessment of the health of Ohio's waters is most complete when it thoroughly discusses the health of lakes. Thus, such a discussion would be an improvement for future Integrated Reports.

**D. Mercury contamination is an important issue that also merits further discussion**

We are pleased to see a discussion of mercury included as a Consideration for Future Lists. Mercury is a bioaccumulative toxin of concern, meaning that it is not "cleaned up" by natural processes once it is released into the environment pollution. Instead, it builds up in the ecosystem and affects the beneficial use of human health by, for example, causing fish to become unsafe to eat.<sup>15</sup> Artificially removing mercury from water or the environment is also extremely expensive. Thus the agency is on the right track when it says that creating a 303(d) list just for mercury "would be preferable as a way to focus on this important pollutant".<sup>16</sup>

Mercury merits some separate discussion because it also affects the compliance status of WWTP in Ohio. Mercury often enters the environment as an air pollutant, but after it settles out of the air it typically makes its way into the water. Thus it exists in the water that flows in to WWTPs at elevated background concentrations. It is also discharged from businesses within the WWTP's service area. These factors may combine to make WWTP's effluent of mercury surpass its permitted limits, and yet the price of treatment to a healthy level can be steep. Because mercury is such a persistent and harmful pollutant that is discharged into the water primarily by sources that are not regulated as to water quality, it is somewhat unique pollutant from a regulatory perspective and therefore deserves its own separate discussion.

Because mercury pollution is such an important area of concern, we encourage EPA to go forward with the idea of implementing a 303(d) list for mercury. We also encourage Ohio EPA's other initiatives to try to solve the mercury problem, including identification of air sources of mercury and its affect on water bodies, adoption of statewide mercury reduction goals and targets, multi-media mercury monitoring, and public documentation of the State's mercury reduction program in conjunction with the State's Integrated Report.

While incorporating some of this information into future integrated reports would be beneficial, a free standing report that can focus in on mercury and evaluate the efforts to reduce mercury pollution could be even more helpful.

**II. Stream flow and impacts from withdrawals should be studied, monitored, and/or reported on more closely**

Ohio EPA lists hydromodification among the top causes of impairment and as a main cause of impairment for aquatic life.<sup>17</sup> Reduced stream and river flows result in lower water levels, which can be harmful to aquatic life. Flow reduction also results in an increased concentration of effluents. Ohio EPA is

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<sup>15</sup> See Draft Report, Section E

<sup>16</sup> *Id.* at I-9

<sup>17</sup> *Id.* at A-7(table) and A-9

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right to mention hydromodification as a major cause of aquatic life impairments, and to consider hydromodification when it develops TMDLs or other potential solutions to water quality problems.

However, we suggest that hydromodification will become even more important in the near future, as the expansion of deep shale drilling causes increasing unregulated withdrawals<sup>18</sup> at the same time that the implementation of the Great Lakes Compact requires more fine grained stream flow management. Given these foreseeable future events that will increase the importance of hydromodification as an impairment on water quality, we suggest that Ohio EPA should place greater emphasis on stream and river flow in its present and future analysis of water quality, so that baselines can be measured and progress can be recorded.

In these circumstances, a comprehensive statewide assessment of stream flow and a commitment to detailed modeling of the potential effects of flow modification would be of great help to assessing the impact of water flow impairments to the various beneficial uses, and to the informed and effective implementation of the Compact

Therefore, we suggest Ohio EPA work to undertake a comprehensive statewide assessment of these impairments and address hydromodification in both the 'free from' and numeric water quality standards. Hydromodification standards would both address this impairment directly and also help meet existing water quality standards and TMDLs that are being developed. Such standards would provide a consistent level of environmental protection and improve the quality of regulatory decisions. They would also support efforts to implement the Compact by protecting our rivers and streams while allowing for other reasonable uses.

While the Integrated Report might not be the most logical place for much of this analysis, we encourage Ohio EPA to working to better understand and address hydromodification in the coming years.

### **III. Ohio EPA might profit from collaborating with other parties engaged in modeling of Lake Erie**

Establishing water quality criteria and standards for Lake Erie is a complicated task, both from a technical standpoint and from a political standpoint. However, there is a large amount of modeling already being done for the Western Lake Erie Basin, and coordination between technical experts might reduce the technical burden on the agency and allow for sharing of knowledge to improve the technical results.

With Ohio EPA continuing to work on TMDLs in the Lake Erie basin, and the possibility of a Western Lake Erie TMDL from US EPA, it seems logical that there be a coordinated effort for modeling, sharing results, and especially for common conclusions and implementation. This would allow agency to save the resources that would be required to come up with independent models. And since so many of the models are weak on implementation, there is a real role for the agency to move the ball forward on a lot of these models.

We know of several models currently in existence. Government agencies have done a good amount of work, including USGS's SPARROW, the Army Corps of Engineers' work through LimnoTech, and Ohio EPA's own Lake Erie work, as well as any work US EPA might initiate in coming up with a TMDL for the Western Basin. The academic community has also made substantial contributions,

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<sup>18</sup> As EPA knows, each fracture can require around 5 million gallons of water, and currently there are no time, place, or manner restrictions on the withdrawals. Thus they are relatively more likely to occur during low-flow or other inopportune times. Further, wells can be refractured several times, requiring even more withdrawals.

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including work done by Confesor out of Heidelberg University, by Ludsin et al. at OSU, and modeling done at Purdue University. The Nature Conservancy's Michigan office has also done modeling work for Lake Erie.

We understand that these models are done for different reasons and address different points, and some might not be compatible. However, as some are addressing the nutrient loss issue, all might benefit from getting together and determining how to avoid unhelpful competition, and how to collaborate on furthering the points that still need to be addressed. Jeff Reutter of OSU/Stone Lab has done a good job with the Lake Erie Millennium Network in organizing research on the Lake's health. Maybe there is better opportunity to organize the modeling of the terrestrial part of the basin.

We suggest that Ohio EPA could save resources and potentially provide the spark for synergistic effects of knowledge sharing by bringing various modeling experts to the same table. If everyone could agree on goals (e.g. agreeing on acceptable loads to Lake Erie and stream health conditions) and increase the focus on implementation, we think there could be potential for much to be gained from coordinated effort. Anthony Sasson at The Nature Conservancy has specifically requested that we inform Ohio EPA that he is interested in helping to coordinate this collaborative effort in any way that he can.

### **CONCLUSION**

Thank you for the time and effort that went into the Draft Integrated Report, and for taking the time to consider our comments. We hope that our suggestions will be helpful to Ohio EPA as the agency plans future Integrated Reports and plans other analyses. We appreciate your hard work, and look forward to continuing to work with Ohio EPA to protect our environment.

Respectfully Submitted,

Grant Maki, J.D.  
Ohio Environmental Council  
1207 Grandview Ave. Suite 201  
Columbus, OH 43212  
614-487-7506  
Grant@theOEC.org

February 3, 2012

Ohio EPA  
Division of Surface Water  
P.O. Box 1049  
Columbus, Ohio 43216-1049  
Attn: 303(d) Comments

OHIO EPA - BSW  
2012 FEB -7 AM 10:09

To Whom It May Concern:

The Northeast Ohio Regional Sewer District (NEORS D) appreciates the opportunity to provide comments regarding the Ohio 2012 Integrated Water Quality Monitoring and Assessment Report. We are pleased to see the Ohio EPA's inclusion of data collected by the NEORS D as part of the Credible Data Program in this report. The use of meaningful data collected by organizations such as NEORS D helps to provide a more complete picture of water resources within the state.

After reviewing the report, we offer the following two observations. In Table D-3 on page D-8, NEORS D fish tissue data used in the report is listed as being from 2007. This data was instead collected in 2008 as part of the joint project between the Ohio EPA and the NEORS D. Finally, in the Cuyahoga River Large River Assessment Unit Summary, data collected at RM 16.20 by NEORS D is not included. Assessments at this site in 2009 and 2010 have shown this area to be in full attainment of the warmwater habitat criteria. It was uncertain if this data was unintentionally omitted from the report, but its inclusion may help to further demonstrate the recovery within that section of the river.

If you have any questions concerning these comments, or would like to discuss this matter further, please do not hesitate to contact Seth Hothem at 216-641-6000 or [hothems@neorsd.org](mailto:hothems@neorsd.org).

Thank you for your consideration of these issues.

Sincerely,



Robin Halperin  
Manager of Regulatory Compliance

RH/sdh

Note: Additional documentation was provided with this comment. However, the comment and documentation do not pertain to the Integrated Report, so the additional information is not included in this section of the report. The information is available to review by request.

Ohio EPA

1-31-12

DIVISION OF SURFACE WATER

ATTENTION 303d COMMENTS/LINDA OROS

P.O. Box 1049

COLUMBUS, OHIO 43216

IN RE: SURFACE WATER

MEUSER'S THERMAL ORGANIC REACTIONS  
PROCESS - AN ADVANCED CLEAN ENERGY ZERO  
EMISSIONS ZERO WASTE TECHNOLOGY TO  
CREATE ECONOMIC WEALTH AND A CLEANER  
HEALTHIER ENVIRONMENT.

WATER... WATER... EVERYWHERE AND NOT A  
DROP TO DRINK!! WITHOUT CLEAN FRESH  
WATER - YOU DIE ... THAT'S WHY I SIGNED ON  
TO START A CLEAN ENERGY COMPANY OVER  
23 YEARS AGO. MEUSER AND I THOUGHT IT  
WAS IMPORTANT BECAUSE WITHOUT CLEAN  
WATER - HUMANS CANNOT SUSTAIN LIFE ... PERIOD  
THERE IS NO SUBSTITUTE FOR WATER - NONE  
- NO DISAGREEMENT. "AS THE WATER GOES  
SO DO WE!"

ONLY 5% OF THE WORLD'S WATER IS  
FRESH "USABLE" WATER. CURRENTLY, THE FRESH  
WATER IS SUPPORTING 7 BILLION PEOPLE. BY  
UTILIZING THE TOME TECHNOLOGY WE CAN VASTLY  
IMPROVE OUR AIR, GROUND AND WATER FOR  
TODAY'S NEEDS AND FOR FUTURE GENERATIONS.

I HAVE APPLIED TO THE DEPARTMENT  
OF ENERGY ON AN UNSOLICITED PROPOSAL  
(GRANT) TO ADVANCE CLEAN ENERGY.

PLEASE SUPPORT OUR CLEAN ENERGY  
INITIATIVE. WE HAVE THE TECHNOLOGY  
-WE NEED TO PUT IT IN PRACTICE!!

WE CANNOT SOLVE ANYTHING WITHOUT  
FUNDING!!

PERSONALLY;

DAVID S. C. KOUBECK

THURS 23 AUTHOR / PROJECT 211



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

FEB 6 2012

REPLY TO THE ATTENTION OF:

WW-16J

George Elmaraghy, Director  
Ohio Environmental Protection Agency  
P.O. Box 1049  
Columbus, Ohio 43216-1049

Dear Mr. Elmaraghy:

The U.S. Environmental Protection Agency has conducted a review of Ohio's draft 2012 Integrated Report (IR), on public notice from December 28, 2011 through February 6, 2012. We are writing to provide EPA's comments on the IR.

### 1. Western Lake Erie Basin

As stated in Section J of the 2012 IR, Ohio EPA sent a letter to EPA in October 2011, requesting that EPA initiate a TMDL in the western basin of Lake Erie. Since that request was received, EPA has acquired sampling data collected by our Great Lakes National Program Office (GLNPO), which we are supplying to Ohio with this letter. EPA believes that these data demonstrate impaired conditions, and that the open waters of the western basin of Lake Erie should be added to Ohio's 2012 Section 303(d) list of impaired waters.

#### Background

Ohio's water quality standards include both narrative and numeric criteria. OAC 3745-1-31(A) states: "Lake Erie is designated an exceptional warmwater habitat, superior high quality water, public water supply, agricultural water supply, industrial water supply and bathing waters, and is required to meet the criteria set forth in, or derived in accordance with, rules 3745-1-01 to 3745-1-07 of the Administrative Code rule 3745-1-33 of the Administrative Code, and rules 3745-1-36 to 3745-1-39 of the Administrative Code. However, criteria set forth in this rule supersede the above rules where applicable. These criteria apply outside the mixing zone."

OAC 3745-1-04 includes narrative criteria applicable to all waters of the State: "The following general water quality criteria shall apply to all surface waters of the state including mixing zones. To every extent practical and possible as determined by the director, these waters shall be... (E) Free from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae;...."

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Past work in Lake Erie has included Remedial Action Plans (RAPs) for Areas of Concern (AOCs) along the shoreline, and development and implementation of the Lake Erie Lakewide Management Plan (LaMP). Section C of the draft 2012 Ohio IR indicates that Ohio EPA is sampling Lake Erie nearshore coastal waters through a nearshore comprehensive monitoring plan, funded by the Great Lakes Restoration Initiative (GLRI) in 2010, but has not completed sample analysis. Ohio EPA stated in the draft IR that it will summarize the sampling results in the 2014 listing cycle, after completion of the 2011 and 2012 sampling seasons.

Section C of the 2012 IR states that there has been a recent and dramatic increase in algal blooms in the western basin of the lake that is also encroaching into the central basin, including cyanobacteria blooms as far east as the Cleveland metropolitan area. According to Ohio EPA nutrients, particularly phosphorus, appear to be the cause of deteriorating conditions in Lake Erie. Section C states that the Lake Erie LaMP should be viewed as a framework to define the management intervention needed to bring Lake Erie back to chemical, physical and biological integrity. In 2010, the Lake Erie LaMP Management Committee, through the Lake Erie Nutrient Science Task Group,<sup>1</sup> published *Status of Nutrients in the Lake Erie Basin* which set out target values for total phosphorus for nearshore, open waters, and tributaries of Lake Erie. This report noted that the open waters of the lake, especially in the western basin, are experiencing increased loadings of dissolved phosphorus from some tributaries, resulting in great increases in algal development and cyanotoxins.

Section I of the 2012 IR gives details of the severity and toxicity of the algal blooms and algal toxins in several lakes in Ohio, including Lake Erie. The Harmful Algal Blooms (HAB) discussion includes cyanotoxins, cylindrospermopsin, saxitoxin, and anatoxin-a and the effects on human illness, and monitoring progress via recreational waters, public water systems, fish tissue, and satellite imagery. The IR notes that there have been cases of human illness and dog illness and death likely due to algal toxins. Section I – 4.1 of the 2012 IR submittal states that Ohio EPA, along with other agencies, is addressing the algal toxin issues by creating an initiative to address HABs in both the inland lakes and Lake Erie; Ohio EPA is also developing a state-wide algal toxin monitoring program. A steering committee was formed in 2010 to specifically design a HAB response strategy. Ohio EPA, the Ohio Department of Natural Resources, and the Ohio Department of Health released *Ohio Harmful Algal Bloom Response Strategy (2011)* to protect people from cyanobacteria toxins. The strategy addresses monitoring, rapid assessment methods, website information, and advisories. In 2011, advisories were issued for five inland lakes and three Lake Erie locations.

#### Data Submittal and Reference Targets

EPA is submitting data for the western basin of Lake Erie obtained from GLNPO (enclosed). GLNPO has collected data throughout the Lake Erie open waters for many years, including waters that are within both the Ohio and Ontario, Canada boundaries. The parameters include: alkalinity, chlorophyll-a, chlorides, specific conductance, nitrogen, silica, total dissolved phosphorus (TDP), total phosphorus (TP), turbidity, pH, Secchi depth, and various algal and phytoplankton species. Data are also subdivided into spring and summer collection intervals to

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<sup>1</sup> Lake Erie Nutrient Science Task Group includes members of US EPA, Lake Erie Millennium Network (LEMN), Environment Canada, and Ontario Ministry of the Environment.

better determine seasonal differences. GLNPO has also collected extensive algal and biomass sampling data, which may also be provided.

EPA recommends that Ohio evaluate the GLNPO data in light of targets that have been developed for phosphorus and chlorophyll-a in Lake Erie. These targets were established with binational consent, and were published in the LaMP. Lake Erie was further subdivided within the LaMP and has site-specific targets based on geography, habitat characteristics and basin depths, including the western, eastern, and central basins, and nearshore Lake Erie. The targets for the western basin are:

- Total Phosphorus - 15 µg/l
- Chlorophyll a – 3.6 µg/l

As indicated by the enclosed data, sites ER 58, ER 59, and ER 60 are collected within Ohio state boundaries in open waters of the western basin of Lake Erie (see Figure 1). Examples of some of the excursions above the targets from 2001 through 2010 are shown below. Based on Ohio documentation of harmful algal blooms and algae in its draft 2012 IR, and as confirmed by the exceedences of LaMP target TP and chlorophyll-a values, EPA believes that Ohio should list open waters of the western basin.

Spring water column average annual value exceedences in 10 years (2001 - 2010)

Station	Chlorophyll – a*	Highest value Chlorophyll-a µg/l (LaMP target 3.6 µg/l)	TP *	Highest value TP in µg/l (LaMP target 15 µg/l)
ER 58	5 of 10 yrs	6.28	10 of 10 yrs	88.4
ER 59	2 of 10 yrs	7.98	8 of 10 yrs	226.3
ER 60	1 of 10 yrs	21.9	8 of 10 yrs	141.2

Summer epilimnetic average annual value exceedences in 10 years (2001 – 2010)

Station	Chlorophyll – a*	Highest value Chlorophyll-a µg/l (LaMP target 3.6 µg/l)	TP *	Highest value TP in µg/l (LaMP target 15 µg/l)
ER 58	10 of 10 yrs	13.5	8 of 10 yrs	66.7
ER 59	9 of 10 yrs	16.6	6 of 10 yrs	92.4
ER 60	9 of 10 yrs	24.4	5 of 10 yrs	29.8

\*indicates number of years out of 10 that the average annual values are exceeded.

**Figure 1. GLNPO monitoring stations within Ohio state boundaries in Lake Erie western basin**



## Conclusion

EPA believes the data provided demonstrate exceedances of Ohio's water quality standards, including the prohibition that waters of the State "be free from nutrients" in concentrations "that create nuisance growths of aquatic weeds and algae" (OAC 3745-1-04), and that the open waters of the western basin of Lake Erie should be listed. While Ohio does not have numeric standards for phosphorus in Lake Erie, it can use the target values developed by the LaMP Management Committee to implement its narrative standard for Lake Erie. We believe that GLNPO data are compatible with Ohio's methodologies and Quality Assurance/Quality Controls for measuring contaminants in surface waters, and are credible data as defined in OAC Chapter 3745-4-02(B). Relevant supplemental materials regarding data collection and analyses are enclosed.

## **2. Additional Comments**

We have the following additional comments and questions regarding the IR:

- Section C, Total Maximum Daily Loads on page C-16, you may omit information from the 2001 lawsuit and consent decree.

- 
- Section I-1 Wetlands - includes the following statement (p. I-1): "A new rule package including wetland numeric biological criteria has been proposed that would establish benchmarks for attainment of a tiered, ecoregion-specific wetland aquatic life use system. These rules would allow the ecological integrity of a particular wetland to be evaluated using vascular plants and/or amphibians." This appears to be incorrect based on a review of Ohio's proposed rule changes included in the triennial rule package that we are currently reviewing. Ohio is proposing to apply chemical criteria to wetlands but there is no mention of biocriteria in their proposed rule.
  - Regarding the methodology that is proposed for incorporating wetlands into future Integrated Reports on pages I-1 and I-2, how would Step 4 (use of ORAM, AmphlBI and VIBI for previously-monitored wetlands) be used relative to the off-site (Level 1) assessment? Would the Level 2 and 3 results be used to verify the Level 1 results?
  - In light of Ohio's proposed application of the base aquatic life chemical criteria to all wetlands, does Ohio expect to monitor wetlands for attainment with these criteria?
  - Does Ohio anticipate eventually listing wetlands using the proposed assessment methodology, or is this intended for informational purposes only?

Once you have reviewed these comments, we would like to schedule a conference call to discuss any questions you may have or to provide further information. Please contact Jean Chruscicki at 312-353-1435 to schedule this discussion.

Sincerely,



Peter G. Swenson, Chief  
Watersheds and Wetlands Branch

Enclosures

cc: Trinka Mount, Ohio EPA

Spring Whole Water Column Station	Western Basin Annual Average Chl-a, ug/L shaded values above LaMP target 3.6 µg/l	Western Basin Annual Average TP, ug P/L shaded values above LaMP target 15 µg/l
ER58 (2001)	5.18	41.5
ER58 (2002)	6.28	39.4
ER58 (2003)	5.44	41.9
ER58 (2004)	1.68	16.6
ER58 (2005)	2.36	44.3
ER58 (2006)	4.28	67.2
ER58 (2007)	3.59	93
ER58 (2008)	2.46	79.5
ER58 (2009)	1.66	88.4
ER58 (2010)	4.5	17.6
ER59 (2001)	1.26	25.2
ER59 (2002)	2.63	31.3
ER59 (2003)	3.13	135.6
ER59 (2004)	1.08	12.9
ER59 (2005)	0.65	21.3
ER59 (2006)	1.13	84.6
ER59 (2007)	5.16	36.9
ER59 (2008)	3.52	15.6
ER59 (2009)	7.98	226.3
ER59 (2010)	2	12.5
ER60 (2001)	2.38	34.6
ER60 (2002)	1.36	18.6
ER60 (2003)	1.88	22.4
ER60 (2004)	0.5	16.3
ER60 (2005)	1.41	18.4
ER60 (2006)	1.55	15.1
ER60 (2007)	21.9	21.4
ER60 (2008)	2.26	14.2
ER60 (2009)	2.24	141.2
ER60 (2010)	0.62	8.01

Summer Epilimnetic Station	Western Basin Annual Average Chl-a, ug/L shaded values above LaMP target	Western Basin Annual Average TP, ug P/L shaded values above LaMP target
	3.6 µg/l	15 µg/l
ER58 (2001)	9.67	16.6
ER58 (2002)	11.1	66.7
ER58 (2003)	6.84	15.2
ER58 (2004)	7.43	25.9
ER58 (2005)	6.72	14.9
ER58 (2006)	9.92	12.4
ER58 (2007)	8.91	15.8
ER58 (2008)	4.78	15.6
ER58 (2009)	8.93	15.1
ER58 (2010)	13.5	22.8
ER59 (2001)	7.2	12.5
ER59 (2002)	10.8	92.4
ER59 (2003)	9.57	15.1
ER59 (2004)	6.36	39.6
ER59 (2005)	9.73	22.7
ER59 (2006)	7.29	12
ER59 (2007)	9.83	20.5
ER59 (2008)	2.23	13.8
ER59 (2009)	7.68	11.4
ER59 (2010)	16.6	18.7
ER60 (2001)	5.17	11.4
ER60 (2002)	5.84	22.8
ER60 (2003)	3.19	9.1
ER60 (2004)	3.87	9.74
ER60 (2005)	13.1	23.6
ER60 (2006)	24.4	19.8
ER60 (2007)	10.5	12.2
ER60 (2008)	3.65	7.64
ER60 (2009)	12.7	29.8
ER60 (2010)	13.6	17.7