

Ohio 2010 Integrated Report

Section D

Framework for Reporting and Evaluation

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

The 2010 Integrated Report (IR) continues Ohio's evolution to a fully-formed watershed basis for reporting on water quality conditions. For the past 18 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 methodology¹. 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 functions.

Reporting on Ohio's water resources continues to develop, including more data types and more refined methodologies. Reporting on four beneficial uses forms the basic framework for this report, 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 2010 methodology contains minor changes to accommodate the change to smaller assessment units. Also in this report, a methodology for assessing the aquatic life condition of lakes is previewed for possible inclusion in the 2012 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 analysis again changes significantly to a new indicator, a new water quality standard, a data grouping procedure similar to that used for aquatic life.
- 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 in the 2010 report has been changed to be consistent with the methodology described in U.S. EPA's 2009 guidance for implementing the methylmercury water quality criterion.
- Public Drinking Water. An assessment methodology for the public drinking water supplies was introduced in 2008 after being demonstrated in the 2006 report. In this report minor changes have been made to the methodology to accommodate the change to smaller assessment units.

The methodology changes are described in more detail in Sections E through H.

D1. Assessment Units

The 2010 IR continues the watershed orientation outlined in previous reports; however, the assessment units in the 2010 report have changed significantly, as described in Section A. 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:

¹ 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) – 1538 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 500 square miles.
 - Lake Erie Assessment Units – for 3 nearshore areas of the lake: western, central, and 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. TMDL reports are another source of more in-depth analyses, available at <http://www.epa.ohio.gov/dsw/tmdl/index.aspx>. Ohio EPA has also recently added interactive maps that display data it collects (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.

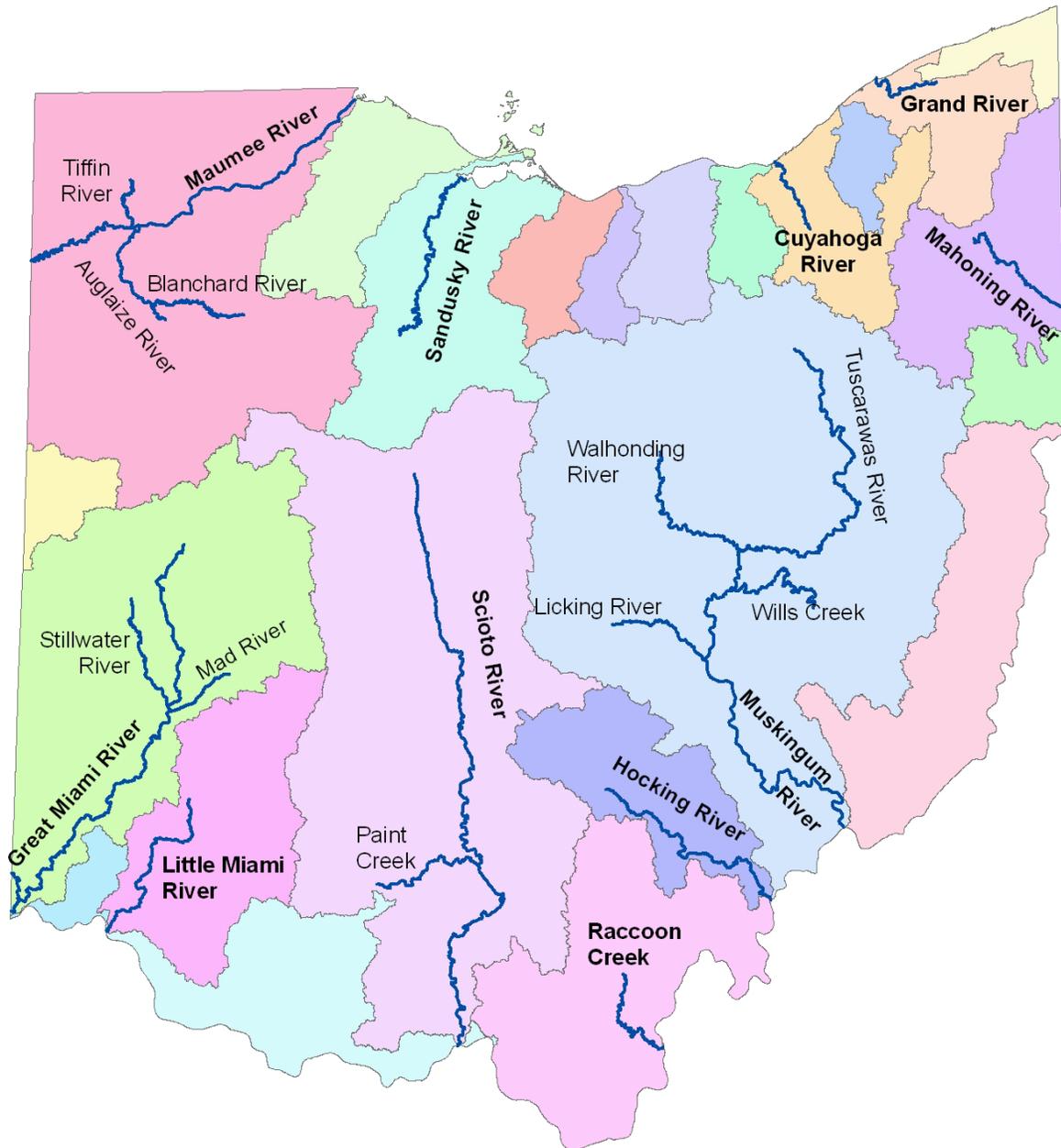


Figure D-1. Ohio's large rivers (rivers with drainages greater than 500 mi²) and their watersheds.
Note: Bold river names indicate the primary mainstem of that drainage basin.

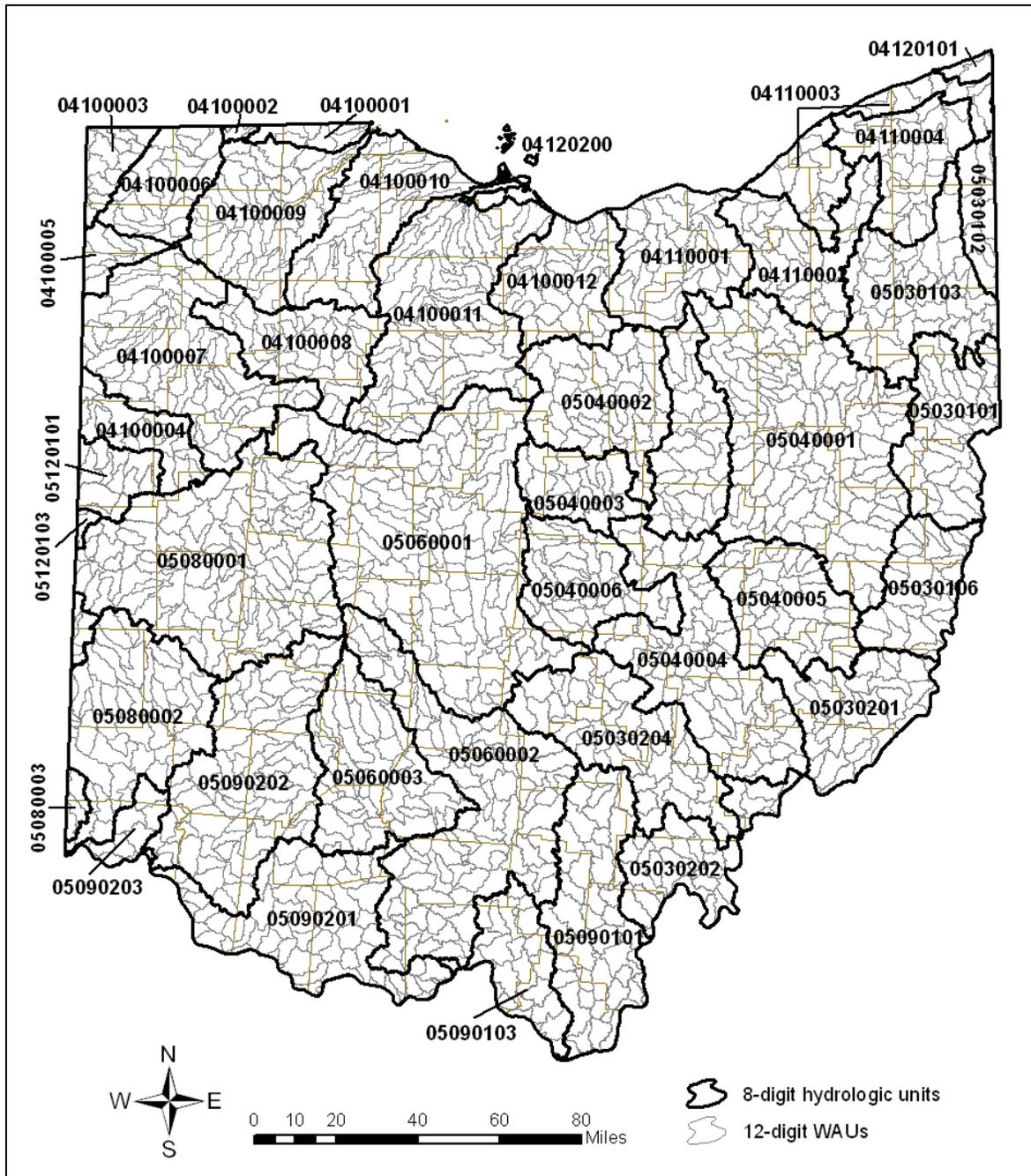


Figure D-2. Ohio's 12-digit watershed assessment units (gray lines) and 8-digit hydrologic units (heavy black lines).

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 WQS designated uses and outlines how the use was evaluated for the Ohio 2010 IR.

Table D-1. Ohio water quality standards in the 2010 Integrated Report.

Beneficial Use Category	Key Attributes (why a water would be designated in the category)	Evaluation status in 2010 Integrated Report
<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	65% of the Watershed Assessment Units and 79% of the large River Assessment Units 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	31% of the assessment units 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 used as emergency supplies	Sufficient data were available to assess 34% of the 132 assessment units 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

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 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.

Because of the new rules, Ohio EPA solicited data from all major NPDES dischargers, Level 3 QDCs, and parties who formerly submitted information. 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 water quality standards (WQS) uses evaluated in the 2010 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 2010 IR. Ohio EPA's 2010 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.

Bacteria data were analyzed in a different manner than in previous integrated reports for rivers and streams. Analysis is based on *E. coli* data rather than fecal coliform data. In addition, sites from within an assessment were individually evaluated and compared to the criteria applicable to the site *in lieu* of the pooling of data within an assessment unit previously used.

The evaluation of biological and water quality survey data was not changed from the approach used in the 2008 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 2010 Integrated Report.

WQS Uses & Criteria Evaluated (basic rationale ¹)	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 1983 to 2008	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 2004 to 2008 (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 ²	Watershed scale biological and water quality surveys & other more targeted monitoring 1999 to 2008	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 ³ . 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 2004-2008	SDWIS (PWS compliance database) Syngenta Crop Protection, Inc. (Atrazine Monitoring Program) ⁴	Data collected within past five years. Minimum of 10 samples with a few exceptions (noted in Section H).

¹ Additional explanation is provided in the text of Section D2.

² OAC 3745-1-07(A)(6) and Table 7-15.

³ OAC 3745-1-03(A)(5)

⁴ 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 2010 Integrated Report.

Entity	Dates Data Were Collected	Data Description	Basis of Qualification¹
<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 (macro-invertebrates only)	
Northeast Ohio Regional Sewer District	2001	Biology (macro-invertebrates only)	
	2005	Fish Tissue	
Midwest Biodiversity Inst./ Ctr for Applied Bio-assessment & Biocriteria	2001 - 2004	Biology	
		Physical habitat	
		Chemistry	
Heidelberg College	2004	Biology (macro-invertebrates 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>			
Ohio Department of Health (ODH)	2006 - 2008 (May - Oct only)	Bacteria	State Agency
Cuyahoga County Health Department	2006 - 2008 (May - Oct only)	Bacteria	Level 3 qualified data collectors (under ODH's study plan)
Northeast Ohio Regional Sewer District	2006 - 2008 (May - Oct only)	Bacteria	Level 3 qualified data collectors
	July 2006 - Oct 2008	Biology Physical habitat	
	2007	Fish tissue	
Ohio Department of Natural Resources	April 2006 - Nov 2008	Fish Tissue	State Agency
	Sept - Oct 2006	Biology (fish only) Physical habitat	

Entity	Dates Data Were Collected	Data Description	Basis of Qualification ¹
PWS compliance database (permittees)	March 2006 - Dec 2008	Chemistry	Data credible - submittal pursuant to permit
Syngenta Crop Protection, Inc. ²	March 2006 - Dec 2008	Chemistry	See footnote
The Ohio State University	May - Oct 2006	Biology (macro-invertebrates only)	Level 3 qualified data collector
EnviroScience, Inc.	July - September 2008	Biology	Level 3 qualified data collector

¹ 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. Prior to the adoption of the credible data regulations, data was accepted based on the best professional judgment of Ohio EPA.

² 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 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 prepared 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 *2008 Biennial Assessment of Ohio River Water Quality Conditions* (ORSANCO, 2008). ORSANCO plans to complete a biennial assessment in 2010, but the document is not expected to be available by the time Ohio's 2010 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 2010 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 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 2010 303(d) list, contained in the draft 2010 Integrated Report, will be available for public review beginning in December 2009 (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, 2010 Integrated Report Project (July 22, 2009)

A memorandum soliciting level 3 qualified data was mailed at the end of July 2009 to all major NPDES discharge permit holders, those who had formerly submitted data, and all level 3 qualified data collectors. The memorandum is displayed below.

Date July 22, 2009

Re Solicitation of Water Quality Data, 2010 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 2010 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.

At this time, the Ohio EPA Division of Surface Water (DSW) is soliciting readily available data for use in the 2010 Integrated Report. The report, due to U.S. EPA on April 1, 2010, fulfills the State's reporting obligations under Sections 305(b) and 303(d) of the Clean Water Act. In 2010, Ohio EPA expects to make significant changes to assessment methodologies as outlined at <http://www.epa.state.oh.us/dsw/tmdl/2010IntReport/index.html>.²

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
- 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.

² Ohio EPA has since reformatted web pages. The web page with this content is now <http://www.epa.ohio.gov/dsw/tmdl/2010IntReport/index.aspx>

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 September 1, 2009. In future Integrated Report cycles, Ohio EPA will only be able to accept data collected under an approved project study plan.

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.state.oh.us/dsw/tmdl/2010IntReport/DataRequest.html>.³

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.

2010 Integrated Water Quality Monitoring and Assessment Report - Call for Level 3 Credible Data

- [What kind of data does Ohio EPA want?](#)
 - [Microbiological Data](#)
 - [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?](#)

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 2010 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 soliciting data primarily from NPDES major

³ This web page is now <http://www.epa.state.oh.us/dsw/tmdl/2010IntReport/DataRequest.aspx>.

permit holders, Level 3 Qualified Data Collectors and others that may be in possession of Level 3 Credible Data that were collected in 2007 and 2008. 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 [draft rule 3745-1-07 of Ohio's water quality standards](#). 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 2010 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, 2007 and October 31, 2008 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 68K]. 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 ¹
<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	

Entity	Dates Data Were Collected	Data Description	Basis of Qualification ¹
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	2006 – 2008 (May - Oct only)	Bacteria	Data credible - submittal pursuant to permit
Ohio Department of Health (ODH)	2006 – 2008 (May - Oct only)	Bacteria	State Agency
Cuyahoga County Health Department	2006 – 2008 (May - Oct only)	Bacteria	Level 3 qualified data collectors (under ODH's study plan)
Northeast Ohio Regional Sewer District	2006 – 2008 (May - Oct only)	Bacteria	Level 3 qualified data collectors
	July 2006 - Oct 2008	Biology	
		Physical habitat	
	2007	Fish tissue	
Ohio Department of Natural Resources	April 2006 - Nov 2008	Fish Tissue	State Agency
	Sept - Oct 2006	Biology (fish only)	
		Physical habitat	
PWS compliance database (permittees)	March 2006 - Dec 2008	Chemistry	Data credible - submittal pursuant to permit
Syngenta Crop Protection, Inc. ²	March 2006 - Dec 2008	Chemistry	See footnote
The Ohio State University	2006 (May - Oct only)	Biology (macroinvertebrates only)	Level 3 qualified data collector

¹ 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.

² 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 2010 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 212K]. 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 2007-2008. 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
 - 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 2010 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 (Only data that are consistent with these guidelines can be considered Level 3 data):
 - [Manual of Ohio EPA Surveillance Methods and Quality Assurance Practices, 2009](#) [PDF 197K]
 - [Habitat and biology sampling manuals](#)
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 study plan was adhered to as written.

3. Minimum Data Submission: Ohio EPA is requesting biological, chemical and physical data collected from 2007-2008. 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)
 - 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 (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 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, 2004 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 or Dennis Mishne at (614) 836-8775 or 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, 2007 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 September 1, 2009 to Chris Skalski, 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 September 1, 2009 to Jeff DeShon, jeff.deshon@epa.state.oh.us, or Dennis Mishne, 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 [2010 Integrated Water Quality Monitoring and Assessment Report](#) page.

D5.2 Web Page Announcing 2010 Integrated Report Preparation

2010 Integrated Water Quality Monitoring and Assessment Report

Preparation of 2010 Integrated Report is Underway

Ohio EPA is preparing the 2010 Integrated Report, which fulfills the State's reporting obligations under [Section 305\(b\) \(33 U.S.C. 1315\)](#) and [Section 303\(d\) \(33 U.S.C. 1313\)](#) 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 2010 Integrated Reports in May 2009. The [most recent Ohio Integrated Report](#) was completed on March 31, 2008.

What changes from the 2008 report are expected?

- While the overall approach to the report will be the same as the past few reporting cycles, Ohio EPA anticipates making significant improvements to the report.
- We will continue to use the watershed-based listing approach, first used in 2002, but we plan to shift from a larger watershed assessment unit (11-digit hydrologic unit) to a smaller (12-digit hydrologic unit) watershed assessment unit size. Some of the large river units are also being split into smaller pieces. More information on this change is provided below. Altogether, these changes will provide for more precise reporting of water quality conditions in the report.
- To accommodate this change, [methodologies for each of the listed uses](#) – aquatic life, recreation, human health (via fish tissue), public drinking water supply – are being revised. Other methodology changes expected are:
 - The recreation use methodology is changing to a site-by-site analysis.
 - If [revised water quality standards for bacteria](#) are adopted in 2009, the change will be incorporated into the recreation use analysis.
- We expect to provide more information on inland lakes and lay out a path for including inland lakes on the 303(d) list in future reports.
- Having more assessment units will necessitate a change in how the report will look; we expect a more Web-based report.

If you would like to make suggestions about the draft methodologies for the 2010 report, [please click here](#).

When will the report be completed?

Major project milestones and dates for completion are:

Refine methodologies / compile data	June - October 2009
External level 3 credible data are due to Ohio EPA	September 1, 2009
Prepare list / internal review	October - December 2009
Public notice draft 303(d) list	January 2010
Respond to comments / prepare final list	February - March 2010
Submit to U.S. EPA Region V for approval	April 1, 2010

Please continue to check this Web site for updates.

Why are there changes in the assessment unit sizes?

Ohio EPA had hoped to change to smaller watershed size in the 2008 Integrated Report, but a major overhaul of watershed coding was underway. Reporting at a finer scale should allow a more refined picture of water quality in Ohio – just as a photograph with more “pixels” results in a clearer picture.

In 2008, federal government agencies completed a project to redraw all hydrologic unit boundaries for Ohio according to a new coding method. This project was part of a nationwide

initiative to develop a nationally consistent dataset of watershed coding numbers (the Watershed Boundary Dataset). The former coding method uses 11 digits and 14 digits, respectively, to describe larger and smaller watersheds. In the new method, 11-digit codes have been converted to 10-digit codes and 14-digit codes have been converted to 12-digit codes. In addition, to make the size of the smaller watersheds more consistent across the state, some of the small hydrologic units were combined or split. To do this, each hydrologic unit boundary was meticulously examined and redrawn, if necessary, to follow ridge lines more closely.

Near the borders of the state of Ohio, the old codes were not consistent with neighboring states. Therefore, those hydrologic units were renumbered in some cases to better line up with neighboring states' hydrologic unit codes. Many hydrologic units were also renamed to standardize naming across the state.

Separate from this effort, Ohio EPA decided to split some of the large river assessment units (the lengths of river that drain 500 square miles or more) into smaller segments at locations where major tributary rivers conjoined with the mainstems. The table below compares the old system of coding watersheds and large rivers in Ohio to the new system.

	Old system	New system
<i>Larger watersheds</i>		
Number of watersheds	331	331
Average size of watershed	130 square miles	124 square miles
<i>Smaller watersheds</i>		
Number of watersheds	1756	1538
Average size of watershed	25 square miles	27 square miles
<i>Large rivers</i>		
Number of large river segments	23	38
Average length of segment	54.6 miles	32.3 miles

For more information, contact:

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

* 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.

D5.3 Notice of Availability and Request for Comments FWPCA Section 303(d) TMDL Priority List for 2010

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 18, 2009

OHIO ENVIRONMENTAL PROTECTION AGENCY PUBLIC NOTICE

NOTICE OF AVAILABILITY and REQUEST FOR COMMENTS FWPCA Section 303(d) TMDL PRIORITY LIST FOR 2010

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 2010 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 *2010 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 2010 through 2012.

All interested persons wishing to submit comments for Ohio EPA's consideration may do so by email to DSW_TMDL@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 8, 2010. 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, 2010.

The report will be available on Ohio EPA Division of Surface Water Web site at <http://www.epa.ohio.gov/dsw/Home.aspx> not later than December 18, 2009. 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) 644-2140 or Beth Risley at (614) 728-2384.

D6. Public Comments and Responses to Comments on Draft Report

The draft 2010 Integrated Report was available for review from December 18 through February 8, 2010. Comments were received from the parties listed in the following table:

Date	Author	Organization	Identifier
1/13/2010	Laura Fay	Ohio Department of Natural Resources	ODNR
1/15/2010	Cheri Budzynski	Water Task Force of the Ohio Utilities Group	OUG1
1/16/2010	Bill Katakis	Citizen	BK
1/21/2010	Anonymous	N/A	ANON
2/5/2010	Cynthia Piper	Citizen	CP
2/5/2010	Peggy Gheta	Citizen	PG
2/6/2010	Betty Bunch	Citizen	BB
2/6/2010	Alex Jeffers	Citizen	AJ
2/8/2010	Lyman Welch	Alliance for the Great Lakes	AGL
2/8/2010	Stephen Love	Adopt-a-Beach Team: Euclid Beach	ABT
2/8/2010	Anthony Sasson	The Nature Conservancy	TNC
2/8/2010	Brandi Whetstone	Sierra Club Ohio Chapter	SC
2/9/2010	Laura Fay	Friends of the Lower Olentangy	FLOW
2/12/2010	Marina Owen	Citizen	MO
2/16/2010	Cheri Budzynski	Water Task Force of the Ohio Utilities Group	OUG2
3/3/2010	Kathryn Hanratty	Citizen	KH

Comments are identified by organization submitting the comment. Page numbers cited in comments are based on the draft report and may not be the same in the final version of the report. Copies of the comment letters and emails are provided in full at the end of this section. Comments are grouped by topic, as follows:

- D6.1 General Comments
- D6.2 Evaluation of Beneficial Use: Human Health (Fish Contaminants)
- D6.3 Evaluation of Beneficial Use: Recreation
- D6.4 Evaluation of Beneficial Use: Aquatic Life Use
- D6.5 Evaluation of Beneficial Use: Public Drinking Water Supply
- D6.6 Evaluation of Lake Erie
- D6.7 Report Format and Content
- D6.8 Miscellaneous Issues
- D6.9 Monitoring Schedule

D6.1 General Comments

Comment: The Water Task Force of the Ohio Utilities Group would like to request a one-week extension for the submission of comments on the 2008 Integrated Report. The Utilities appreciate the time and effort that the Division of Surface Water has put into the Integrated Report, which is an extensive and detailed document. As such, the Utilities feel that additional time is necessary to review the document and provide meaningful comments. [OUG1]

Response: The public notice allows that we will consider comments beyond the end of the public comment period as time permits. We have included all comments received by March 3, 2010.

Comment: When you dump sludge from Alliance on all the farm land around Walbourn Res., what do you think will happen to the water? You guys should check into this! Start reading what sludge consists of. [ANON]

Response: Ohio EPA conducted water quality surveys for Dale Walborn and Deer Creek Reservoirs in 2007 and 2008. Both reservoirs were found to be impaired by excessive nutrient

concentrations that result in undesirable algae growth. In addition, data were also collected to develop a total maximum daily load (TMDL) study for the area around the reservoirs and the upstream watershed. A TMDL report for the watershed is currently being developed that will incorporate an implementation plan to address water quality concerns in the lakes and their contributing watershed. The draft report will be open for public review and comment. The commenter may also want to contact the City of Alliance directly to express his/her concerns.

Comment: Our waters need algae and pollution help now from outdated sewage and septic systems and trash—runoffs—and other forms of pollution. Upgrade our water quality now, do not put it off...it is important for our health. [BB]

Comment: Ohio EPA regulators need to work harder to combat high levels of algae on Lake Erie shorelines. In addition to nuisance algae and invasive species, Lake Erie beaches are on the receiving end of pollution from numerous other sources, including stormwater runoff, outdated sewage and septic systems, trash and wildlife.

Twenty Ohio beaches were unsafe for swimming 14 days or more during the 2008 beach season. Despite these documented problems at Lake Erie beaches, Ohio does not intend to complete a plan for improving water quality at its beaches until 2015. Please accelerate that schedule, as well as place strict updated guidelines periodically.

Waterborne bacteria and viruses can cause vomiting, diarrhea, stomachache, nausea, headache and fever. Children are the most susceptible because of their size, developing immune systems and because they are more likely to swallow water when swimming. [CP] [ABT]

Response: Ohio EPA appreciates the concern expressed about Ohio's water quality. The agency monitors and reports on the water quality of Ohio's waters, identifying the causes and sources of water quality problems. Ohio EPA then issues permits to point source dischargers (sewage plants, industries) and works with them to ensure they adhere to the permits. Controlling other sources of pollution depends on other state and local agencies (e.g., county health departments) and governments and voluntary actions by citizens and land owners. Ohio EPA shares its findings and analyses with other parties and urges them to act, and the interest of concerned citizens is critical to making further progress in improving Ohio's waters.

Comment: Will all water resouces have an announced goal by OEPA of being fishable swimable? [BK]

Response: Up to now, Ohio EPA has used an aquatic life goal for large rivers to indicate progress in improving water quality. New goals for this use are described in the 2010 Integrated Report, and the agency is working to develop goals related to other uses and water body sizes/types for use in the 2012 and subsequent integrated reports.

Comment: Ohio's approach to evaluating streams and rivers has been from the upland waters to the lower reaches, with the theory that if these waters are improved, improvements will also be realized in Lake Erie and the Ohio River.

Ohio does not have 303(d) process reevaluation that takes into account current conditions and information, compared to traditional 303(d) findings and methodologies. In general, Ohio's

impaired waters list involves filling in spreadsheets and conducting statistical modeling. This is particularly true for Lake Erie and the Ohio River.

TMDLs have not been conducted on Lake Erie and none are scheduled for years. Ohio assumes that if the tributaries are addressed, then Lake Erie and Ohio River water quality will improve. Similarly, if the tributaries to the Maumee River are addressed, then the Maumee River water quality will improve. While this makes theoretical sense, the reality is that nutrient levels in the Maumee River, according to Heidelberg College and other water monitoring data since 1995, show nutrient increases. Yet, there is no mention or reference to this in the 2010 Integrated Impaired waters report.

Challenges result in the 303(d) process when USEPA assigns responsibility for evaluating and reporting impaired waters on a state-by-state basis, rather than on a HUC/watershed basis. Lake Erie is shared with four states and the Canadian province of Ontario, and likewise the Ohio River is shared with eight states. These joint jurisdictions complicate how we address issues facing these waters. [SC]

Response: A general misunderstanding of the Integrated Report and Ohio EPA's water program is evident in this comment. Starting from the first paragraph, the following points are offered to clarify the agency's approach on the topics raised:

- Ohio EPA has prioritized upland areas over the last 10 years to eliminate areas where no monitoring had occurred and to maximize the effectiveness of its TMDL program. TMDLs are underway or are completed for most of the watersheds that contribute to Lake Erie, and several major tributaries of the Maumee River also have or soon will have completed TMDLs. Ohio EPA has traditionally monitored and continues to monitor streams of all sizes on a rotating basis as resources allow.
- In its 303(d) process, Ohio includes all available data that meets the Level 3 requirements of Ohio's Credible Data Law. Ohio does not rely on statistical modeling of any kind to generate its 303(d) list.
- Ohio EPA is aware of the Heidelberg College data. At the present time, the Heidelberg data has not been demonstrated to meet Level 3 Credible Data Law requirements. Ohio EPA will use the data to the extent possible when it plans future work in the watershed.
- Ohio EPA reports on the waters that are within Ohio's boundaries. For shared waters such as the open waters of Lake Erie and the Ohio River, the agency relies on U.S. EPA and ORSANCO programs that have jurisdiction over these waters.

Comment: The Ohio River and the Western Basin of Lake Erie both share an average depth of 24 feet. Similarly, both of these water bodies are experiencing problems with increased nutrients and algal blooms. Western Lake Erie is a targeted area for USEPA to work on nutrients and algal blooms, with additional studies on the Lake Erie Central basin's growing dead zone (water with very low oxygen).

Western Lake Erie is once again, as it did in the 1960's and 1970's, experiencing massive algal blooms and declining fish populations. Certainly for Lake Erie, the nutrient problems are getting back to levels in the 1960's and 1970's. We urge Ohio EPA to adopt nutrient standards right away. [SC]

Response: Ohio EPA is working on nutrient criteria for inland lakes and flowing streams less than 500 square miles in drainage, based on protecting aquatic life. The agency expects to

seek interested party review on the criteria during 2010 with rulemaking projected to be completed in 2011.

Comment: Ohio's 303(d) program lists impaired water assessment in the four use categories and there is information for each watershed with supporting data. However, watershed group input on the assessment is not part of the process and could further bolster OEPA's work. Nor is there a 303(d) Impaired Water Committee or other committee that looks at the 303(d) listing which seeks public input on a regular basis. This severe lack of communication is detrimental to the goals of the 303(d) listing. Many of the issues identified in these comments should have been addressed in periodic forums about the prioritization and status of the 303(d) listing and TMDLs. [SC]

Comment: There needs to be improved communication, watershed group involvement, and public involvement in the 303(d) process. [SC]

Response: Information in individual watersheds is typically shared or made available to watershed groups through watershed reports, news releases, or public meeting presentations (which are sometimes hosted by the watershed groups). Watershed groups are also consulted or included in planning the watershed studies. Thus, watershed groups are already aware of data since these activities typically happen before data are used in the integrated report.

Ohio's 303(d) listing and TMDL processes were endorsed in 2000 by an external advisory group formed to advise on the TMDL program. Since that time, the agency has continued to use the processes, expanding where possible to include additional recommendations from the group within the resources available. The expansions have been accomplished by previewing agency intent and new listing methods in one cycle, accepting comment and revising as needed, then using the new methods in subsequent lists. This has been a very cost-effective way to move forward, allowing the agency to direct staff resources to critical functions such as data collection and analysis as much as possible.

Absent a major change in national law or regulation governing listing, Ohio EPA believes that the current open approach to listing is meeting Ohio's needs for an accurate list of impaired waters while balancing limited staff resources and competing program needs.

Comment: Ohio's current nutrient standards for impaired waters are based on a narrative reference document, with no basis in regulation or law, and have not been subject to public input. Furthermore, if the nutrient standards and Ohio's impaired water reports were working, then we would have early warnings of the growing nutrient levels in the waters. Ohio's evaluation of the waters in the 303(d) evaluation has failed to show the increasing nutrient problem in tributaries to Western Lake Erie and has failed to show declining fish populations. Ohio has not conducted much needed nutrient TMDLs in Lake Erie and in the Maumee River, and none are scheduled for many years. In fact, the Maumee River is not factored into the percentage of aquatic life use because the data is over ten years old. How can the greening Lake Erie waters and the discussion of phosphorous loads from the Maumee River not be factored by OEPA into impaired water TMDL priorities? [SC]

Response: Ohio currently does not have nutrient standards for the aquatic life use. The "narrative reference document" referenced in the comment is not used for listing impaired waters but has been used to set flexible targets in TMDLs so that loading reductions for

phosphorus and nitrate can be calculated. Use of the document is based on application of narrative criteria, and public input on the use of the values occurs on a project-by-project basis.

The other points raised in this comment are duplicated in other comments from this organization, and appropriate responses can be found elsewhere in this appendix.

Comment: The Sierra Club requested public meetings on the integrated report during the comment period in 2010. Ohio EPA held three public information sessions in early February 2010 just before the comments were due February 8, 2010. We appreciate OEPA staff participation in meetings, and their responsiveness and promptness in addressing questions about the integrated report. We are unaware of any public forums and discussions prior to the required draft 303(d) 2010 Integrated Report. Having said this, no matter how hard some tried to review the impaired waters 303(d) report, in general the report failed to provide an understandable format that members could review and comment on. [SC]

Response: Ohio EPA understands that the Integrated Report can be a lot to digest. It is based on a sizable amount of data and analysis, and that is built on top of the Clean Water Act, its implementing statutes and regulations, and state statutes and regulations. The Agency tries to explain the technical information in plain English and provide results in the form of summaries and maps to facilitate understanding by a non-technical audience.

Ohio EPA routinely offered public information sessions for the Integrated Report through 2006, but stopped due to lack of public participation. The public notice and news release for the 2010 Integrated Report were issued on December 18, 2009, allowing for 52 days of review. The request for public information sessions for the 2010 report was made on January 13, 2010, and arrangements for three public sessions were completed and publicized on January 15. The sessions were held in Lorain, Columbus and Hilliard on February 2 and 3. In addition, Ohio EPA met with members of the Sierra Club on January 26 to answer questions they had identified during their review and also answered numerous email inquiries from Sierra Club members during the course of the public review period.

Comment: The 305, 303(d) lists provide an ongoing assessment of impaired waters. Ohio has many data points and tracking information. The data shows that water quality in streams and some rivers is generally improving over time. The breakdown is by four 'uses' - human health, recreation, aquatic life and drinking water (recently added). The data and models are complex and mathematically determined. Some improvements from 2008 to 2010 appear to be made.

We support the new breakout into smaller eleven-digit HUC units. Breaking down the large rivers to show areas where impairments exist, rather than saying the whole river is impaired, helps to identify problem areas and helps to focus limited resources toward needed improvements. [SC]

Response: Thank you for the comment.

Comment: While we understand that Level 3 certified data collection must be used in analysis, we believe that current and relevant data could be referenced separately in the report. In addition, more financial resources are needed to train additional Level 3 volunteer data collectors and hire adequate staff to conduct TMDLs every five years. [SC]

Response: We are hesitant to include data in the report that can only be used for limited purposes. As it stands, the inclusion of both 303(d) listing analysis and reporting on trends has confused some readers when the only difference is when the data were collected (within last 10 years, or more than 10 years). Including data that is restricted due to concerns about its quality would add another layer of complexity that would contribute to reader confusion.

Comment: Ohio EPA informed us that significant improvements to large rivers can be attributed to “low-hanging fruit” such as municipal sewer improvements. The public and the waters clearly will benefit from OEPA strongly enforcing existing consent orders with municipalities on wastewater discharges, and by Ohio EPA entering into new consent agreements with other municipalities who are out of compliance. The second reason for improvement of Ohio’s waters that Ohio EPA mentioned was removal of dams. We urge Ohio EPA to advocate locally for dam removal, and of particular importance is the removal of the Fifth Avenue dam on the Olentangy River in Columbus. [SC]

Response: Enforcement remains a high priority for Ohio EPA. The focus on dam removal is a direct outgrowth of Ohio’s first TMDL project on the Cuyahoga River in the Kent and Munroe Falls area. We have expended significant staff resources to follow-through on dam removals in several areas of the state, including the removal of the Fifth Avenue dam on the Olentangy River in Columbus.

D6.2 Evaluation of Beneficial Use: Human Health (Fish Contaminants)

Comment: To state that "the human health standard is not appreciably different from 2008" admits that progress has not been made in this designation. [SC]

Response: On Page A-7 of the draft Integrated Report, the quoted passage appears as follows, with context:

The 2010 human health use (fish tissue) results are not appreciably different from the 2008 results. Fish tissue data have been assessed in nearly every major (8 digit) hydrologic unit in Ohio. Between one quarter and one third of the watershed assessment units assessed for human health use are in attainment of that use. PCB contamination, primarily a result of historic industrial sources and old landfill discharges, is the cause of most of the human health use impairments. Mercury is the second leading cause of human health use impairments after PCBs.

It is difficult to directly compare the 2008 results and the 2010 results because of changes in methodology between the two years. While the 2010 fish tissue results were deemed “not appreciably different” from the 2008 results, due to refinements in the scale of our assessment we are now better able to determine specific smaller (HUC12) watersheds that are impaired for the human health use. This methodological refinement allowed Ohio EPA to delist a number of watersheds previously considered impaired under the larger-scale HUC11 assessment used in 2008.

The two contaminants of concern responsible for the vast majority of the impairments for fish tissue are both considered legacy pollutants. PCBs, which are responsible for the majority of impairment determinations, have been banned from use in the United States since the late 1970s. They are very slow to degrade and are considered highly persistent in the environment. They are also highly bioaccumulative in fish tissue. Ohio EPA expects to see PCB

contamination in fish gradually taper off over time, since PCBs have been banned for decades and the current disposal of PCB-containing materials is restricted. Ohio EPA strictly regulates any PCB discharges to surface water, but owing to the slow degradation rate of PCBs and their propensity to bioaccumulate, recovery will be slow.

The primary local source of mercury in fish tissue is the combustion of fossil fuels, especially coal. Global mercury is also deposited in Ohio waters. Mercury in the air settles in surface water and accumulates in fish tissue. Ohio continues to strictly regulate mercury discharges to surface water as well as air emissions through its permitting processes. As regulations and technology advance to eliminate more mercury from the waste streams of power plants and wastewater treatment facilities, Ohio EPA expects to see gradual improvement in fish tissue mercury concentrations.

Comment: HUC 05060001_120 (Delaware Run to Mouth) shows impairments for **Fish Tissue** in the 2008 assessment but none of the four (4) 12 digit HUCs in the lower Olentangy Watershed show any impairments for Human Health from fish tissue in 2010. Why not? [FLOW]

Response: The difference is caused by a methodology change. In 2008, the methodology evaluated data river-wide, by species. At that time, carp exceeded the 54 µg/kg threshold for PCB impairment, with an average of 69 µg/kg river-wide. In 2010, the methodology used a weighted average of all fish by HUC12 (the new, smaller watershed assessment unit), resulting in fish tissue PCB levels of 43, 47, and 28 µg/kg in the three assessed HUC12s in the lower Olentangy, all of which were below the 54 µg/kg threshold for impairment. Therefore, the HUCs have been delisted due to methodological changes.

Comment: The 2010 report for HUC 05060001 11 03 (which is equivalent to 05060001 120 in 2008) lists the **Fish Tissue Assessment** at Reporting Category 1, but in 2008 list it as impaired (5) because of PCBs. What is the implication of this change in designation? Are the fish safe to eat? [FLOW]

Response: The comment raises two separate issues. First, the listing status changed because of the shift to smaller assessment units in the 2010 report. In 2010, watershed assessment unit 05060001 11 03 had no fish exceeding the 54 µg/kg threshold and only one fish sample (carp) with detectable levels of PCBs at 51.4 µg/kg. In 2008, the area was part of the larger watershed assessment unit 05060001 120 and fish collected in other areas of the larger watershed caused the listing. The smaller scale of HUC used in the 2010 report versus the 2008 report allows for greater refinement in the data assessment.

Second, for advice regarding fish consumption, follow Ohio's Sport Fish Consumption Advisory. Although the same data are used for both the integrated report and the consumption advisory, they are interpreted using different methodologies and for different purposes. In the case of the Olentangy, the only advice other than the statewide advice of one meal per week of most fish is that from State Route 95 to the mouth, smallmouth bass 12" and over should only be consumed once per month because of mercury contamination. The fish are safe to eat so long as the advice is followed.

Comment: While the Water Task Force does not generally object to the methodologies adopted to determine whether a watershed assessment unit is impaired for most human health criteria, 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 2010 Integrated Report, 48% of the state's stream miles are impaired 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 1668B for detecting PCBs, point sources may find that they are discharging PCBs at levels higher than the water quality standards. While Method 1668B has not been officially proposed and adopted by U.S. EPA pursuant to 40 CFR Part 136, Method 1668B 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 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. [OUG2]

Response: Ohio EPA recently reviewed all of its Human Health Water Quality Criteria, including the criteria for PCBs. The upcoming revisions to the criteria are currently in draft status and are expected to be finalized in October 2010. The fact sheet detailing how the updates will affect the PCB criteria can be seen at http://www.epa.state.oh.us/dsw/rules/draft_wqs_aug08.aspx. Please be aware the criteria are still draft and therefore subject to revision prior to becoming final. It is the Agency's belief that these updates reflect as much as possible U.S. EPA's latest guidance on criteria calculations and input variables. Should U.S. EPA or Ohio EPA change their PCB analytical methodology, Ohio EPA will address that issue through the permitting and TMDL processes, not through revisions to the standards.

D6.3 Evaluation of Beneficial Use: Recreation

Comment: Recreation Use Index Scores - Per the map in Section K of the new Integrated Assessment Report- Why isn't there data for the entire Lower Olentangy Watershed? The map shows that there is data for only 2 HUCs. [ODNR]

Response: Bacteria data from the lower Olentangy River survey were collected in 2003. The recreation use assessment was based on data collected during the recreation season from 2004-2008. Data older than five years is considered to be outdated for the purpose of recreation use attainment determinations made in the 2010 Integrated Report. Because the index score is a new addition for the 2010 report and the assessment for the 2010 report did not include the 2003 data, no index score was calculated for most of the Olentangy River watershed assessment units. Where *E. coli* data collected after 2003 existed, an index score was calculated.

Comment: There is no statement in the executive summary or in Section B about the increases of nutrients in the western Lake Erie tributaries resulting in massive increases in algae, and increases in algae in the Ohio River. The human health and recreation categories also do not consider human contact with toxic algae. Assessment and impacts of contact with algae should be part of the human health or recreation assessment. [SC]

Response: The only parameter for which criteria exist in Ohio's water quality standards (OAC 3745-1) that pertain to the protection of the recreation use is *E. coli*. Ohio EPA is currently in the process of developing nutrient criteria for the protection of aquatic life but at this time is not pursuing the development of recreation-based criteria for algal toxins. Ohio EPA, in cooperation with other state agencies, has initiated a program to monitor for algal toxins and issue advisories when appropriate. Also, a recent Ohio Sea Grant fact sheet concerning algal toxins is available at:

<http://www.epa.ohio.gov/LinkClick.aspx?fileticket=jCCZWwuS%2f2s%3d&tabid=3897>.

Sources of bacterial loadings to streams can also often be sources of nutrients and other contributing factors that can promote algal toxin production. So, even though a water body may not specifically be listed as impaired for recreation by algal toxins, a listing of recreation use impairment because of elevated bacteria levels can lead to the development of a TMDL or direct implementation measures that not only reduce bacteria loadings but also result in load reductions of other pollutants associated with bacteria sources such as storm water runoff from fields, unrestricted livestock stream access, and failing home septic systems.

Comment: Only one-third of the states' water bodies were measured for recreational use. There is a lack of clarity of how streams and rivers are chosen for TMDLs. Since many of Ohio's watersheds flow directly into Lake Erie, and Western Lake Erie has known problems with toxic algae and there is a lack of data on the Maumee, it stands to reason that the problems of insufficient data and TMDLs would be given a higher priority for the Maumee and all waters directly flowing into Lake Erie. [SC]

Response: In the 2010 Integrated Report, the indicator used to determine recreation use support changed from fecal coliform to *E. coli*. With that change, Ohio EPA has fewer data available at this time; however, more data will be available for future 303(d) lists. The way watersheds are prioritized for monitoring is described in Section J. TMDL projects follow watershed monitoring to use data efficiently. In recent years, five watersheds in the Maumee River watershed (Swan, Powell, Blanchard, upper Auglaize and the tributaries to the lower Maumee River) have been studied and TMDLs are completed or underway. The Ottawa River (in the Lima area) will be assessed in 2010 and three more are planned within the next five years.

Comment: HUC 05060001_120 (Delaware Run to Mouth) shows impairments for **Recreation Uses** in the 2008 assessment but only two (2) of the four (4) 12 digit HUCs in the lower Olentangy Watershed show data for Recreational Use in 2010. See HUCs 05060001 11 02 and 05060001 10 07. Do Recreation Use Scores of 94 and 100 indicate impairment? FLOW is concerned with the loss of detail in water quality information due to the paucity of *e. coli* data for this assessment in all of our HUCs. Can Ohio EPA continue to show the fecal coliform data until *e. coli* data is available for the purposes of watershed group assessments? [FLOW]

Response: Ohio EPA conducted an intensive survey of the Olentangy River watershed in 2003-2004 and published a technical report of the findings of the survey in 2005. A TMDL was subsequently completed for the entire Olentangy River watershed that was approved by U.S. EPA on September 19, 2007. The TMDL included a calculation for fecal coliform to address the recreation use impairment. The 2008 Integrated Report (IR) listed the entire Olentangy River watershed (four HUC11s) as impaired for the recreation use based on the fecal coliform criteria standards in place at the time and the fecal coliform data from 2002-2006 using a HUC-11 watershed scale.

The 2010 IR is based on a smaller watershed assessment scale (HUC 12). There are 17 HUC-12 watershed assessment units (WAUs) within the Olentangy River watershed. All 17 WAUs within the Olentangy River watershed were listed as “4Ax” in the 2010 IR to indicate that a TMDL has been completed and approved by U.S. EPA. Four of the seventeen 12-digit WAUs within the Olentangy River watershed had sufficient *E. coli* data available within the 2004-2008 time frame upon which the recreation use assessment for the 2010 IR is based to calculate a recreation use index score. The recreation use index score is new to the 2010 IR and provided some measure of the relative average water quality within the assessment unit based on a 0-100 scale. This provides an additional measure of summary information not available in previous reports. An index score of 100 indicates attainment of the recreation use. Any score less than 100 indicates an impairment of the recreation use. A score between 90 and 100 would indicate that, although impaired, the applicable *E. coli* criteria are close to being attained, while scores closer to zero indicate larger deviations from the applicable criteria.

The change in WAU size from 11-digit HUCs used in previous reports to the HUC-12 watershed scale used in the 2010 IR also provides greater resolution in the results because samples collected from within a smaller unit area are more likely to be representative of that watershed overall compared to samples that may have been collected from much more distant locations used to represent a larger HUC-11 watershed. As a result, Ohio EPA believes that the methods used in the 2010 IR provide a significant improvement in the level of detail and relevancy of the information than provided in previous reports.

An important part of relevancy is relying on relatively recent information. Over the last several integrated report cycles, Ohio EPA has limited evaluations of bacteria data to the previous five years of available data to ensure that assessments are not being made on outdated data. Furthermore, Ohio EPA utilizes *E. coli* in the 2010 report in lieu of the fecal coliform indicator used in previous reports. *E. coli* has been demonstrated to be a superior indicator for protecting the recreation use and in 2009, Ohio EPA completed a rulemaking that removed the fecal coliform criteria from Ohio's water quality standards in favor of the more scientifically justified *E. coli* indicator. Unfortunately, any transition such as this will require some time for new data to accumulate. Regardless of this fact, since bacteria data are considered to be historical after five years and since Ohio EPA completes between five and seven watershed surveys per year with current resources, it is inevitable that there will be many watersheds for which insufficient data will exist to determine a current assessment at any given time. For example, Ohio EPA's next scheduled survey of the Olentangy River watershed is not until 2018. This provides an opportunity for implementation activities recommended in the 2007 TMDL report to take place and enough time to lapse such that improvements to water quality may be measured when the next intensive survey occurs.

Comment: The 2010 report for HUC 05060001 11 03 (which is equivalent to 05060001 120 in 2008) lists the **recreational use impairment** as 4Ax but in 2008 it was 4A-TMDL. What is the implication of this change in designation? [FLOW]

Response: The referenced change is actually not a change in category from 2008 to 2010. The “x” following the 4A indicates that the new watershed assessment unit (HUC12) retained the category from the previous Integrated Report with no re-analysis. Ohio EPA plans to work with U.S. EPA before the 2012 Integrated Report to reconcile the TMDL completion status of HUC12 assessment units that were approved under the old HUC11 system.

Comment: What is the impact of changing the recreational use methodology from pooled to a site-by-site analysis? (SEE SECTION F). [FLOW]

Response: When data are pooled, results from a single “dirty” site can be diluted if there are substantial data from several “clean” sites. In a site-by-site analysis, the “dirty” site would still appear as an impairment, and since one site impaired in an assessment unit is enough to list the assessment unit, the overall effect is more conservative.

D6.4 Evaluation of Beneficial Use: Aquatic Life Use

Comment: Identify agricultural sources of impairment from sediment runoff, pesticides, and fertilizers, and quantify the resulting losses to beneficial uses. Here on the Maumee River watershed, Dr. David Baker of Heidelberg College has measured farm sediment runoff entering the Maumee for 28 years. He claims the amount of farm sediments running from farms into the Maumee, is exactly the amount the Corps of Engineers has to dredge out of the Maumee on an annualized basis. Ironically, the farmers rely on the very shipping channel that they fill with mud, to ship their grain to markets. They are completely unaccountable for the costs to our water treatment in Toledo (\$3000 per day), pesticide poisoning and deaths, which are currently unknowable in number, and the cost of dredging. They are also not accountable for the cost to the fishery and beneficial uses of the river and Lake Erie. These costs likely range into the many millions. Without a clear pronouncement of blame for the sediment pollution, there will likely never be accountability. Dr. Baker's nearly 3 decades of data should be utilized to this end. [BK]

Response: Ohio EPA is conducting intensive watershed surveys every year in watersheds around Ohio, including those in the Maumee River basin. As part of this effort, beneficial uses are assessed and, for those evaluated as impaired, total maximum daily loads (TMDLs) are calculated for the pollutant(s) determined to be impairing the use(s). Sediment and total suspended solids (TSS) are often cited as primary impairment cause for non-attainment of the designated aquatic life use. Resulting TMDLs for these pollutants are prepared and, if fully implemented in the affected watersheds via various surface water programs (e.g., NPDES, 319, 401/404, storm water) with local involvement and support, should result in near field improvements in aquatic life status as well as far field reductions in loadings of these pollutants to Maumee Bay and western Lake Erie.

Comment: New 2020 Aquatic Life Use Goals. The Conservancy agrees the Primary Goals for aquatic life are reasonable, while we expect that an increase from 61.3 % attainment (2010) for Watershed Assessment Units to 80% (2020) will require some significant changes in approaches such as more environmentally friendly drainage management and phosphorus reduction. [TNC]

Response: Ohio EPA agrees with this statement and emphasizes that progress is being made with regards to “green” drainage management for higher quality waterways (as recommended by ODNR Soil and Water’s Rural Drainage Manual developed with guidance from the Rural Drainage Advisory group) and continuing progress on water quality standards for nutrients in Ohio’s streams and small rivers, which are anticipated to be ready for interested party review during the summer of 2010. As TMDLs for pollutants impairing designated aquatic life uses in Ohio streams and rivers are implemented (and these include many for impairments caused by habitat degradation and excessive nutrient enrichment), Ohio EPA anticipates seeing improvement in our watershed attainment statistic in the future.

Comment: Mussels. While we made the same comments for the 2008 Integrated Report, we continue to encourage the Agency to include coverage of the status of mussels in Ohio in its next Integrated Report. Given emerging knowledge about issues such as ammonia's impacts on mussels, the Agency could correlate its extensive chemical and physical data with its own mussel data and that from other sources.

As you know, the health of many species of freshwater mussels is at risk throughout Ohio (e.g., see ODNR's listed species, available at <http://dnr.state.oh.us/tabid/5664/Default.aspx>, <http://ohiowatersheds.osu.edu/toolshed/mussels.html>) and North America. ODNR's listed mollusk species include 24 endangered mussel species, four threatened and nine species of concern. About 69% of freshwater mussel species are at risk in the U.S. (Stein, B.A., L.S. Kutner, and J.S. Adams (eds.) 2000. Precious heritage: The state of biodiversity in the United States. Oxford University Press. 399 pp.) Because of their sensitivity to pollution and habitat alteration, freshwater mussels have been recommended as indicators of water quality (Hoggarth, M.A. 2006. Freshwater mussels (Unionidae) as indicators of water resource integrity. Presented at the NABS Annual meeting, Anchorage, Alaska. <http://www.benthos.org/database/allabstracts.cfm/db/Anchorage2006abstracts/id/734>). The Ohio State University Museum of Biological Diversity maintains an extensive database for mussel species distributions in Ohio (<http://www.biosci.ohiostate.edu/~molluscs/OSUM2/OFMA.htm>). Mussels can be good indicators of quality because they are stationary, must filter the water passing around them and integrate conditions over a long period of time. Given the digitization of and extensive stream data in Ohio, Ohio EPA is well-equipped. The Agency has shown it is able to analyze large amounts of data related to other biota such as fish. The Agency could help significantly advance knowledge of Ohio's water quality using mussels. We encourage you to work with The Ohio State University and others to develop this information. A focus on mussel health and trends could lead to additional insight into water quality impacts and more comprehensively address attainment under the Clean Water Act.

In December, 2009, U.S. EPA published its "Draft 2009 Update Aquatic Life Ambient Water Quality Criteria For Ammonia – Freshwater," EPA-822-D-09-001. It states "based on the latest science, EPA reviewed and updated the freshwater ammonia aquatic life AWQC. The process of updating the freshwater ammonia criteria was initiated to include all new acute and chronic data published since the criteria document in 1984/1985, including any new toxicity data published for several freshwater mussel species in the family Unionidae." Because this might address a statewide issue related to mussels, we encourage the Agency to review this information and provide a statewide summary of conditions where this issue might be relevant. [TNC] [SC]

Response: As it has for the last 20 years or so, Ohio EPA continues to include mussel monitoring at all sites sampled in watersheds each summer. While the effort is not an intensive quantitative approach, Ohio EPA does try to identify all living species at a site as well as likely living species based on the presence of fresh dead shells. Mussels, especially those species identified by ODNR as endangered, threatened or a species of concern, factor highly in the assessment process that Ohio EPA uses to identify stream and rivers segments proposed for inclusion on the state's outstanding state waters and superior high quality waters anti-degradation lists. In addition, the presence and types of species of mussels found at sampling sites play an important role in the recommendation or confirmation of the appropriate aquatic life use for streams and rivers listed in Ohio's water quality standards (WQS). As Ohio EPA continues to build and improve the new data management application, the ability to assess and

correlate mussel data with chemical, other biological, and habitat data will be facilitated. It is anticipated that more of these types of assessments will occur in the future, especially in light of EPA's draft ammonia criterion and the need to re-assess Ohio's ammonia criteria after U.S. EPA publishes a final criteria recommendation.

Comment: Hydromodification/Stream flow/Drainage. In its 2008 Integrated Report, the Agency listed hydromodification among the top causes of impairment (pages A-7 and A-9). However, this is not addressed elsewhere in the report, in Chapter 3745-1 of the Ohio Administrative Code water quality criteria and values, or in this report's Section I: Considerations for Future Lists. As you know, many of the existing impairments, including organic and nutrient enrichment and contaminants, are exacerbated by hydromodification. Therefore, we suggest the Integrated Reports include work to: a) undertake a comprehensive statewide assessment of these impairments; b) 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 of Ohio's implementation of the Great Lakes Compact, which, among other things, must address the impacts of water withdrawals.

The Conservancy encourages review of stream flow that would: a) cover all rivers and streams (and ideally other waterbodies); b) is protective of aquatic life; c) is based on the natural variations of flows and water levels; and d) allows for reasonable other uses.

Additional issues that must be addressed include: a) a provision for sufficient water for other reasonable and necessary uses of water; b) specific numerical criteria, c) a determination of the maximum amount of water that can be safely withdrawn, diverted or used from ground or surface water while still being protective of aquatic life. We encourage the Agency to work with ODNR's Division of Soil and Water resources on this issue.

The Conservancy is willing to offer technical assistance to the Agency and other stakeholders on the stream flow issue. As you are probably aware, the Conservancy and others have emphasized stream flow review through the mechanism of ELOHA (Ecological Limitations of Hydrologic Alteration). Poff et al 2009. The ecological limits of hydrologic alteration (ELOHA): a new framework for developing regional environmental flow standards, *Freshwater Biology* 55:1, pp.147-170. Several additional flow references are provided at <http://conserveonline.org/workspaces/eflows>. This type of analysis is especially relevant below dams and reservoirs. [TNC] [SC]

Response: Ohio EPA participates in the Great lakes Compact and is aware of the ELOHA and other work. As the results of the pilot project currently underway become available, a broader application may be warranted. Future integrated reports may not be the best vehicle for this work given the extremely limited staffing resources available, but other possibilities can be investigated.

Comment: Ohio claims that somewhere between 80 – 93% of Ohio's aquatic use of waters are no longer impaired. We recognize that Ohio EPA has been assessing aquatic life longer than any other designated use and more data is available as a result. The 93% attainment statistic makes it appear that Ohio's fish are safe to eat on a regular basis, but this category is about fish quantities and overall evaluation of aquatic life. [SC]

Response: The determination of 80-93% aquatic life use attainment is clearly noted in the Integrated Report (IR) as the aquatic life use attainment statistic generated for the small subset of Ohio's waterways defined as large rivers (i.e., those defined segments that drain more than 500 square miles). Ohio EPA had no intention of trying to mislead or otherwise disguise the status of the vast majority of Ohio's streams and small rivers, which are discussed elsewhere in the report. The attainment statistics for these waterways, while not nearly as upbeat as those for the large rivers, do exhibit a small but steady positive trend since 2000.

There was also no intention to confuse readers about status of fish tissue contamination in Ohio streams and rivers in that a whole section of the IR is dedicated to that topic. Section E clearly states that there is a distinction between the listing of surface waters as impaired for fish tissue contamination as opposed to the issuance of fish consumption advisories, which are a joint endeavor between Ohio EPA, Ohio DNR, and ODA. This distinction is necessitated by the fact that the Ohio WQS do not specify a fish consumption beneficial use and the procedures used in the IR are to determine the status of the human health beneficial use based on fish tissue contaminant data results.

Comment: Furthermore, Western Lake Erie is experiencing a decline in fish populations. ODNR together with the Great Lakes Fishery Commission states that Lake Erie walleye populations have declined from over 80 million about five years ago to around 20 million now. Likewise, there are reductions in forage fish, bass, and other species. There is no assessment of the historical quantities of fish or the trends, and nothing on aquatic life use trends in Lake Erie and the Ohio River. The report does not reflect the declining walleye numbers in Lake Erie, along with declining numbers of forage and other sport fish. Aquatic assessment should be prioritized for streams, rivers, and lakes where there is sport fishing. [SC]

Response: Addressing the Ohio River first, the Ohio River Valley Water Sanitation Commission (ORSANCO) does a tremendous amount of biological monitoring of fish communities (both sport and forage) every sampling season; reports on aquatic life trends have been completed as well. Ohio EPA supports these efforts and directs interested readers to ORSANCO's Web site for more information and access to their annual Ohio River reports (www.orsanco.org).

As the biological integrity goal of the Clean Water Act does not strictly specify sport fish, nor do the definitions of aquatic life use designations in the Ohio Water Quality Standards, it has always been Ohio EPA's practice to consider the entire biological community in its assessments of river and stream sites. Be that as it may, it is highly unlikely that impairment would not be apparent using Ohio EPA protocols if there were significant population declines in those species normally inhabiting top predator food chain positions in the community (i.e., the sport fish). Status of sport fish populations in the Western Basin has always been the purview of Ohio DNR and other organizations. As more studies of the status of Western Basin fisheries are completed, including some assessment of the status of the aquatic life beneficial use (e.g., as defined in the Lake Erie Lakewide Management Plan and/or Remedial Action Plans), these may be included either by reference or summary in future integrated reports. There are a number of Great Lakes Restoration Initiative grant proposals being developed that would fund new programs dedicated to nearshore, harbor, and embayment monitoring in Lake Erie. If these are funded, more data suitable to assessment of Lake Erie's aquatic life use designation (not just sport fish) will be available for future integrated reports.

Comment: Northwest Ohio has more ditches than streams creating water quality issues. Some ditches are longer and have more water than the streams being evaluated. Ditches that meet stream size requirements should be included in water quality assessment for impairments due to their contributions from agricultural sources. [SC]

Response: During the watershed survey planning process, every effort is made to include all significant waterways for monitoring and assessment. Depending on monitoring and sampling site constraints, this should include all ditches having any significant size and small ones would not ordinarily be included at the expense of larger ones. An exception might be where monitoring issues are identified on small waterways during the planning process that necessitate a decision on what not to sample because of survey site allocation constraints.

Comment: Water impairment should factor in water quantity. The quantity of water in a stream should be listed as well as the headwaters and the outfall location. Water quantity needs to be known to protect the resource and to look at water quality assessment (how much is dilution a factor). [SC]

Response: Initial determination of the attainment status of the designated aquatic life use in Ohio streams and rivers is based solely on biological monitoring results and comparison with the biocriteria in the water quality standards. When impairment is documented and pollutant causes and sources determined, TMDLs are calculated for those pollutants. At this point, next management efforts involve the determination of waste loads and source allocation of the assimilative loading capacity. Water quantity, both background and as provided by point source outfalls, is a critical component of the water quality modeling and waste load allocation procedures. There is no doubt that hydromodification (i.e., disruptions or changes to a stream's natural hydrological cycle) can be an important cause of impairment to aquatic life. In situations where that is a suspected contributor to the aquatic life impairment, recommendations are made in technical documents to address the issue. Whether it be a recommendation to remove an impounding dam or modify agricultural land tiling and drainage practices, these impairment causes, while not traditional pollutants, are not ignored.

Comment: Aquatic use attainment rated as 93% attainment when two large watersheds were left out - the Maumee and the Great Miami - is a falsification and misrepresentation of the data. Overall water quality is not accurately being represented due to incomplete data from recreational, human health, and public water supply. The distortion of data occurs when aquatic life is the only measure used to represent the overall health of Ohio streams and rivers. [SC]

Response: As mentioned in a comment above, there was no intention of misleading readers with the 93% large river aquatic life use attainment statistic. It was noted that this statistic was determined for, and only for, aquatic life use in the defined large rivers and represented status of aquatic life use and no other use. The statistic was calculated in the same fashion as it had been for the previous four integrated reports going back to 2002. We also acknowledged that two significant waterways were not included in the statistic because of the age of data and then provided the attainment statistic for the large rivers if all aquatic life data for all large river segments were included (irrespective of age). By providing this additional statistic, the IR provided all necessary data to support an accurate determination for readers of the report.

Comment: The 2010 report for HUC 05060001 11 03 (which is equivalent to 05060001 120 in 2008) lists the **Aquatic Life Use Assessment** as 4Ax but in 2008 it was listed at 4A-TMDL. Does this mean that no follow-up will be done by Ohio EPA? [FLOW]

Response: The referenced change is actually not a change in category from 2008 to 2010. The “x” following the 4A simply indicates that the new watershed assessment unit (HUC12) retained the category from the previous Integrated Report with no re-analysis for this report. Follow-up will be consistent with Ohio EPA’s typical follow-up for watersheds in which TMDLs have been completed.

Comment: Why isn’t the Aquatic Life Use Assessment Score for 05060001_11_01 a lot higher than for HUC 05060001_11_03? Does this mean that Deep Run needs more restoration than the EWH area of the Olentangy? [FLOW]

HUC 12	Name	Aquatic Life Use Score
05060001 11 01	Deep Run	33.3
05060001 11 02	EWH Area of Olentangy	39
05060001 11 03	Olentangy Mouth	39
05060001 10 07	Delaware Run	20

Response: Care needs to be taken in assuming that the HUC12 name is for the indicated tributary only. In this case, HUC 05060001 11 01, referred to as Deep Run above, is actually named Deep Run-Olentangy River; the HUC includes Deep Run but also a portion of the Olentangy River watershed including the Olentangy River itself between Delaware Run and Deep Run, which joins the Olentangy just north of Powell Rd. (i.e., includes much of the EWH area of the Olentangy). HUC 05060001 11 02, named EWH Area of Olentangy, is named Rush Run-Olentangy River and includes the watershed and river between Deep Run and Rush Run, which joins the Olentangy near Antrim Lake. The low scores for each HUC12 are primarily caused by impairment of the tributaries within each HUC, which were assessed during the 1999 and 2003 surveys. The Olentangy River itself was, for the most part, in full attainment of the EWH or WWH aquatic life use; impairment was primarily limited to reaches in lowhead dam impoundments in Delaware and Columbus. This type of information is available in the detailed watershed reports that Ohio EPA typically completes after a watershed survey.

D6.5 Evaluation of Beneficial Use: Public Drinking Water Supply

Comment: Don't rely on Syngenta for pesticide data, they have proven themselves not worthy of trust as they continuously deny the science that says atrazine greatly alters the balance of sex hormones in fish and amphibians, even at low levels. The EPA should rely on their own testing and charge Syngenta, the source, for the EPA's testing. Water treatment does not remove many farm chemicals that are estrogen mimics, or in the case of atrazine, reported to be a testosterone converter. Atrazine is not removed by water treatment and according to a USEPA modeler of atrazine, the stuff is so much like water that even charcoal, RO, and currently used city water purification methods do not get it out of our water. He told the audience that only a good and purpose made water distiller could remove the poison from drinking water. In light of the fact that many human cancers, including breast cancer types, lung cancers, etc., are estrogen driven cancers, there is a regulatory responsibility on OEPA's part to regulate farm runoff. In light of the stem cell nature of cancer, cancer stem cells having been identified for most major human cancers, it's hard to imagine a better environment for cancer stem cells to outgrow any immune system response to the cancer. Farm chemicals such as the estrogen mimics and atrazine, BPA, and excreted natural estrogens and birth control pills from treated sewage discharges are very likely responsible for the epidemic of breast cancer in the U.S. OEPA has a responsibility to react now to the cutting edge science regarding estrogen mimics and testosterone converters etc. [BK]

Response: Ohio EPA is working to increase the number of water quality samples collected at or near public water supply intakes, including spring sampling targeted on pesticide and nutrient runoff. Unfortunately, Ohio EPA currently lacks the resources to collect sufficient data at every drinking water intake and Ohio EPA does not have the authority to force Syngenta to reimburse the agency for analytical costs. Syngenta's monitoring requirements are specified in a Memorandum of Agreement between Syngenta and the U.S. EPA. The data from the Syngenta Atrazine Monitoring Program provide a valuable set of valid water quality samples at over 20 public water system (PWS) intakes in Ohio and most of the samples are collected directly by Ohio water plant operators. Furthermore, U.S. EPA requires that all readily available data be used for listing decisions and these data have been determined to meet Ohio's credible data standards.

While it is true that "conventional" treatment processes are not effective at removal of atrazine, the contaminant is removed by the use of activated carbon or reverse osmosis (RO). Over 70% of Ohio PWS using surface water treat the water with some form of activated carbon or RO and other water systems blend with ground water or selectively pump stream water to upground reservoirs. Because of the use of effective treatment and source water management strategies, there have been no violations of finished water quality standards for atrazine in many years.

Ohio EPA appreciates your comments regarding emerging contaminants and shares your concern. A number of these contaminants are under review by the U.S. EPA and some may be included in unregulated contaminant monitoring at select Ohio PWS.

Comment: The Agency should set a goal for drinking water parameters, such as nitrates and pesticides, of no exceedances by 2020. The Conservancy recognizes this will need significant attention, and extensive cooperation among State of Ohio agencies, agricultural representatives. However, this is an important step that would boost confidence in public drinking water supplies. It also could improve aquatic life use attainment as a related benefit. [TNC]

Response: Ohio EPA appreciates your comment and is in the process of establishing goals for all of the beneficial uses in Ohio.

Comment: Water assessment and data collection should be prioritized for streams, rivers, and lakes that supply public drinking water. Surface drinking water sources should have TMDLs and be assessed for impairments before waters that have no surface public drinking water intakes, and the highest priority should be given to the waters that provide the most drinking water based on population. Polluted source water places a financial burden on the community to remove those pollutants in the treatment process. We need to identify and address the pollution at the source, especially at a time when communities may not have the resources to effectively remove chemicals from drinking water such as atrazine.

While Ohioans would expect that the 2010 integrated impaired water list gives priority to evaluate Ohioan's surface drinking water sources, the 303(d) list gives no focus or priority to surface waters that provide drinking water. Ohio has given priority to watersheds that have no public drinking water sources, leaving most major drinking water sources without completed TMDLs. In the impaired water drinking water use, only 39% of the public water suppliers are evaluated and there is no representation of the number of people that drink water from the listed stream water unit. We realize public drinking water use was only added in 2008 and encourage future actions to address the lack of information. [SC]

Response: Ohio EPA's decision to prioritize waters based on assessment unit rather than individual use is valid because of the highly integrated monitoring and TMDL linkage to ensure efficient use of resources. Figure J-5 on page J-7 illustrates how the priority points for 303(d) listings are assigned based on use impairment or other factors (extra points). Waters impaired for the public drinking water supply (PDWS) beneficial use receive the highest number of priority points and additional points are assigned if watch list conditions are identified.

Ohio EPA agrees with your contention that polluted source waters place the financial burden of treatment costs on the community. Recognition of this gap in protection of drinking water sources led to Ohio EPA's efforts to develop a methodology for meaningful assessment of the PDWS beneficial use. Assessment of the PDWS use provides the opportunity to strengthen the connection between Clean Water Act and Safe Drinking Water Act (SDWA) activities by employing the authority of the Clean Water Act to prevent contamination of source waters while minimizing the risk to human health and violations of the human health standards set forth in the SDWA. Water quality standards for protection of this use were targeted on a goal that public water systems should only need conventional treatment to produce safe drinking water and ultimately some of the burden will be shifted back to the source of the pollution in the watershed.

While PDWS use impairments were first listed only in 2008, Ohio EPA began incorporating the PDWS impairments into ongoing TMDLs as soon as practicable, such as an atrazine-based PDWS impairment in the White Oak Creek watershed. The large river PDWS impairments caused by elevated nitrate in the northwestern part of the state are a priority for Ohio EPA. Because of the nature and scale of the watersheds involved, these projects may require a longer time frame for completion and include larger scale sampling efforts in order to develop meaningful models and recommendations.

Additional information describing populations served by PWS was added to Section H. Ohio EPA expects to incorporate PWS population data for the individual assessment units in the 2012 Integrated Report.

Comment: There is also an admission that nitrates are elevated in public drinking water supplies, so the data from each attainment standard is deficient. [SC]

Response: Ohio EPA does not understand this comment. The comment author did not respond to a request for clarification.

Comment: The 2020 General Summary of Condition should be changed from Aquatic Life Use Goals to Drinking Water Use Goals.

Drinking Water Use Primary Goals

- **2020 Goal for Drinking Water – 100% of all public water suppliers reporting**
In 2010 the percent reporting is 39%.
- **2020 Goal for Watershed Assessment Units: 90% of all public drinking water suppliers able to supply drinking water to users all year long**
In 2010 this number is unknown.

Secondary Goals – same as those listed [SC]

Response: Ohio EPA appreciates your comment and is in the process of establishing goals for all of the beneficial uses in Ohio and will consider these suggestions.

D6.6 Evaluation of Lake Erie

Comment: I think we need to concentrate on how vital it is to keep our lakes clean and free from pollutants.

As a child (I was born in 1957) I remember going to Lake Erie and the water was still blue and there were still shells that you could find on the beach. As the years passed it's not very pleasant to see algae and dead fish floating and this is just what the eye could see...who knows what else you'd find such as: bacteria, chemicals, mercury etc. Let's clean up this mess and save the planet and quit letting corporate greed take over. [PG] [MO]

Response: Thank you for your comment. Lake Erie was severely degraded in the 1960s and 1970s. Concentrated efforts to reduce phosphorus loads to the lake resulted in a much improved system in the mid-1980s to mid-1990s. Ohio now faces degraded conditions again and there are a number of research projects underway to find out what has led to this considerable decline in Lake Erie water quality.

Comment: I firmly believe that it is not only the right of Ohio Citizens to have a clean beach they can go to in the summers, but also the right of the lake to be kept clean and respected. For these reasons I would hope that you make serious strides cleaning up lake erie. Thank you for taking the time to hear my opinion. [AJ]

Comment: Lake Erie deserves our best. It is imperative that Ohio complete and implement a plan to improve our water quality and protect our citizens from contaminates. This should be of primary importance and must be done soon! When beaches are contaminated by toxic algae and other pollution we loose tourism and related JOBS. When our fish are contaminated by Mercury -citizens get sick. Pollution in our lake affects Ohioans on a daily basis. We cannot wait until 2015 for solutions - this must be moved up to the front burner. [KH]

Response: Thank you for your support. Ohio EPA's mission is to protect the environment and public health by ensuring compliance with environmental laws and demonstrating leadership in environmental stewardship. Lake Erie is held in trust by the state for the use of all Ohio citizens. Ohio continues to pursue available resources to focus on identifying and remediating the sources that are currently impacting Lake Erie.

Comment: Identify the costs to the fisheries, fishermen, and the related economies, of once through water cooling systems like the Bay Shore Power plant at the mouth of the Maumee River at Lake Erie. Identify such plants as massive fish killers. Bay Shore is, according to two studies both commissioned by the plants owners, First Energy. They should be made to install cooling towers. The plant devastates the worlds most productive walleye hatchery, especially since the dredge islands and the dike-road to Grassy Island dredge facility help direct fish and larvae into the cooling water intake. The latest fish sampling of walleye found almost no young fish, only 6 year olds, and both walleye and perch populations are dropping. During no-rain water volumes, the plant draws in the entire outupt of the Maumee River. Cooling should be listed as a source of impairment. [BK]

Response: Because of its critical location with regard to the western basin fishery in Lake Erie, the cooling water intake structure at the Bayshore Plant does affect large numbers of fish. Based upon sampling conducted in 2005 and 2006 by the company, annual impingement of fish against intake screens is estimated at 46 million, with the majority of these fish identified as emerald shiner and gizzard shad. The annual estimates for entrainment of fish through the screens and into the cooling system are: 209 million fish eggs; 2,247 million fish larvae; and 14 million juvenile fish. (Unless site-specific studies can demonstrate otherwise, fish that are impinged or entrained are assumed to be have been killed.)

Ohio EPA has been working with First Energy for a number of years to develop a plan that will meet the Clean Water Act requirement of “best technology available” to reduce the fish impingement and entrainment (I&E) at the Bayshore Plant. A series of steps or tasks for reducing I&E are expected to be incorporated into the next NPDES permit renewal for the Bayshore Plant. Over the next several years, First Energy will be required to implement each task according to the schedule in the permit. As this plan is put into place, Ohio EPA expects that the reduction in I&E should be consistent with rule requirements that are forthcoming from U.S. EPA.

Although the Bayshore Plant impinges and entrains millions of fish every year, it is very difficult to determine the extent of the impact of this activity on the fishery population or the size of the walleye hatch. A new study is underway at the University of Toledo that makes use of state-of-the-art scientific equipment and a new methodology to assess the power plant’s impact on young walleye, but results will not be available for a couple of years. Because many factors influence the population of the fishery and the hatch each year (most significantly, weather), this study may not provide a definitive answer about the impacts of the plant on the walleye population for every year. For these reasons, U.S. EPA has focused on reducing I&E at intake structures from a baseline, without having to measure the impact on the population or fishery. For the time being, significant reductions in the I&E relative to the baseline will mean fewer walleye will be killed in the short term. Ohio EPA will explore additional options after the university study is completed and consider modifications to the permit as necessary.

Comment: Ohio EPA must list Lake Erie beaches as impaired for algae. Lake Erie has recently experience a large increase in algae. Working with the Alliance’s award winning Adopt-a-Beach™ program, 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. In Ohio, the program is supervised by April Mather, now certified as a Level 2 Qualified Data Collector through the Ohio Surface Water Volunteer Monitoring Program.

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 at Euclid Beach on 7/22/09. Medium algae levels in the water were recorded at Edgewater beach on 7/6/09 and Villa Angela Beach on 7/31/09.

Ohio 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 should list Lake Erie as impaired for algae and nutrients under its narrative standard.

In addition to the on the ground observations by volunteer monitors, the algae and nutrient impairment of Lake Erie 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*

Due to its impairments on the ecology of the lake and the possibility that Lake Erie is out of trophic balance, phosphorus has been listed as a pollutant of concern in the 2008 LaMP. From the LaMP, page 220, Section 10.10:

Linear trends for the periods of time before and after 1995 are presented in Table 10.6 for data from automated sampling stations on the Grand, Cuyahoga, Sandusky, and Maumee Rivers in Ohio. These results clearly show that the overall pattern of change before 1995 was one of improvement (i.e. reduced loads), while the overall pattern since 1995 is one of deterioration (i.e. increased loads). Two things stand out in these results. One is the uniformly large reversals in trends of Dissolved Reactive Phosphorus; in general the loads at the end of 2004 are nearly as high as or higher than they were at the beginning of the period of record. The other is the consistency of trend reversals. For the three water quality parameters (excluding flow), 11 of 12 trends pre-1995 were downward, but 11 of 12 trends post-1995 are upward.

Table 10.6: Percent Change per Decade in Daily Loads, Before and After 1995

Parameter	Maumee		Sandusky		Cuyahoga		Grand	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Flow	13	36	8	56	-17	41	-8	19
Suspended Sediment	8	-5	-6	34	-32	202	-93	5
Total Phosphorus	-11	29	-20	79	-69	61	-76	32
Dissolved Reactive Phosphorus	-50	199	-55	341	-88	212	-59	226

Ohio EPA should consider listing the areas which are experiencing an increasing trend in phosphorus concentrations as impaired for phosphorus.

In its 2008 Integrated Report, Ohio EPA noted that it established an Ohio Lake Erie Phosphorus Task Force in March 2007 to study the connection between phosphorus loads and increased algal growth in Lake Erie (2008 Integrated Report, p D-29). While task force recommendations were projected for 2008, the 2010 report does not include any new conclusions or a Lake Erie listing for phosphorus impairments.

While Alliance volunteers collect algae data through an online database and could provide such information to complement data already gathered by Ohio EPA, Ohio's online database for collecting volunteer monitoring data is not properly structured to accept Alliance beach sanitary survey data. Therefore, the Alliance is submitting along with these comments an Excel file with

Alliance 2009 volunteer monitoring data and asks that it be considered in the development of the 2010 list and report. The Alliance has also developed a Level 2 quality assurance plan to ensure its data meets quality standards for Ohio in order to contribute valuable information to accurately assess the health of water bodies. Ohio can better determine accurate water impairment by supplementing its own information with credible outside data sources. [AGL] [ABT]

Response: Ohio EPA supports your initiative in establishing the Adopt-a-Beach program in Ohio. The program raises awareness of local citizens and enlists their support in improving Ohio's Lake Erie beaches. It would be helpful if the use of descriptors, such as high versus medium amounts of algae, were defined and if the type of algae were noted. Ohio EPA is aware of the increasing amount of blue-green algae that has been seen in Lake Erie beginning in 1995. We have also been seeing the problem at inland lakes. Ohio EPA has proposed a phased project to raise public awareness and track the extent of the algal problem. The phases include: 1) outreach and education; 2) issuing advisories; 3) tracking/reporting/ and verifying; and 4) predicting/surveillance. More information can be found at: <http://www.epa.ohio.gov/LinkClick.aspx?fileticket=uGXAJmwPz8A%3d&tabid=3897>. There is not yet an effort in place to track algae along the nearshore so that Ohio EPA can document the extent of the problem and determine how to set standards related to beach advisories.

Please note that any data the Alliance or others submit for use in the Integrated Report or for TMDLs must be of the highest quality (Level 3 credible data), in accordance with Ohio's credible data law.

The Ohio Lake Erie Phosphorus Task Force is completing their report in March 2010. The effort focused on trying to identify the causes of the increasing loads of dissolved phosphorus and if it was connected to the increasing algal blooms. A number of recommendations will be made to attempt to decrease nonpoint phosphorus loads, particularly to the western basin.

Finally, all three Lake Erie nearshore assessment units are considered impaired for aquatic life use and nutrients are identified as one of the causes.

Comment: Ohio EPA must accelerate the schedule for TMDL implementation at Lake Erie beaches. Several Ohio beaches experienced a high number of beach action days in 2008, as required by federal law when levels of *E. coli* exceed a daily maximum of 235 CFU/100 mL. The following table lists each beach that had 14 or more action days, their location, and how many beach action days each beach had in 2008:

County	Beach ID	Local Name	Beach Action Days (2008)
ASHTABULA	OH400405	Conneaut Township Park	14
ASHTABULA	OH682568	Geneva State Park	21
ASHTABULA	OH882395	Lakeshore Park	56
CUYAHOGA	OH270037	Edgewater State Park	38
CUYAHOGA	OH244759	Euclid State Park	51
CUYAHOGA	OH736320	Villa Angela State Park	49
ERIE	OH568760	Bay View West	49
ERIE	OH517567	Edison Creek	28
ERIE	OH531706	Huron River East	17
ERIE	OH102681	Huron River West	27
ERIE	OH840983	Sherod Creek	19
ERIE	OH287343	Showse Park	19

ERIE	OH084281	Vermilion River East	25
LAKE	OH491555	Fairport Harbor	23
LAKE	OH777353	Headlands State Park (E)	16
LORAIN	OH597908	Century Beach	54
LORAIN	OH273826	Lakeview Beach	45
LUCAS	OH182884	Maumee Bay State Park (ERIE))	17
LUCAS	OH318877	Maumee Bay State Park (INLAND)	18
OTTAWA	OH351307	Camp Perry	34

Alliance volunteers have also recorded *E. coli* levels during their Lake Erie beach data collection visits. High *E. coli* results were reported at Euclid Beach on 7/17/09 and 7/22/09; Villa Angela Beach on 8/7/09 and 7/1/09; Euclid City Beach on 8/12/09 and 8/11/09; and Edgewater Beach on 5/28/09 and 6/29/09. Elevated results were recorded at Wildwood Beach on 5/23/09; Edgewater Beach on 7/13/09; Euclid Beach on 8/5/09; and Huntington Beach on 8/17/09.

Alliance volunteers also record data on the litter or wildlife presence that could be responsible for *E. coli* contamination. For three beaches in the City of Cleveland, it appears that birds could be a factor contributing to bacterial contamination and that the presence of tampons, possibly from sewage overflows, is also a concern.

- Euclid Beach Cleveland Lakefront State Park - 7/17 (60 seagulls); 7/22 (no bird counts); 8/12 (77 gulls); 7/22 (25 gulls) (51 tampons); 8/5 (7 gulls); 8/11 (2 geese); 9/19 (87 tampons)
- Villa Angela State Park Beach - 8/7 (116 gulls); 7/1 (37 geese); 7/31 (4 geese)
- Edgewater State Park Beach - 5/28 (30 gulls); 6/29 (125 gulls); 7/13 (100 gulls); 10/3 (178 tampons)

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 action days exceeds 10 percent of total beach days, the beach is considered impaired for recreational use (for results, see page F-8 of the 2010 report). As such, all of the beaches in the table above are listed as impaired for recreational use. Their schedule for TMDL development is described below (from the 2010 report, page L3-1):

Section L3. Status of Lake Erie Assessment Units

Assessment Unit	Assessment Unit Name	Human Health	Recreation	Aquatic Life	PDW Supply	Next Field Monitoring	Projected TMDL
24001 001	Lake Erie Western Basin Shoreline (including Maumee Bay and Sandusky Bay)	5x	5	5x	1	2012	2015
24001 002	Lake Erie Central Basin Shoreline	5x	5	5	1	2012	2015
24001 003	Lake Erie Islands Shoreline	5x	1	5x	1	2012	2015

The Alliance supports Ohio EPA's methodology for listing beaches as impaired for *E. coli* which considers both the seasonal geometric means as well as the number of beach action days in a season. However, the Alliance encourages Ohio EPA to expedite the TMDL for Lake Erie beaches. Based on the high counts of beach action days and elevated *E. coli* levels, these areas need action now, not 5 years in the future. Therefore, we ask Ohio to complete TMDLs for all Lake Erie Assessment Units in 2010. [AGL] [ABT]

Response: As noted, the monitoring upon which the Lake Erie shoreline TMDLs would be based is scheduled to occur in 2012. Ohio EPA has limited resources to conduct all the

monitoring and TMDLs that are needed. The agency has applied for a grant under the Great Lakes Restoration Initiative to develop and implement an Ohio nearshore monitoring program. Such a program would allow us to collect data on a more frequent and regular basis. The Ohio Department of Health has also applied for a grant under the Great Lakes Restoration Initiative that supports conducting sanitary surveys at many of the problem beaches to investigate the sources of the high bacteria levels and determine if there are near-term steps that can be taken to alleviate some of the bacteria loading.

Comment: Ohio should list Lake Erie as impaired for mercury. Ohio EPA must list Lake Erie as impaired for mercury and do more to address mercury pollution. According to the Lake Erie 2008 Lakewide Management Plan (LaMP), fish consumption is impaired by mercury (p 41, Section 4.2), and mercury is one of the most common chemical causes of sport fish consumption advisories. As such, mercury contamination is a threat to human health, especially to vulnerable populations such as pregnant women and person who rely on Lake Erie fish for subsistence or cultural reasons. Mercury has been designated as a critical pollutant for priority action in the Lake Erie LaMP due to documentation that it created impairment across the Lake Erie basin, particularly with regards to fish and wildlife consumption advisories (p 74, Section 5.1).

The following documentation of the sources of mercury pollution in the Lake Erie Basin was taken from the Lake Erie LaMP (page 100, Section 5.7.1):

Figures 5.11 and 5.12 show the top 10 contributing industries for releases of mercury and mercury compounds to land (including on-site landfills), off-site transfers to sewage treatment plants, and releases to air and water, respectively, over an eight year period (1995-2003) within the Lake Erie Basin. During that period, over 69,000 kg (151,800 lbs) of mercury were reported released or transferred to the basin: approximately 29,200 kg (64,000 lbs) to sewage treatment; 19,900 kg (43,780 lbs) to air, 20,000 kg (44,000 lbs) to land, and 168 kg (370 lbs) directly to water. Companies certified to deal with sanitary and hazardous waste were the top contributors followed by electric generating plants and chloralkali plants. Other contributors were manufacturers of industrial chemicals, paper, steel, mineral products, electric lamps, hoses and belts, and cement.

Figure 5.11: Mercury and its compounds - Top 10 industries reporting onsite releases to land and transfers to sewage treatment plants within the Lake Erie Basin. (Toxic Release Inventory (TRI) and National Pollutant Release Inventory (NPRI), 1995-2003)

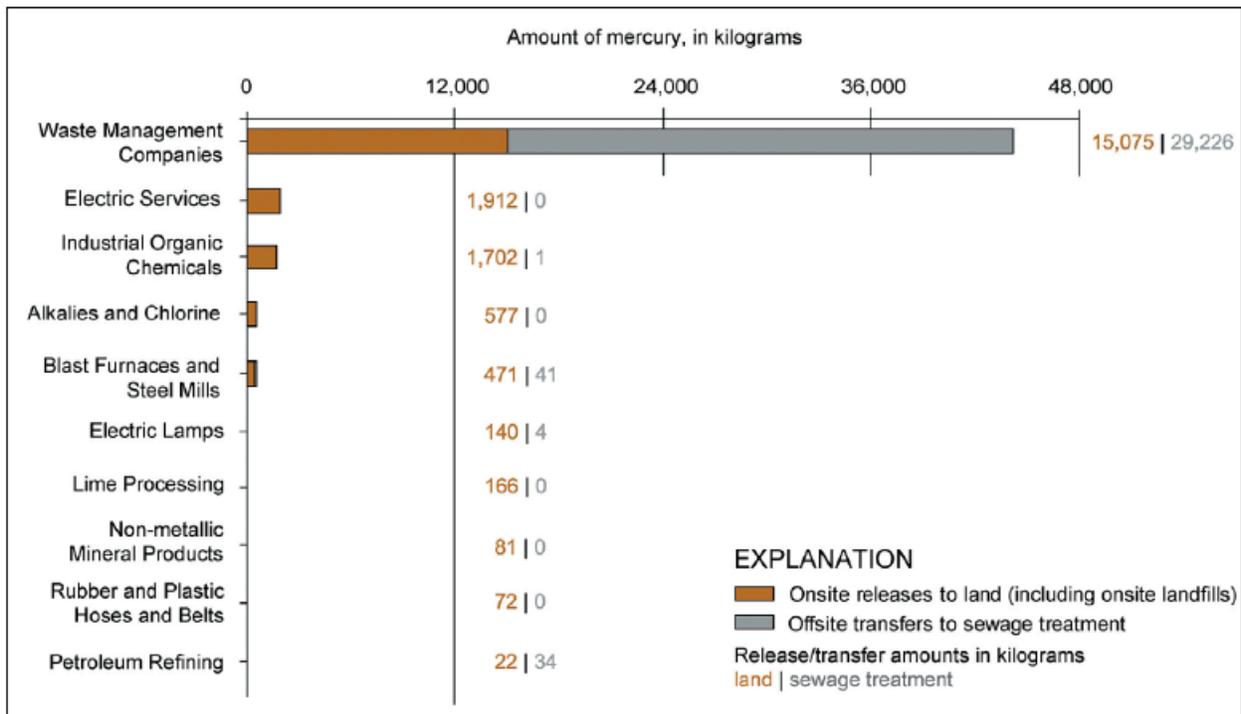
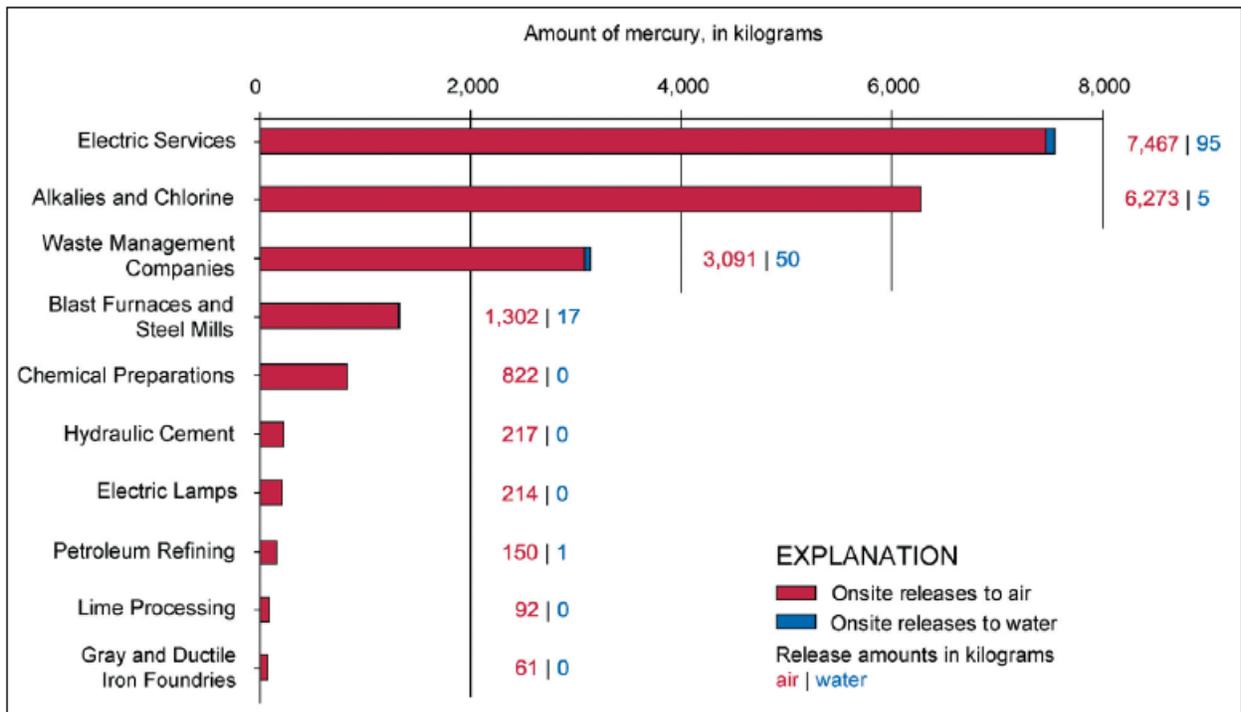


Figure 5.12: Combined estimated mercury onsite releases to air and water within the Lake Erie Basin for the top 10 contributing U.S. and Canadian industries. (Toxic Release Inventory (TRI) and National Pollutant Release Inventory (NPRI), 1995-2003)



Based on these data, Ohio should list Lake Erie as impaired by mercury. Ohio EPA may be best able to explain how it intends to address these mercury sources by properly following the U.S. EPA guidance for 5m alternatives. EPA's 2007 National TMDL EPA guidance creates a voluntary "5m alternative" for listing waters impaired by atmospheric mercury. The 5m alternative allows for the deferral of TMDLs if the state is already taking other actions in advance of TMDLs to address its mercury sources. In the 2007 guidance, the EPA recommends that the state include supporting documentation for listing waters under subcategory 5m with its 303(d) list.⁴

The following was Ohio EPA's response to comments suggesting the creation of a 5m alternative for the 2008 Integrated Report (from page D-40 of 2008 303(d) Final Report):

The 5m category is recommended for states with a comprehensive mercury reduction program in place containing elements suggested by U.S. EPA, including the following:

- That "specific legislation, regulations, or other programs that implement the recommended elements have been formally adopted by the State, as opposed to being in the planning or development stage."
- That State would describe its comprehensive mercury reduction program and how the program meets the recommended elements, including multi-media monitoring, inventories, targets and measures.

Ohio EPA determined that efforts to date would not qualify as a comprehensive program... Recognizing that mercury reductions are needed even though they are not quantified to the level needed for a total maximum daily load (TMDL) analysis, Ohio is nevertheless taking steps to reduce sources of mercury as much as possible.

And from page D-41:

Ohio EPA will continue to pursue effective mercury reduction strategies. To the extent possible with available resources, the Agency plans to assemble a comprehensive mercury program to meet the 5m requirements.

The Alliance would like to ensure that Ohio continues to develop mercury reduction strategies and that the 2010 Integrated Report reflect these efforts. Ohio EPA must list Lake Erie as impaired by mercury and begin to address Lake Erie's mercury contamination. [AGL] [ABT]

Comment: Ohio needs to to develop a comprehensive plan for reducing mercury emissions as a means of addressing mercury pollution in Lake Erie.

The EPA has identified coal-fired power plants as the largest remaining source of airborne mercury emissions in the United States, and has dubbed mercury emissions from such plants the air pollutant of "greatest potential concern."

Currently, Ohio does not have a comprehensive statewide plan to address mercury pollution that is harming Lake Erie. That needs to be invoked. Lake Erie is a valuable natural resource and it is crucial that it be protected from pollution that threatens it's stability and it's safety for the public who utilize it's many riches.

⁴ Hooks, Craig, *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, at <http://www.epa.gov/owow/tmdl/mercury5m/Mercury5m.pdf> (Jan 11, 2008).

Please enact strict guidelines for Lake Erie's water quality and enforce it strictly. [CP]

Response: Ohio's approach to mercury reduction is presented in Section I3 of the 2010 Integrated Report. The agency continues to look for additional ways to reduce mercury emissions within the regulations and staff resources available.

Ohio EPA maintains an active Lake Erie program, as described in Section C of the 2010 Integrated Report. However, the open waters of Lake Erie are not listed at all on Ohio's 303(d) list. As described in the 2010 Integrated Report, Ohio EPA will continue to participate in U.S. EPA-led efforts to improve this multi-jurisdictional, international water.

Comment: Ohio needs to adopt nutrient limits and establish nutrient loads per stream. Ohio's methodology used to calculate impairments does not include phosphorous load limits for Lake Erie, as determined by the International Joint Commission (IJC) for the Great Lakes. In other states, there are load calculations for nutrients and other generated inputs to determine the maximum allowable load per input, per tributary. The IJC limit is 11,000 tons per year for phosphorus in Lake Erie. The goal was achieved in the late 1980's and early 1990's, but loads have since been increasing. These increases have now resulted in massive algal blooms in Western Lake Erie and dead zones in the Central basin.

"An Urgent Call to Action: Report of the State-EPA Nutrient Innovations Task Force" (August 2009) (<http://www.epa.gov/waterscience/criteria/nutrient/nitgreport.pdf>) called for formal action on nutrient reduction for a number of reasons, including public water supply and aquatic life protection. According to the report findings:

"Nutrient-related pollution significantly impacts drinking water supplies, aquatic life, and recreational water quality. Continuing the status quo at the national, state and local levels and relying upon our current practices and control strategies will not support a positive public health and environmental outcome." [SC]

Response: In the early 1980s Ohio did develop a Phosphorus Reduction Strategy. The Strategy considered both point and nonpoint sources and was based on Ohio's reduction targets to achieve the 11,000 metric ton load goal set in the Great Lakes Water Quality Agreement. The point source load reductions were largely attained by reducing the phosphorus concentration from dischargers of greater than 1 million gallons per day to 1 mg/L. The nonpoint source load reductions were based on controlling soil erosion from agricultural lands through the use of best management practices. As the comment author mentions, the phosphorus loading goal was reached in the early 1980s and continued to be met through the 1990s. However, around the mid-1990s, the amount of dissolved phosphorus began to increase. Ohio EPA does not know exactly why, but it appears that a convergence of agricultural practices that have changed over the years may be the main contributor. While total phosphorus loads are not rising that much, the percentage of the total phosphorus component that is dissolved is rising significantly. Much of the dissolved phosphorus is bioavailable and directly usable by plants and algae. A number of studies are underway in the western basin area to determine why Ohio is experiencing these increases in dissolved phosphorus and if there are other factors supporting algal blooms. Ohio EPA is also aware that increasing nutrient concentrations and algal problems are occurring in many areas around the country.

Ohio EPA is working on the development of numeric criteria for nutrients in streams. Ohio EPA recognizes the total phosphorus concentration targets of 15 µg/L for the western basin and 10 µg/L for the central basin that were established under the Great Lakes Water Quality

Agreement. The Lake Erie Lakewide Management Plan (LaMP) has proposed desired total phosphorus ecological endpoints as follows: tributaries – 32 µg/L; nearshore – 20 µg/L; western basin – 15 µg/L; central basin – 10 µg/L; and eastern basin – 10 µg/L. Along with the other Lake Erie states and the province of Ontario, Ohio is working to determine if these targets are achievable and determining what actions can be taken to further decrease current phosphorus loads.

Comment: Ohio's program is based on streams and rivers, with no assessment of contribution to Lake Erie or the Ohio River. Ohio's programs, such as 319, are based on the premise that if we take care of the tributaries the main streams will be cleaner. Testing and resources are directed to the small streams which show improvements over time. However, Western Lake Erie is experiencing declines in water quality and fish numbers. At the OEPA public informational meeting in Lorraine, there appeared to be little to no knowledge of how Ohio waters are impacting Lake Erie or the Ohio River. [SC]

Response: Ohio EPA does not have a Lake Erie monitoring program and does not measure the impact of Ohio tributaries on Lake Erie. Ohio EPA does have information on nutrient and sediment loads based on a long term tributary monitoring program conducted by Heidelberg University. Ohio EPA has developed fish and habitat evaluation indices to measure the status of the environment in the Lake Erie nearshore, but has never had funding to support a regular monitoring program. Ohio EPA has submitted a proposal to U.S. EPA under the Great Lakes Restoration Initiative to support development and implementation of a regular state nearshore monitoring program to better measure the overall impact of tributary and point source loads on the lake. U.S. EPA and Environment Canada conduct monitoring programs on the open lake waters and the overall state of Lake Erie.

Comment: Western Lake Erie is green, and this report needs to add a section on the declining water quality and algae blooms in Western Lake Erie and the dead zones in the Central basin. The Lake Erie problem is prevalent in Lake Erie Ohio waters and needs to be addressed. [SC]

Response: Ohio EPA is very aware of the increasing algal blooms and increasing dissolved phosphorus loads to the western basin. Efforts to better understand the causes and magnitude of the problem are discussed in Section C of the 2010 Integrated Report.

Comment: Ohio has the same discharge limits for NPDES permits for all of Lake Erie and Maumee Bay even though the depth of water in Lake Erie's three basins is significantly different. Western Lake Erie is classified for warm water habitat. OEPA and USEPA should require discharge limit modeling for Maumee Bay and for Western Lake Erie. [SC]

Response: The Ohio Administrative Code (or rules) makes no distinction between discharges to Maumee Bay versus other areas of Lake Erie with regard to the default procedures and assumptions used for water quality modeling. The rules do allow mixing zone studies to be developed in order to address unique or different circumstances which might affect modeling results. However, these types of studies can be very complex with varying levels of success in accurately representing the flow characteristics. Development of a water quality model for areas such as Maumee Bay with many factors such as seiche effects (i.e. the flowing back and forth of lake water levels), the confined disposal facility, the Maumee River, and Lake Erie levels affecting critical flows is very difficult as evidenced by some of the previous efforts undertaken to model the flow at the mouths of the Maumee River and the Cuyahoga River. Although Ohio EPA would review alternative modeling proposals and mixing zone studies, developing such models would require more resources than are currently available to the agency. Finally,

development and use of an alternative model may not result in significant changes in permit requirements for a discharger.

Comment: The 303(d) report does not list/recognize the existence of Maumee and Sandusky Bays. [SC]

Response: In Section L.3, both Maumee Bay and Sandusky Bay are listed as impaired for human health, recreation and aquatic life. Field monitoring is scheduled for 2012 with projected TMDLs in 2015. The bays are included under the Lake Erie Western Basin Shoreline Assessment Unit (24001 001).

D6.7 Report Format and Content

Comment: Changes in How Data Are Processed and Results Are Reported. Size of Assessment Units - In the 2008 Integrated Report, Section I4 discussed reporting “on the next smaller size watershed to provide information on a finer scale and allow for better reporting of watershed improvements.” We recognize the agency has done this in the 2010 draft, and agree that the smaller HUCs can lead to better reporting, and also better ensure Ohio addresses missed problems, such as with problems isolated to a limited portion of a watershed, headwater streams degradation, cumulative impacts, and the impact on downstream uses. We encourage Ohio EPA to continue these efforts, especially given the high quality database in place, and expand the number of reports prepared. [TNC]

Response: Thank you for the comment.

Comment: When possible, making new attainment maps available by 8-digit HUC would be useful. Labeling stream names and county lines on those maps would aid the public in recognizing local problems. The maps need to include watershed names, stream names and other identifiers to make them more readable to the public.

We recognize maps are included in the Watershed Assessment Unit Summaries at <http://wwwapp.epa.ohio.gov/dsw/ir2010/basin.php>. Some additional coverage of conditions would be helpful, so that larger (but less than statewide) watersheds or basins can be viewed by attainment status, and these are readily identifiable. [TNC]

Response: Ohio EPA appreciates this input and will work to improve its mapping to the extent possible given resources available. The recent availability of a more sophisticated database has greatly advanced Ohio EPA’s ability to share information with the public. Ohio EPA will keep these suggestions in mind as it explores better ways to communicate with the public.

Comment: Links from the Watershed Assessment Unit Summaries WWW pages to the Ohio EPA’s TMDL pages would be helpful. [TNC]

Response: Links to approved TMDL reports have been added to the pertinent summary Web pages.

Comment: Ohio EPA data analyses, such as that addressing the Headwater Habitat Evaluation Index, have added significantly to the understanding of Ohio stream health, and should be added to this report. [TNC]

Response: When the rulemaking procedure to establish the headwater habitat criteria is complete, Ohio EPA will evaluate all headwater data collection efforts and develop an appropriate assessment and reporting mechanism.

Comment: Attainment rate - We note one outstanding problem created by the changes in reporting. The data set used resulted in a reported increase from 79 percent of monitored large river miles meeting standards in the 2008 report, to 93 percent of monitored miles in full attainment in the draft 2010 report. While we recognize this was not intentionally misleading, the apparent improvement might be greater than the actual improvement. This is due to changes such as old (>10 years) data sets not being used (page A-7, "increase in the number of large rivers attaining the aquatic life use reflects the results of new data in several rivers"). Further review of the draft report (Page G-12) shows that attainment is lower if older data is included. The public presentation of February 3, 2010, by Jeff DeShon showed statewide results using the two methods of calculation of the attainment rate, and included these rates in the same chart. This way, the public could see the results over time and by both methods at the same time. We encourage the Agency to include Mr. DeShon's chart in the final report, and to emphasize this explanation and illustration early in the report and in any press releases.

Beyond this point, we very much appreciate the extensive review of attainment by beneficial use type, and recognize that there have been data changes (e.g., from fecal coliform to *E. coli* tracking) that prevent other long-term trend analyses. [TNC]

Response: Thank you for the comment. The requested figure from the public presentation has been added to Section B of the report.

Comment: Figure C-1 – The Conservancy greatly appreciates the inclusion of the map of antidegradation categories for Ohio streams. We request that:

- (1) this map be provided to the public as a high resolution file map (jpeg, pdf formats);
- (2) the data for this map be provided as GIS files that would be available for the public, with metadata to describe the information included in the file ; and
- (3) we suggest stream segment color changes for the various categories, so that higher quality waters are stronger colors such as Blue or Green (OSW, SRW) and lower quality waters are colors such as Red or Purple (LQW). [TNC]

Response: Figure C-1 has been updated according to the suggestions above. An Adobe file has been added to Section K that is intended to be printed as size ANSI C. GIS data representing the antidegradation tiers are available here:
<http://www.epa.ohio.gov/dsw/gis/index.aspx>.

Three layers are required:

1. Beneficial Use Designations
2. Superior High Quality Waters
3. Outstanding State Waters

The Beneficial Use Designation layer represents General High Quality Waters, Limited Quality Waters, and State Resource Waters. The Superior High Quality Waters layer and the Outstanding State Waters layer represent the antidegradation tiers that their names suggest. Contact Matt Fancher (matt.fancher@epa.state.oh.us) with questions regarding these data.

Comment: Section K. We appreciate the continued use of HUC based maps to display results. We support efforts to display the HUC boundaries of the Large River Assessment Units where possible. Displaying the contributing watershed of the LRAUs helps give context to the results of evaluations and helps avoid the risk of separating the results of the WAU from the results of the LRAU.

We would encourage using color ramps that are visually familiar to the public. This would include using Red as the lowest class and Green or Blue as the highest class. By using a ROYGBIV order color ramp the highest quality streams or HUCs are given the least visually compelling and least intuitive colors. [TNC]

Response: The four maps showing index scores (two for recreation use and two for aquatic life use) are using a ROYGBIV color ramp. The deepest purple color indicates a score of 100, red indicates very poor scores, and colors between (e.g., yellow and green) indicate scores nearer to 50. A map showing the contributing area of large river assessment units has been added to Section K.

Comment: Section L. To make the tables easier to interpret, include explanations of the codes used in the columns in Section L1. Status of Watershed Assessment Units and Section L5. Monitoring and TMDL Schedules for Ohio's Watershed and Large River Assessment Units. We recognize these codes are listed elsewhere in the report, but including them again at the beginning of Section L would aid readers in interpreting Section L's content. [TNC]

Response: A key has been added to the front of Section L.

Comment: Per Table A-2 in Section A:

	2008	2010
Smaller watersheds		
Number of watersheds	1,756	1,538
Average size of watershed	24 square miles	27 square miles

FLOW thought that the goal was to make the assessment watersheds smaller but the data in Table A-2 (shown above) indicates that the average watershed is now larger. Please explain. [FLOW]

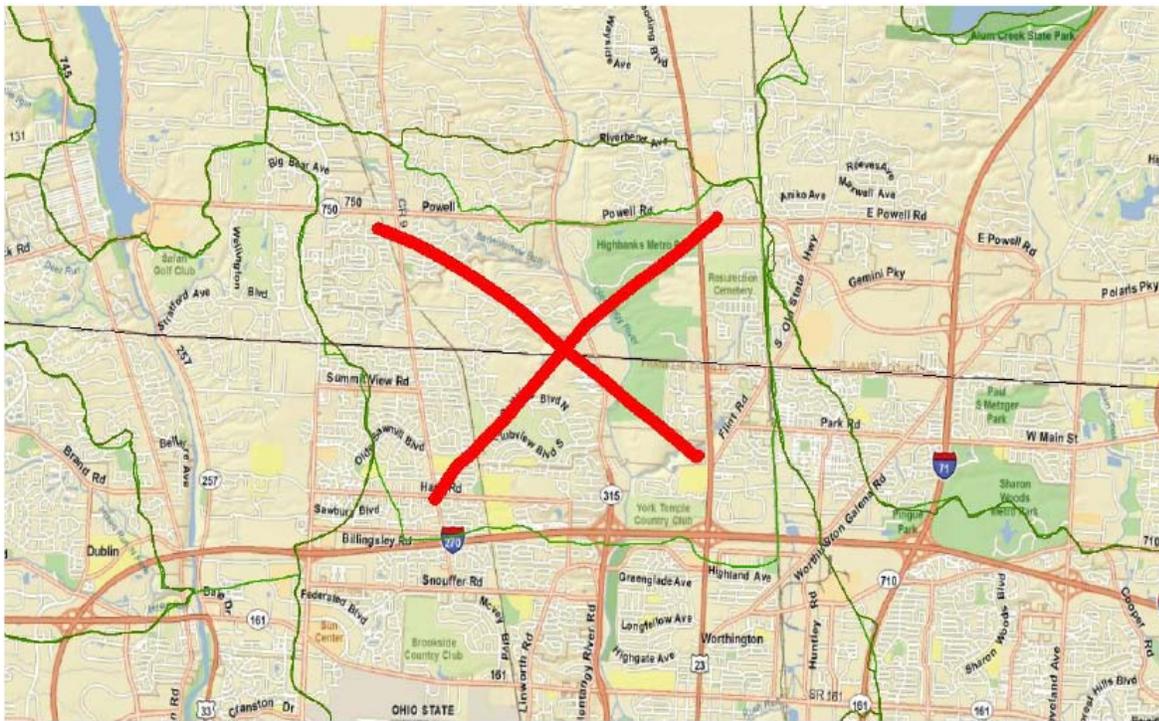
Response: The comparison shown in Table A-2 was intended to help explain the changes in hydrologic unit coding system, not specifically a change in assessment unit. In the re-drawing of hydrologic units, the number of smaller watersheds changed from 1,756 to 1,538. Since the area remained constant, fewer units mean the average size is larger. The units used for listing changed from the larger 11-digit hydrologic unit coding (HUC) system to the smaller 12-digit HUC. The size of the assessment unit changed from the 11-digit HUC (average size of 130 square miles) in 2008 to the 12-digit HUC (average size of 27 squares miles) in 2010. The table shows the 11-digit HUC statistics along with the 14-digit HUCs and the redrawn 10- and 12-digit HUCs.

Comment: Section K needs a 12 digit Hydrologic Unit Code (HUC) map to ensure the proper interpretation of all the other maps. A clickable map would be preferable (like the M2 map in the 2008 assessment). [FLOW]

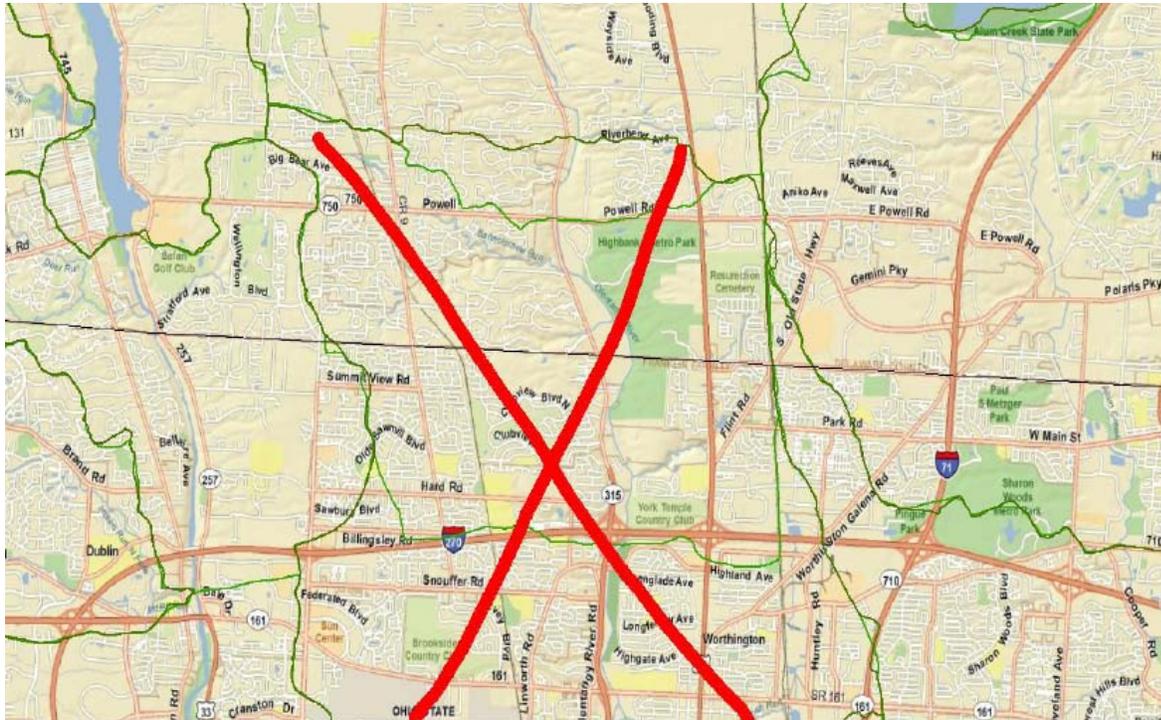
Response: Thank you for the suggestion. Because of internet technology changes in Ohio EPA's Web servers, it is not possible at this time to produce new clickable maps for the 2010

Integrated Report. However, Ohio EPA recognizes the usefulness of this type of interactive map and will work to develop something similar for the 2012 report.

Comment: How are the trends in Water Quality Assessment going to be complicated by switching from 11 and 14 digit HUC analyses to HUC 10 and 12 analyses? For example the old 14 Digit HUC 05060001_120_030 was much smaller in area than the new 12 digit HUC 05060001_11_02. See figures below. The 2008 data for HUC 05060001_120 shows that the HUC has a recreational use impairment and a fish tissue impairment for PCBs.



Old 14 Digit HUC for 05060001_120_030 as delineated by the lighter green polygon with the red x.



New 12 Digit HUC 0506000_11_02 is significantly larger than the previous 14 digit HUC as seen as outlined by the darker green polygon with the red X. [FLOW]

Response: Ohio EPA does not anticipate complications with regards to the change to 12-digit hydrologic units (HUC12s). Most of the changes involved the combination of two small HUC14s into one HUC12 more in line with national standards. HUC10s and HUC11s are very similar; only a few boundaries were redrawn across the entire state. Since the assessments of old HUC11s as well as the new HUC12s involve the results from individual sites within the assessment unit (although the assessment methodologies differed somewhat), the average of new HUC12 scores should roughly approximate the score of the old HUC11 in which they are nested. For example, the average statewide HUC11 score was nearly identical to the average statewide HUC12 score for the assessment units that were monitored in 2007 and 2008.

Any complication for trend assessment will be far less of an issue under the new goal and new baseline based on a defined population of monitoring sites. The initial goal benchmark and future status of this goal is determined by percent attainment of monitored sites statewide, irrespective of the HUC12 in which each site resides. In those situations where trend status is desired based on future follow-up work in HUC12s for which older data are available, it will be a simple process to determine what the HUC12 score would have been for the old data if it is not readily available in Ohio EPA databases.

Comment: The Search by Stream Name page is helpful but why can't it find the Olentangy River? Please consider adding an explanation of how to use this feature? [FLOW]

Response: Ohio EPA could not replicate the problem and has verified that the Olentangy River is found by this feature.

Comment: The 2010 report for HUC 05060001 11 03 (which is equivalent to 05060001 120 in 2008) does not provide any WAU comments. The detail on WAU comments provided in the

2008 report was very helpful. Could Ohio EPA please reinstitute these types of comments?
[FLOW]

Response: As new data are added to the assessment databases for future integrated reports (e.g., data collected in 2009 and 2010 for the 2012 Integrated Report) using the new 12-digit hydrologic unit (HUC12) assessment unit, comments will be added as needed much like previous reports. In the meantime, until new data are collected, the comments in the 2008 report for specific HUC11s should be applicable for the HUC12s that are nested within them. Ohio EPA also suggests that the technical watershed survey reports be referred to for much greater detail on individual sites within each HUC12. These are available at http://www.epa.ohio.gov/dsw/document_index/psdindx.aspx.

D6.8 Miscellaneous Issues

Comment: Section C6 Funding Sources for Pollution Controls. Clean Ohio Fund - This section needs to be updated to reflect the renewal of the Clean Ohio Fund in 2008. The Clean Ohio Fund WWW site, at <http://clean.ohio.gov/>, states “Placed before Ohio's voters as Issue 2, the ballot initiative was overwhelmingly approved in all 88 counties which extended the Fund with another \$400 million bond program.” [TNC]

Response: Thank you. The report has been revised.

Comment: The report lists 68 of 89 CSO communities meet the definition of implementing enforcement order. What about non-CSO communities and SSOs - what is known about their impacts to water quality? [SC]

Response: Unlike CSOs, which occur and enter waterways at known locations, SSOs can occur at random locations, and they often enter waterways indirectly through storm sewers. Like CSOs, most SSOs occur during wet weather, the volume of the discharges is variable, and the pollutants of concern are similar—pathogens, suspended solids, oxygen-demanding substances, and depending on location, industrial pollutants.

A common cause of SSOs is a blockage in a pipe. If the blockage is cleared and the SSO doesn't occur again, the impacts to water quality will be transient. However, if the SSO is caused by inadequate pipe capacity and is a recurring problem, the impairment “signature” in the receiving water will be similar to a recurring CSO. Ohio EPA field crews observe this impairment during water quality surveys and identify sewer overflows as a source of the impairment. This is noted in Ohio EPA's water quality reports as well as in the Integrated Report.

SSOs are illegal discharges, and specific reporting requirements are included in the discharge permits for all municipal wastewater treatment plants. This reporting allows Ohio EPA to identify communities with chronic SSO problems and to take appropriate actions to eliminate them. These could be enforcement actions resulting in administrative or judicial orders to eliminate the SSOs; or in some cases, elimination is addressed through the NPDES permit.

Comment: Although Federal Law allows NPDES permits to be issued for CAFO's only when there is a spill, Ohio can and needs to impose a tougher standard for CAFO's especially in light of the admission of higher nitrate levels in streams and rivers. [SC]

Response: Current Ohio law is very similar to federal law. The tool that Ohio EPA retains under state law for regulating CAFOs is the NPDES permit. However, if the only discharge a CAFO has is agricultural storm water (e.g., runoff from a field where manure has been land-applied in accordance with best management practices), then that is exempted from permit requirements in the Clean Water Act, and we cannot use the NPDES permit as a tool to regulate the CAFO. Ohio EPA will continue to monitor streams for nutrients and gather data to support changes in rules and laws, and is in the process of developing water quality standards for nutrients. Ultimately, if those standards are not met in-stream, some action will need to be taken to address the impairment, but it may be through some other mechanism than NPDES permit requirements for CAFOs.

Comment: Water quantity and flow should be factored into the overall prioritization and assessment of streams. Those waters with the greatest quantity of water should be given priority over those with smaller volumes of water. [SC]

Response: The Clean Water Act makes no such distinction. Ohio EPA tends to direct its monitoring resources to streams more likely to be used by the public and these tend to be streams of larger size.

Comment: FLOW encourages Ohio EPA's proposed assessment of lakes and wetlands in future 305(b) integrated assessments as a more holistic approach. Will Delaware Lake be assessed? [FLOW]

Response: Ohio EPA anticipates that Delaware Lake will be assessed in 2018, which is the next time we are scheduled to assess the Olentangy River watershed based on the 2010 IR monitoring schedule.

Comment: In the comparison of Paint Creek Watershed using the 2008 and 2010 methodologies, the extra detail on a more intricate scale in the 2010 map indicates where the high areas of impairment are. Does this accurately give the watershed group an idea of where to focus restoration efforts? [FLOW]

Response: Yes. Watershed groups and others are encouraged to consult the detailed watershed reports that Ohio EPA typically prepares after a water quality survey. These reports, including one for Paint Creek based on a survey completed in 2006, are available at http://www.epa.ohio.gov/dsw/document_index/psdindx.aspx.

Comment: As it did in 2008, the Water Task Force continues to recommend that Ohio EPA pursue development of a voluntary mercury reduction program for the 2012 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 to 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, U.S. EPA has a deadline to develop rules to address mercury emissions from coal and oil-fired power plants, which will have an added benefit in reducing mercury. 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 2012 in order to ensure that early reductions are achieved. [OUG2]

Response: Ohio's approach to mercury reduction is presented in Section I3 of the 2010 Integrated Report. The agency continues to look for additional ways to reduce mercury emissions within the regulations and staff resources available.

Comment: In the second paragraph on page J-9, it reads "[r]ecreation and aquatic life are much less affected at 43% and **464%**, respectively, although listing by use remains the primary reason for delisting for these uses" (emphasis added). This percentage should be corrected accordingly. [OUG2]

Response: Thank you. The error has been corrected.

Comment: In the first paragraph on N-16 (which begins on N-15), Ohio EPA should delete the redundant words "number of." [OUG2]

Response: Thank you. The error has been corrected.

Comment: In the first full paragraph on N-16, the first sentence should read "[r]aw water monitoring data **are** not as numerous as treated water data since regulations are tied to treated water" (emphasis added). [OUG2]

Response: Thank you. The error has been corrected.

D6.9 Monitoring Schedule

Comment: The Great Miami is scheduled for TMDLs this year, so there will be data for the next impaired water list. The Maumee is reportedly getting TMDLs for tributaries and not the main stream. This is unacceptable since the data is over 10 years old and in two years the Maumee will again be left out. Furthermore the Maumee is the most targeted river and watershed in the Great Lakes because of the nutrient problem. OEPA should place the Maumee River at the top of the list. [SC]

Response: As the comment author points out, the “Maumee is the most targeted river and watershed in the Great Lakes because of the nutrient problem.” Substantial resources are already being directed to the Maumee to address the nutrient issues, including the Western Lake Erie Basin Partnership, which is a collaboration of federal and state agencies led by the U.S. Department of Agriculture National Resources Conservation Service and the U.S. Army Corps of Engineers (<http://www.wleb.org/index.html>). U.S. EPA has also directed resources to the Maumee under the Lake Erie LaMP to better define sources and implement restoration. The best time to monitor the Maumee River again would be after some of the known sources of pollution have been addressed so that future efforts can be more targeted to the remaining problems. Regardless, the Maumee is scheduled for monitoring in 2016. If Ohio EPA is able to obtain resources before that time to monitor the river, it will do so.

Comment: What additional resources does Ohio EPA need to conduct assessments of watersheds every 5 years? [FLOW]

Response: Ohio’s *Surface and Ground Water Monitoring and Assessment Strategy 2005-2009* includes the following with regards to watershed surveys and the resources needed to cover the identified shortfall:

“An additional 3 biological field crews (6 FTEs [full-time employees]) and 7 to 8 FTEs of water quality staff at district offices (plus increased seasonal intern support) will be needed to provide 100% sampling coverage of Ohio’s wadeable streams and large rivers on a 10-year sampling rotation using current survey protocols.”

Copies of comment letters and emails, in order received.

Recreation Use Index Scores

- Per the map in Section K of the new Integrated Assessment Report- Why isn't there data for the entire Lower Olentangy Watershed? The map shows that there is data for only 2 HUCs.

Laura Fay

To Whom It May Concern:

The Water Task Force of the Ohio Utilities Group would like to request a one-week extension for the submission of comments on the 2008 Integrated Report.

The Utilities appreciate the time and effort that the Division of Surface Water has put into the Integrated Report, which is an extensive and detailed document. As such, the Utilities feel that additional time is necessary to review the document and provide meaningful comments.

Please contact me if you have any questions.

Very truly yours,

Cheri Budzynski

Cheri A Budzynski
Attorney at Law
Shumaker, Loop & Kendrick, LLP
1000 Jackson Street
Toledo, Ohio 43604-5573
419.241.9000
419.321.1332 direct
fax
cbudzynski@slk-law.com
<http://www.slk-law.com/>

Hi Beth,

I have a few suggestions regarding the preparation of the report:

1. Don't rely on Syngenta for pesticide data, they have proven themselves not worthy of trust as they continuously deny the science that says atrazine greatly alters the balance of sex hormones in fish and amphibians, even at low levels. The EPA should rely on their own testing and charge Syngenta, the source, for the EPA's testing. Water treatment does not remove many farm chemicals that are estrogen mimics, or in the case of atrazine, reported to be a testosterone converter. Atrazine is not removed by water treatment and according to a USEPA modeler of atrazine, the stuff is so much like water that even charcoal, RO, and currently used

city water purification methods do not get it out of our water. He told the audience that only a good and purpose made water distiller could remove the poison from drinking water. In light of the fact that many human cancers, including breast cancer types, lung cancers, etc., are estrogen driven cancers, there is a regulatory responsibility on OEPA's part to regulate farm runoff. In light of the stem cell nature of cancer, cancer stem cells having been identified for most major human cancers, it's hard to imagine a better environment for cancer stem cells to outgrow any immune system response to the cancer. Farm chemicals such as the estrogen mimics and atrazine, BPA, and excreted natural estrogens and birth control pills from treated sewage discharges are very likely responsible for the epidemic of breast cancer in the U.S. OEPA has a responsibility to react now to the cutting edge science regarding estrogen mimicks and testosterone converters etc.

2. Identify agricultural sources of impairment from sediment runoff , chemiclases, and fertilizers, and quantify the resulting losses to beneficial uses. Here on the Maumee River watershed, Dr. David Baker of Heidelberg College has measured farm sediment runoff entering the Maumee for 28 years. He claims the amount of farm sediments running from farms into the Maumee, is exactly the amount the Corps of Engineers has to dredge out of the Maumee on an annualized basis. Ironically, the farmers rely on the very shipping channel that they fill with mud , to ship their grain to markets. They are completely unaccountable for the costs to our water treatment in Toledo (\$3000 per day), pesticide poisoning and deaths, which are currently unknowable in number, and the cost of dredging. They are also not accountable for the cost to the fishery and beneficial uses of the river and lake Erie. These costs likely range into the many millions. Without a clear pronouncement of blame for the sediment pollution, there will likely never be accountability. Dr. Baker's nearly 3 decades of data should be utilized to this end.

3. Identify the costs to the fisheries, fishermen, and the related economies, of once through water cooling systems like the Bay Shore Power plant at the mouth of the Maumee River at Lake Erie. Identify such plants as massive fish killers. Bay Shore is, according to two studies both commissioned by the plants owners, First Energy. They should be made to install cooling towers. The plant devastates the worlds most productive walleye hatchery, especially since the dredge islands and the dike-road to Grassy Island dredge facility help direct fish and larvae into the cooling water intake. The latest fish sampling of walleye found almost no young fish, only 6 year olds, and both walleye and perch populations are dropping. During no-rain water volumes, the plant draws in the entire outupt of the Maumee River. Cooling should be listed as a source of impairment.

Will all water resouces have an announced goal by OEPA of being fishable swimable?

I have attached the full paper from work done by MIT's Gostjeva et al, comparing a colon cancer stem cell to fetal colon stem cells, they were identical, both making the same several cell types, as if they were Both attempting to make a new colon. After you check out the paper, please do pass it on to the appropriate EPA department or interested personell. Then consider the published work of Dr. Laird, USC, published in Nature Genetics,, maybe about a year ago. Laird shows that cancer is a disease of an embryonic stem cell that was put to sleep by non genetic intervention, then reawakened later in life, again by carcinogens. I'd imagine that sleeping cells that are fetal in nature would rally pretty well in a bath consisting of an overabundance of estrogens and near estrogens. I include this because it's important , even if it isn't on topic. If you'd like a link to the press on Dr. Laird's study, please advise and I'll be happy to find it for you.

Best Regards to OEPA, and best of luck to you all in giving us a healthier environment to live in.

Bill Katakis

When you dump sludge from Alliance on all the farm land around Walbourn Res., what do you think will happen to the water? You guys should check into this! Start reading what sludge consist of.

The federal Clean Water Act requires that all states update their lists of impaired waters every two years and submit them to the U.S. Environmental Protection Agency, along with plans for improving water quality in waters that fall short of the standards. Ohio EPA regulators need to work harder to combat high levels of algae on Lake Erie shorelines. In addition to nuisance algae and invasive species, Lake Erie beaches are on the receiving end of pollution from numerous other sources, including stormwater runoff, outdated sewage and septic systems, trash and wildlife.

Twenty Ohio beaches were unsafe for swimming 14 days or more during the 2008 beach season. Despite these documented problems at Lake Erie beaches, Ohio does not intend to complete a plan for improving water quality at its beaches until 2015. Please accelerate that schedule, as well as place strict updated guidelines periodically.

Waterborne bacteria and viruses can cause vomiting, diarrhea, stomachache, nausea, headache and fever. Children are the most susceptible because of their size, developing immune systems and because they are more likely to swallow water when swimming.

Ohio needs to to develop a comprehensive plan for reducing mercury emissions as a means of addressing mercury pollution in Lake Erie.

The EPA has identified coal-fired power plants as the largest remaining source of airborne mercury emissions in the United States, and has dubbed mercury emissions from such plants the air pollutant of "greatest potential concern."

Currently, Ohio does not have a comprehensive statewide plan to address mercury pollution that is harming Lake Erie. That needs to be invoked.

Lake Erie is a valuable natural resource and it is crucial that it be protected from pollution that threatens it's stability and it's safety for the public who utilize it's many riches.

Please enact strict guidelines for Lake Erie's water quality and enforce it strictly.

Thank you.

[Cynthia Piper]

To Whom It concerns,

I think we need to concentrate on how vital it is to keep our lakes clean and free from pollutants.

As a child (I was born in 1957)I remember going to Lake Erie and the water was still blue and there were still shells that you could find on the beach. As the years passed it's not very pleasant to see algae and dead fish floating and this is just what the eye could see...who knows what elseyou'd find such as: bacteria, chemicals, mercury etc. Let's clean up this mess and save the planet and quit letting corporate greed take over.

Thank You,

Peggy Gheta

GENTLEMEN

OUR WATERS NEED ALGAE AND POLLUTION HELP NOW FROM OUT DATED SEWAGE AND SPETIC SYSTEMS AND TRASH--RUN OFFS---AND OTHER FORMS OF POLLUTION. UPGRADE OUR WATER QUALITY NOW DO NOT PUT IT OFF...IT IS IMPORTANT FOR OUR HEALTH.

BETTY N. BUNCH

Hello,

I firmly believe that it is not only the right of Ohio Citizens to have a clean beach they can go to in the summers, but also the right of the lake to be kept clean and respected. For these reasons I would hope that you make serious strides cleaning up lake erie. Thank you for taking the time to hear my opinion.

[Alex Jeffers]



February 8, 2010

VIA ELECTRONIC MAIL

Trinka Mount
Ohio Environmental Protection Agency
Division of Surface Water
P.O. Box 1049
Columbus, Ohio 43216-1049

Re: Public comments on Ohio's proposed 2010 Integrated Water Quality Monitoring and Assessment Report

Dear Ms. Mount:

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, algal, and chemical 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 2010 Impaired Waters List.

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

- Address beaches impaired by algae contamination. Placing these water bodies on the Category 5 list would ensure that Total Maximum Daily Loads (TMDLs) are developed to correct the impairments.
- Accelerate the schedule of TMDL implementation to speed the rate at which Lake Erie beaches return to their healthy status.
- List Lake Erie as impaired for mercury and develop a comprehensive state plan to address the pollution under U.S. EPA's guidance for 5m alternatives.

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.

Sincerely,



Lyman C. Welch
Manager, Water Quality Programs



Eliminating Water Pollution from Lake Erie

Comments to the
Ohio Environmental Protection Agency
on
Ohio's Proposed 2010 Integrated Water Quality Monitoring and Assessment Report

February 8, 2010

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

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 a publicly available 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 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 *Escherichia coli* (*E. coli*) bacteria contamination in the Great Lakes region.

With these comments, the Alliance would like to encourage Ohio EPA to:

- I. List Lake Erie as impaired for algae;
- II. Accelerate the schedule for TMDL implementation for Lake Erie beaches; and
- III. List Lake Erie as impaired for mercury

ISSUES OF CONCERN IN OHIO'S PROPOSED 2010 IMPAIRED WATERS LIST

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

Lake Erie has recently experience a large increase in algae. Working with the Alliance's award winning Adopt-a-Beach™ program, 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. In Ohio, the program is supervised by April Mather, now certified as a Level 2 Qualified Data Collector through the Ohio Surface Water Volunteer Monitoring Program.

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 at Euclid Beach on 7/22/09. Medium algae levels in the water were recorded at Edgewater beach on 7/6/09 and Villa Angela Beach on 7/31/09.

Ohio 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 should list Lake Erie as impaired for algae and nutrients under its narrative standard.

In addition to the on the ground observations by volunteer monitors, the algae and nutrient impairment of Lake Erie 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*

Due to its impairments on the ecology of the lake and the possibility that Lake Erie is out of trophic balance, phosphorus has been listed as a pollutant of concern in the 2008 LaMP. From the LaMP, page 220, Section 10.10:

Linear trends for the periods of time before and after 1995 are presented in Table 10.6 for data from automated sampling stations on the Grand, Cuyahoga, Sandusky, and Maumee Rivers in Ohio. These results clearly show that the overall pattern of change before 1995 was one of improvement (i.e. reduced loads), while the overall pattern since 1995 is one of deterioration (i.e. increased loads). Two things stand out in these results. One is the uniformly large reversals in trends of Dissolved Reactive Phosphorus; in general the loads at the end of 2004 are nearly as high as or higher than they were at the beginning of the period of record. The other is the consistency of trend reversals. For the three water quality parameters (excluding flow), 11 of 12 trends pre-1995 were downward, but 11 of 12 trends post-1995 are upward.

Table 10.6: Percent Change per Decade in Daily Loads, Before and After 1995

Parameter	Maumee		Sandusky		Cuyahoga		Grand	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Flow	13	36	8	56	-17	41	-8	19
Suspended Sediment	8	-5	-6	34	-32	202	-93	5
Total Phosphorus	-11	29	-20	79	-69	61	-76	32
Dissolved Reactive Phosphorus	-50	199	-55	341	-88	212	-59	226

Ohio EPA should consider listing the areas which are experiencing an increasing trend in phosphorus concentrations as impaired for phosphorus.

In its 2008 Integrated Report, Ohio EPA noted that it established an Ohio Lake Erie Phosphorus Task Force in March 2007 to study the connection between phosphorus loads and increased algal growth in Lake Erie (2008 Integrated Report, p D-29). While task force recommendations were projected for 2008, the 2010 report does not include any new conclusions or a Lake Erie listing for phosphorus impairments.

While Alliance volunteers collect algae data through an online database and could provide such information to complement data already gathered by Ohio EPA, Ohio's online database for collecting volunteer monitoring data is not properly structured to accept Alliance beach sanitary survey data. Therefore, the Alliance is submitting along with these comments an Excel file with Alliance 2009 volunteer monitoring data and asks that it be considered in the development of the 2010 list and report. The Alliance has also developed a Level 2 quality assurance plan to ensure its data meets quality standards for Ohio in order to contribute valuable information to accurately assess the health of water bodies. Ohio can better determine accurate water impairment by supplementing its own information with credible outside data sources.

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

Several Ohio beaches experienced a high number of beach action days in 2008, as required by federal law when levels of *E. coli* exceed a daily maximum of 235 CFU/100 mL. The following table lists each beach that had 14 or more action days, their location, and how many beach action days each beach had in 2008:

County	Beach ID	Local Name	Beach Action Days (2008)
ASHTABULA	OH400405	Conneaut Township Park	14
ASHTABULA	OH682568	Geneva State Park	21
ASHTABULA	OH882395	Lakeshore Park	56
CUYAHOGA	OH270037	Edgewater State Park	38
CUYAHOGA	OH244759	Euclid State Park	51
CUYAHOGA	OH736320	Villa Angela State Park	49
ERIE	OH568760	Bay View West	49
ERIE	OH517567	Edison Creek	28
ERIE	OH531706	Huron River East	17
ERIE	OH102681	Huron River West	27
ERIE	OH840983	Sherod Creek	19
ERIE	OH287343	Showse Park	19
ERIE	OH084281	Vermilion River East	25
LAKE	OH491555	Fairport Harbor	23
LAKE	OH777353	Headlands State Park (E)	16
LORAIN	OH597908	Century Beach	54
LORAIN	OH273826	Lakeview Beach	45
LUCAS	OH182884	Maumee Bay State Park (ERIE))	17
LUCAS	OH318877	Maumee Bay State Park (INLAND)	18
OTTAWA	OH351307	Camp Perry	34

Alliance volunteers have also recorded *E. coli* levels during their Lake Erie beach data collection visits. High *E. coli* results were reported at Euclid Beach on 7/17/09 and 7/22/09; Villa Angela Beach on 8/7/09 and 7/1/09; Euclid City Beach on 8/12/09 and 8/11/09; and Edgewater Beach on 5/28/09 and 6/29/09. Elevated results were recorded at Wildwood Beach on 5/23/09; Edgewater Beach on 7/13/09; Euclid Beach on 8/5/09; and Huntington Beach on 8/17/09.

Alliance volunteers also record data on the litter or wildlife presence that could be responsible for *E. coli* contamination. For three beaches in the City of Cleveland, it appears that birds could be a factor contributing to bacterial contamination and that the presence of tampons, possibly from sewage overflows, is also a concern.

- Euclid Beach Cleveland Lakefront State Park - 7/17 (60 seagulls); 7/22 (no bird counts); 8/12 (77 gulls); 7/22 (25 gulls) (51 tampons); 8/5 (7 gulls); 8/11 (2 geese); 9/19 (87 tampons)
- Villa Angela State Park Beach - 8/7 (116 gulls); 7/1 (37 geese); 7/31 (4 geese)
- Edgewater State Park Beach - 5/28 (30 gulls); 6/29 (125 gulls); 7/13 (100 gulls); 10/3 (178 tampons)

According to the Ohio EPA's procedure for determining status for attainment of recreational use, both the number of beach action days and the seasonal geometric mean of *E. coli* are considered. If the number of beach action days exceeds 10 percent of total beach days, the beach is considered impaired for recreational use (for results, see page F-8 of the 2010 report). As such, all of the beaches in the table above are listed as impaired for recreational use. Their schedule for TMDL development is described below (from the 2010 report, page L3-1):

Section L3. Status of Lake Erie Assessment Units

Assessment Unit	Assessment Unit Name	Human Health	Recreation	Aquatic Life	PDW Supply	Next Field Monitoring	Projected TMDL
24001 001	Lake Erie Western Basin Shoreline (including Maumee Bay and Sandusky Bay)	5x	5	5x	1	2012	2015
24001 002	Lake Erie Central Basin Shoreline	5x	5	5	1	2012	2015
24001 003	Lake Erie Islands Shoreline	5x	1	5x	1	2012	2015

The Alliance supports Ohio EPA's methodology for listing beaches as impaired for *E. coli* which considers both the seasonal geometric means as well as the number of beach action days in a season. However, the Alliance encourages

Ohio EPA to expedite the TMDL for Lake Erie beaches. Based on the high counts of beach action days and elevated *E. coli* levels, these areas need action now, not 5 years in the future. Therefore, we ask Ohio to complete TMDLs for all Lake Erie Assessment Units in 2010.

III. Ohio should list Lake Erie as impaired for mercury

Ohio EPA must list Lake Erie as impaired for mercury and do more to address mercury pollution. According to the Lake Erie 2008 Lakewide Management Plan (LaMP), fish consumption is impaired by mercury (p 41, Section 4.2), and mercury is one of the most common chemical causes of sport fish consumption advisories. As such, mercury contamination is a threat to human health, especially to vulnerable populations such as pregnant women and person who rely on Lake Erie fish for subsistence or cultural reasons. Mercury has been designated as a critical pollutant for priority action in the Lake Erie LaMP due to documentation that it created impairment across the Lake Erie basin, particularly with regards to fish and wildlife consumption advisories (p 74, Section 5.1).

The following documentation of the sources of mercury pollution in the Lake Erie Basin was taken from the Lake Erie LaMP (page 100, Section 5.7.1):

Figures 5.11 and 5.12 show the top 10 contributing industries for releases of mercury and mercury compounds to land (including on-site landfills), off-site transfers to sewage treatment plants, and releases to air and water, respectively, over an eight year period (1995-2003) within the Lake Erie Basin. During that period, over 69,000 kg (151,800 lbs) of mercury were reported released or transferred to the basin: approximately 29,200 kg (64,000 lbs) to sewage treatment; 19,900 kg (43,780 lbs) to air, 20,000 kg (44,000 lbs) to land, and 168 kg (370 lbs) directly to water. Companies certified to deal with sanitary and hazardous waste were the top contributors followed by electric generating plants and chloralkali plants. Other contributors were manufacturers of industrial chemicals, paper, steel, mineral products, electric lamps, hoses and belts, and cement.

Figure 5.11: Mercury and its compounds - Top 10 industries reporting onsite releases to land and transfers to sewage treatment plants within the Lake Erie Basin. (Toxic Release Inventory (TRI) and National Pollutant Release Inventory (NPRI), 1995-2003)

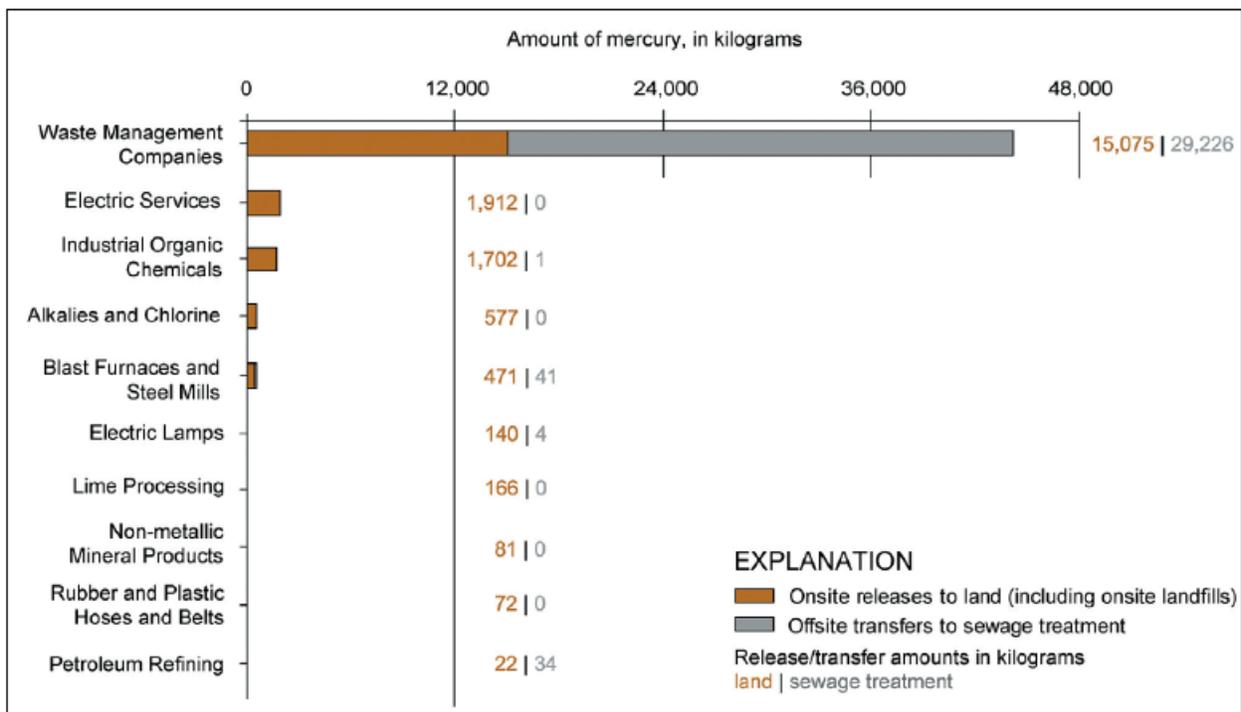
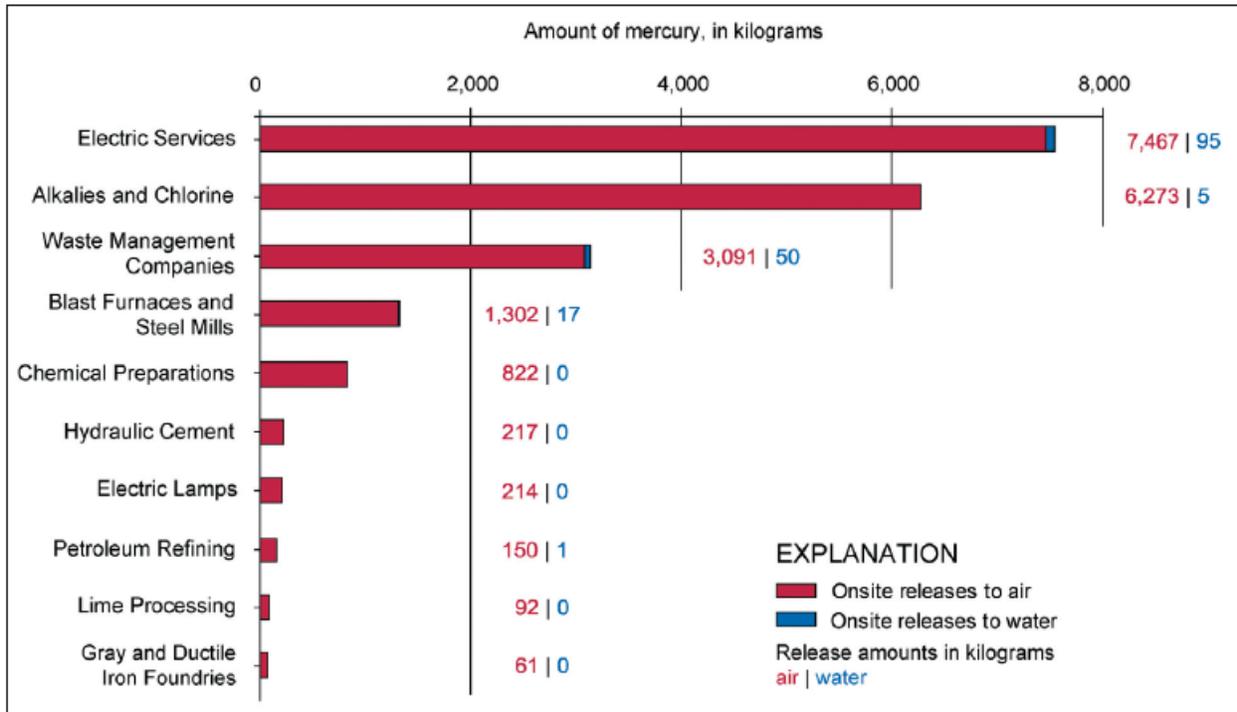


Figure 5.12: Combined estimated mercury onsite releases to air and water within the Lake Erie Basin for the top 10 contributing U.S. and Canadian industries. (Toxic Release Inventory (TRI) and National Pollutant Release Inventory (NPRI), 1995-2003)



Based on these data, Ohio should list Lake Erie as impaired by mercury. Ohio EPA may be best able to explain how it intends to address these mercury sources by properly following the U.S. EPA guidance for 5m alternatives. EPA’s 2007 National TMDL EPA guidance creates a voluntary “5m alternative” for listing waters impaired by atmospheric mercury. The 5m alternative allows for the deferral of TMDLs if the state is already taking other actions in advance of TMDLs to address its mercury sources. In the 2007 guidance, the EPA recommends that the state include supporting documentation for listing waters under subcategory 5m with its 303(d) list.⁵

The following was Ohio EPA’s response to comments suggesting the creation of a 5m alternative for the 2008 Integrated Report (from page D-40 of 2008 303(d) Final Report):

The 5m category is recommended for states with a comprehensive mercury reduction program in place containing elements suggested by U.S. EPA, including the following:

- That “specific legislation, regulations, or other programs that implement the recommended elements have been formally adopted by the State, as opposed to being in the planning or development stage.”
- That State would describe its comprehensive mercury reduction program and how the program meets the recommended elements, including multi-media monitoring, inventories, targets and measures.

Ohio EPA determined that efforts to date would not qualify as a comprehensive program... Recognizing that mercury reductions are needed even though they are not quantified to the level needed for a total

⁵ Hooks, Craig, *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, at <http://www.epa.gov/owow/tmdl/mercury5m/Mercury5m.pdf> (Jan 11, 2008).

maximum daily load (TMDL) analysis, Ohio is nevertheless taking steps to reduce sources of mercury as much as possible.

And from page D-41:

Ohio EPA will continue to pursue effective mercury reduction strategies. To the extent possible with available resources, the Agency plans to assemble a comprehensive mercury program to meet the 5m requirements.

The Alliance would like to ensure that Ohio continues to develop mercury reduction strategies and that the 2010 Integrated Report reflect these efforts. Ohio EPA must list Lake Erie as impaired by mercury and begin to address Lake Erie's mercury contamination.

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

Sincerely,



Lyman C. Welch
Manager, Water Quality Program
Alliance for the Great Lakes

Angie Ziech
Water Quality Intern

To Members of the Ohio EPA,

I speak for all of our Adopt-A-Beach team members at Euclid Beach when I say that Lake Erie's algae and wastewater management problems are out of control. When poor water quality makes a beach not only an unattractive place to visit but also a serious health hazard, there is a serious problem. We cannot wait until 2015 to adopt a comprehensive plan to address poor water quality. We urge you to support the Alliance for the Great Lakes' recommendations to:

- Address beaches impaired by algae contamination. Placing these water bodies on the Category 5 list would ensure that Total Maximum Daily Loads (TMDLs) are developed to correct the impairments.
- Accelerate the schedule of TMDL implementation to speed the rate at which Lake Erie beaches return to their healthy status.
- List Lake Erie as impaired for mercury and develop a comprehensive state plan to address the pollution under U.S. EPA's guidance for 5m alternatives.

-Doing so will ensure the health and vitality of our precious lake for years to come!

Sincerely,

-The Euclid Beach Team
Stephen Love
Dan Monroe
Richard Rozewski
Rosa Kovacevich
Candace Maria Heisley
Olivia Deiymu
Jeanie Nasvytis
Chris Smeage
Kayla Perry
Alanna Crumley
Brian Sabalusky
Clayton Rotuno
Christopher Boyd
Morsheda Akhtar
Ashton Cortwright
Michael Love
John Rech
Lauren Sammon
Joshua Rothhass
Matt Verkamp
Patrick Miltner
Adam Miltner
Megan Smith
Holly Emmons
Bryce Goodman



The Nature Conservancy in Ohio
6375 Riverside Drive, Suite 100
Dublin OH 43017

Tel (614) 717-2770
Fax (614) 717-2777

nature.org/ohio

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

Re: Draft Ohio 2010
Integrated Report Comments

Dear Ms. Mount:

The Nature Conservancy in Ohio (the Conservancy) has reviewed the December 18, 2009, draft of the Ohio "2010 Integrated Water Quality Monitoring and Assessment Report." We greatly appreciate the effort that went into producing this report, the extensive amount and high quality of work needed to create the data it is based on, and the opportunity for the Conservancy to provide these comments.

A1 Changes in How Data Are Processed and Results Are Reported

Size of Assessment Units - In the 2008 Integrated Report, Section I4 discussed reporting “on the next smaller size watershed to provide information on a finer scale and allow for better reporting of watershed improvements.” We recognize the agency has done this in the 2010 draft, and agree that the smaller HUCs can lead to better reporting, and also better ensure Ohio addresses missed problems, such as with problems isolated to a limited portion of a watershed, headwater streams degradation, cumulative impacts, and the impact on downstream uses. We encourage Ohio EPA to continue these efforts, especially given the high quality database in place, and expand the number of reports prepared.

When possible, making new attainment maps available by 8-digit HUC would be useful. Labeling stream names and county lines on those maps would aid the public in recognizing local problems. The maps need to include watershed names, stream names and other identifiers to make them more readable to the public.

We recognize maps are included in the Watershed Assessment Unit Summaries at <http://wwwapp.epa.ohio.gov/dsw/ir2010/basin.php>. Some additional coverage of conditions would be helpful, so that larger (but less than statewide) watersheds or basins can be viewed by attainment status, and these are readily identifiable.

Links from the Watershed Assessment Unit Summaries WWW pages to the Ohio EPA's TMDL pages would be helpful.

Ohio EPA data analyses, such as that addressing the Headwater Habitat Evaluation Index, have added significantly to the understanding of Ohio stream health, and should be added to this report.

Attainment rate - We note one outstanding problem created by the changes in reporting. The data set used resulted in a reported increase from 79 percent of monitored large river miles meeting standards in the 2008 report, to 93 percent of monitored miles in full attainment in the draft 2010 report. While we recognize this was not intentionally misleading, the apparent improvement might be greater than the actual improvement. This is due to changes such as old (>10 years) data sets not being used (page A-7, “increase in the number of large rivers attaining the aquatic life use reflects the results of new data in several rivers”). Further review of the draft report (Page G-12) shows that attainment is lower if older data is included. The public presentation of February 3, 2010, by Jeff DeShon showed statewide results using the two methods of calculation of the attainment rate, and included these rates in the same chart. This way, the public could see the results over time and by both methods at the same time. We encourage the Agency to include Mr. DeShon's chart in the final report, and to emphasize this explanation and illustration early in the report and in any press releases.

Beyond this point, we very much appreciate the extensive review of attainment by beneficial use type, and recognize that there have been data changes (e.g., from fecal coliform to *E. coli* tracking) that prevent other long-term trend analyses.

B3. New 2020 Aquatic Life use Goals

The Conservancy agrees the Primary Goals for aquatic life are reasonable, while we expect that an increase from 61.3 % attainment (2010) for Watershed Assessment Units to 80% (2020) will

require some significant changes in approaches such as more environmentally friendly drainage management and phosphorus reduction.

Section C – Managing Water Quality

Figure C-1 – The Conservancy greatly appreciates the inclusion of the map of antidegradation categories for Ohio streams. We request that: (1) this map be provided to the public as a high resolution file map (jpeg, pdf formats); (2) the data for this map be provided as GIS files that would be available for the public, with metadata to describe the information included in the file ; and (3) we suggest stream segment color changes for the various categories, so that higher quality waters are stronger colors such as Blue or Green (OSW, SRW) and lower quality waters are colors such as Red or Purple (LQW).

Section C6 Funding Sources for Pollution Controls

Clean Ohio Fund - This section needs to be updated to reflect the renewal of the Clean Ohio Fund in 2008. The Clean Ohio Fund WWW site, at <http://clean.ohio.gov/>, states “Placed before Ohio's voters as Issue 2, the ballot initiative was overwhelmingly approved in all 88 counties which extended the Fund with another \$400 million bond program.”

Section H: Evaluating Beneficial Use: Public Drinking Water Supply

Goal

The Agency should set a goal for drinking water parameters, such as nitrates and pesticides, of no exceedances by 2020. The Conservancy recognizes this will need significant attention, and extensive cooperation among State of Ohio agencies, agricultural representatives. However, this is an important step that would boost confidence in public drinking water supplies. It also could improve aquatic life use attainment as a related benefit.

Section I – Considerations for Future Lists

Nutrients, attainment and large-scale issues

The Integrated Report is an opportunity to address several large-scale issues related to nutrients. We encourage this for the next report, including the agency's efforts to coordinate with other agencies, such as ODNR, to address these problems.

In addition to the nutrient problems such as aquatic life nonattainment and water supply problems noted in the draft 2010 report, the Agency is well-justified to address this source of nonattainment in more detail. “An Urgent Call to Action: Report of the State-EPA Nutrient Innovations Task Force” (August 2009) (<http://www.epa.gov/waterscience/criteria/nutrient/nitgreport.pdf>) called for formal action on nutrient reduction for a number of reasons, including public water supply and aquatic life protection. Its key findings begin by stating:

“Nutrient-related pollution significantly impacts drinking water supplies, aquatic life, and recreational water quality. While available cost data associated with these impacts is

limited, what we *do* know paints a sobering picture and a compelling reason for more urgent and effective action.”

Phosphorus: The Report should include a review of nutrient problems, especially phosphorus, across Ohio, including items such as: (1) the contributions of stream loads to Lake Erie; (2) the impacts on biological communities such as fish; and (3) impacts on public water supplies. As Ohio EPA identified in its 1999 report, “Association Between Nutrients, Habitat, and the Aquatic Biota in Ohio Rivers and Streams Ohio EPA Technical Bulletin MAS/1999-1-1” phosphorus is a leading stressor in Ohio streams. The Ohio Phosphorus Task Force soon is expected to issue recommendations regarding phosphorus and Lake Erie.

We agree with the comments of the Great Lakes Alliance of August 13, 2009, to Beth Risley on Ohio EPA’s proposed 303(d) beneficial use impairment methodologies, stating “Ohio must set clear standards to determine whether water bodies are impaired by phosphorus and nutrients.” A numeric phosphorus standard for Ohio needs to be established to formalize determinations of use attainment, clarify goals and progress to the public, and encourage more and better implementation of TMDL recommendations. We encourage specific coverage of the problem in the Integrated Report.

Nitrogen: In an Integrated Report, covering the Ohio contribution of nitrogen in the Ohio River basin and to the Gulf of Mexico should address the large-scale, statewide issue of contributions to the Gulf hypoxia, as well as more local issues of drinking water quality.

Mussels

While we made the same comments for the 2008 Integrated Report, we continue to encourage the Agency to include coverage of the status of mussels in Ohio in its next Integrated Report. Given emerging knowledge about issues such as ammonia’s impacts on mussels, the Agency could correlate its extensive chemical and physical data with its own mussel data and that from others sources.

As you know, the health of many species of freshwater mussels is at risk throughout Ohio (e.g., see ODNR’s listed species, available at <http://dnr.state.oh.us/tabid/5664/Default.aspx>, <http://ohiowatersheds.osu.edu/toolshed/mussels.html>) and North America. ODNR’s listed mollusk species include 24 endangered mussel species, four threatened and nine species of concern. About 69% of freshwater mussel species are at risk in the U.S. (Stein, B.A., L.S. Kutner, and J.S. Adams (eds.) 2000. Precious heritage: The state of biodiversity in the United States. Oxford University Press. 399 pp.)

Because of their sensitivity to pollution and habitat alteration, freshwater mussels have been recommended as indicators of water quality (Hoggarth, M.A. 2006. Freshwater mussels (Unionidae) as indicators of water resource integrity. Presented at the NABS Annual meeting, Anchorage, Alaska. <http://www.benthos.org/database/allabstracts.cfm/db/Anchorage2006abstracts/id/734>). The Ohio State University Museum of Biological Diversity maintains an extensive database for mussel species distributions in Ohio (<http://www.biosci.ohiostate.edu/~molluscs/OSUM2/OFMA.htm>). Mussels can be good indicators of quality because they are stationary, must filter the water passing around them and integrate conditions over a long period of time. Given the digitization of and extensive stream data in Ohio, Ohio EPA is well-equipped. The Agency has shown it is able to analyze large

amounts of data related to other biota such as fish. The Agency could help significantly advance knowledge of Ohio's water quality using mussels. We encourage you to work with The Ohio State University and others to develop this information. A focus on mussel health and trends could lead to additional insight into water quality impacts and more comprehensively address attainment under the Clean Water Act.

In December, 2009, U.S. EPA published its "Draft 2009 Update Aquatic Life Ambient Water Quality Criteria For Ammonia – Freshwater," EPA-822-D-09-001. It states "based on the latest science, EPA reviewed and updated the freshwater ammonia aquatic life AWQC. The process of updating the freshwater ammonia criteria was initiated to include all new acute and chronic data published since the criteria document in 1984/1985, including any new toxicity data published for several freshwater mussel species in the family Unionidae." Because this might address a statewide issue related to mussels, we encourage the Agency to review this information and provide a statewide summary of conditions where this issue might be relevant.

Hydromodification/Stream flow/Drainage

In its 2008 Integrated Report, the Agency listed hydromodification among the top causes of impairment (pages A-7 and A-9). However, this is not addressed elsewhere in the report, in Chapter 3745-1 of the Ohio Administrative Code water quality criteria and values, or in this report's Section I: Considerations for Future Lists. As you know, many of the existing impairments, including organic and nutrient enrichment and contaminants, are exacerbated by hydromodification. Therefore, we suggest the Integrated Reports include work to: a) undertake a comprehensive statewide assessment of these impairments; b) 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 of Ohio's implementation of the Great Lakes Compact, which, among other things, must address the impacts of water withdrawals.

The Conservancy encourages review of stream flow that would: a) cover all rivers and streams (and ideally other waterbodies); b) is protective of aquatic life; c) is based on the natural variations of flows and water levels; and d) allows for reasonable other uses.

Additional issues that must be addressed include: a) a provision for sufficient water for other reasonable and necessary uses of water; b) specific numerical criteria, c) a determination of the maximum amount of water that can be safely withdrawn, diverted or used from ground or surface water while still being protective of aquatic life. We encourage the Agency to work with ODNR's Division of Soil and Water resources on this issue.

The Conservancy is willing to offer technical assistance to the Agency and other stakeholders on the stream flow issue. As you are probably aware, the Conservancy and others have emphasized stream flow review through the mechanism of ELOHA (Ecological Limitations of Hydrologic Alteration). Poff et al 2009. The ecological limits of hydrologic alteration (ELOHA): a new framework for developing regional environmental flow standards, *Freshwater Biology* 55:1, pp.147-170. Several additional flow references are provided at <http://conserveonline.org/workspaces/eflows>. This type of analysis is especially relevant below dams and reservoirs.

Section K – Maps

We appreciate the continued use of HUC based maps to display results. We support efforts to display the HUC boundaries of the Large River Assessment Units where possible. Displaying the contributing watershed of the LRAUs helps give context to the results of evaluations and helps avoid the risk of separating the results of the WAU from the results of the LRAU.

We would encourage using color ramps that are visually familiar to the public. This would include using Red as the lowest class and Green or Blue as the highest class. By using a ROYGBIV order color ramp the highest quality streams or HUCs are given the least visually compelling and least intuitive colors.

Section L

To make the tables easier to interpret, include explanations of the codes used in the columns in Section L1. Status of Watershed Assessment Units and Section L5. Monitoring and TMDL Schedules for Ohio's Watershed and Large River Assessment Units. We recognize these codes are listed elsewhere in the report, but including them again at the beginning of Section L would aid readers in interpreting Section L's content.

We appreciate the extensive effort that went into this report. Thank you for the opportunity to comment, and we look forward to the final version and to working with you in the future.

Sincerely,

Anthony Sasson
Freshwater Conservation Manager

cc: George Elmaraghy, DSW, Ohio EPA
John Stark, The Nature Conservancy



Trinka Mount
Ohio EPA
Division of Surface Water
P.O. Box 1049
Columbus, Ohio 43216-1049
Re: Draft Ohio 2010 Integrated Report Comments

Comments submitted by:
Sierra Club Ohio Chapter
131 N. High St. #605
Columbus, OH 43215
614-461-0734 x311

The Sierra Club Ohio Chapter has reviewed the December 18, 2009, draft of the Ohio “2010 Integrated Water Quality Monitoring and Assessment Report.” We appreciate the effort that went into producing this report, the time OEPA staff spent in meetings to provide further explanation, and the opportunity for Sierra Club Ohio Chapter to provide these comments.

Background

Ohio is blessed with an abundance of surface water from the Ohio River and Lake Erie. Our quality of life depends on these two major water resources, which also comprise much of the economic opportunities in Ohio.

Ohio has a population of approximately 11 million people, with 7.5 million getting their drinking water from surface waters and 3.5 million people getting their drinking water from ground water (USEPA). All of Ohio’s surface waters are either part of the Lake Erie watershed (about 1/3) or the Ohio River watershed (2/3). Most large intakes in the Lake Erie watershed directly pipe water from nearshore areas in Lake Erie.

Ohio Impaired Water 2010 Integrated Report Overview

Ohio’s approach to evaluating streams and rivers has been from the upland waters to the lower reaches, with the theory that if these waters are improved, improvements will also be realized in Lake Erie and the Ohio River.

Ohio does not have 303(d) process reevaluation that takes into account current conditions and information, compared to traditional 303(d) findings and methodologies. In general, Ohio’s impaired waters list involves filling in spreadsheets and conducting statistical modeling. This is particularly true for Lake Erie and the Ohio River.

TMDLs have not been conducted on Lake Erie and none are scheduled for years. Ohio assumes that if the tributaries are addressed, then Lake Erie and Ohio River water quality will improve. Similarly, if the tributaries to the Maumee River are addressed, then the Maumee River water quality will improve. While this makes theoretical sense, the reality is that nutrient levels in the Maumee River, according to Heidelberg College and other water monitoring data since 1995, show nutrient increases. Yet, there is no mention or reference to this in the 2010 Integrated Impaired waters report.

Challenges result in the 303(d) process when USEPA assigns responsibility for evaluating and reporting impaired waters on a state-by-state basis, rather than on a HUC/watershed basis. Lake Erie is shared with four states and the Canadian province of Ontario, and likewise the Ohio River is shared with eight states. These joint jurisdictions complicate how we address issues facing these waters.

The Ohio River and the Western Basin of Lake Erie both share an average depth of 24 feet. Similarly, both of these water bodies are experiencing problems with increased nutrients and algal blooms. Western Lake Erie is a targeted area for USEPA to work on nutrients and algal blooms, with additional studies on the Lake Erie Central basin’s growing dead zone (water with very low oxygen).

Western Lake Erie is once again, as it did in the 1960’s and 1970’s, experiencing massive algal blooms and declining fish populations. Certainly for Lake Erie, the nutrient problems are getting back to levels in the 1960’s and 1970’s. We urge Ohio EPA to adopt nutrient standards right away.

Ohio Integrated Impaired Water list Public/Watershed Group Involvement

Ohio’s 303(d) program lists impaired water assessment in the four use categories and there is information for each watershed with supporting data. However, watershed group input on the assessment is not part of the process and could further bolster OEPA’s work. Nor is there a 303(d) Impaired Water Committee or other committee that looks at the 303(d) listing which seeks public input on a regular basis. This severe

lack of communication is detrimental to the goals of the 303(d) listing. Many of the issues identified in these comments should have been addressed in periodic forums about the prioritization and status of the 303(d) listing and TMDLs.

Drinking Water

Water assessment and data collection should be prioritized for streams, rivers, and lakes that supply public drinking water. Surface drinking water sources should have TMDLs and be assessed for impairments before waters that have no surface public drinking water intakes, and the highest priority should be given to the waters that provide the most drinking water based on population. Polluted source water places a financial burden on the community to remove those pollutants in the treatment process. We need to identify and address the pollution at the source, especially at a time when communities may not have the resources to effectively remove chemicals from drinking water such as atrazine.

While Ohioans would expect that the 2010 integrated impaired water list gives priority to evaluate Ohioan's surface drinking water sources, the 303(d) list gives no focus or priority to surface waters that provide drinking water. Ohio has given priority to watersheds that have no public drinking water sources, leaving most major drinking water sources without completed TMDLs. In the impaired water drinking water use, only 39% of the public water suppliers are evaluated and there is no representation of the number of people that drink water from the listed stream water unit. We realize public drinking water use was only added in 2008 and encourage future actions to address the lack of information.

Aquatic Life

Ohio claims that somewhere between 80 – 93% of Ohio's aquatic use of waters are no longer impaired. We recognize that Ohio EPA has been assessing aquatic life longer than any other designated use and more data is available as a result. The 93% attainment statistic makes it appear that Ohio's fish are safe to eat on a regular basis, but this category is about fish quantities and overall evaluation of aquatic life.

Furthermore, Western Lake Erie is experiencing a decline in fish populations. ODNR together with the Great Lakes Fishery Commission states that Lake Erie walleye populations have declined from over 80 million about five years ago to around 20 million now. Likewise, there are reductions in forage fish, bass, and other species. There is no assessment of the historical quantities of fish or the trends, and nothing on aquatic life use trends in Lake Erie and the Ohio River. The report does not reflect the declining walleye numbers in Lake Erie, along with declining numbers of forage and other sport fish. Aquatic assessment should be prioritized for streams, rivers, and lakes where there is sport fishing.

The Sierra Club Ohio Chapter also supports The Nature Conservancy's comments on mussels in reference to aquatic life assessment:

While we made the same comments for the 2008 Integrated Report, we continue to encourage the Agency to include coverage of the status of mussels in Ohio in its next Integrated Report. Given emerging knowledge about issues such as ammonia's impacts on mussels, the Agency could correlate its extensive chemical and physical data with its own mussel data and that from others sources.

*As you know, the health of many species of freshwater mussels is at risk throughout Ohio (e.g., see ODNR's listed species, available at <http://dnr.state.oh.us/tabid/5664/Default.aspx>, <http://ohiowatersheds.osu.edu/toolshed/mussels.html>) and North America. ODNR's listed mollusk species include 24 endangered mussel species, four threatened and nine species of concern. About 69% of freshwater mussel species are at risk in the U.S. (Stein, B.A., L.S. Kutner, and J.S. Adams (eds.) 2000. *Precious heritage: The state of biodiversity in the United States*. Oxford University Press. 399 pp.)*

*Because of their sensitivity to pollution and habitat alteration, freshwater mussels have been recommended as indicators of water quality (Hoggarth, M.A. 2006. *Freshwater mussels (Unionidae)* as*

indicators of water resource integrity. Presented at the NABS Annual meeting, Anchorage, Alaska. <http://www.benthos.org/database/allnabstracts.cfm/db/Anchorage2006abstracts/id/734>

The Ohio State University Museum of Biological Diversity maintains an extensive database for mussel species distributions in Ohio (<http://www.biosci.ohio-state.edu/~molluscs/OSUM2/OFMA.htm>). Mussels can be good indicators of quality because they are stationary, must filter the water passing around them and integrate conditions over a long period of time. Given the digitization of and extensive stream data in Ohio, Ohio EPA is well-equipped. The Agency has shown it is able to analyze large amounts of data related to other biota such as fish. The Agency could help significantly advance knowledge of Ohio's water quality using mussels. We encourage you to work with The Ohio State University and others to develop this information. A focus on mussel health and trends could lead to additional insight into water quality impacts and more comprehensively address attainment under the Clean Water Act.

In December, 2009, U.S. EPA published its "Draft 2009 Update Aquatic Life Ambient Water Quality Criteria For Ammonia – Freshwater," EPA-822-D-09-001. It states "based on the latest science, EPA reviewed and updated the freshwater ammonia aquatic life AWQC. The process of updating the freshwater ammonia criteria was initiated to include all new acute and chronic data published since the criteria document in 1984/1985, including any new toxicity data published for several freshwater mussel species in the family Unionidae." Because this might address a statewide issue related to mussels, we encourage the Agency to review this information and provide a statewide summary of conditions where this issue might be relevant.

Human Health – Drinking Water - Nutrients

There is no statement in the executive summary or in Section B about the increases of nutrients in the western Lake Erie tributaries resulting in massive increases in algae, and increases in algae in the Ohio River. The human health and recreation categories also do not consider human contact with toxic algae. Assessment and impacts of contact with algae should be part of the human health or recreation assessment.

Ohio needs to adopt nutrient limits and establish nutrient loads per stream. Ohio's methodology used to calculate impairments does not include phosphorous load limits for Lake Erie, as determined by the International Joint Commission (IJC) for the Great Lakes. In other states, there are load calculations for nutrients and other generated inputs to determine the maximum allowable load per input, per tributary. The IJC limit is 11,000 tons per year for phosphorus in Lake Erie. The goal was achieved in the late 1980's and early 1990's, but loads have since been increasing. These increases have now resulted in massive algal blooms in Western Lake Erie and dead zones in the Central basin.

"An Urgent Call to Action: Report of the State-EPA Nutrient Innovations Task Force" (August 2009) (<http://www.epa.gov/waterscience/criteria/nutrient/nitgreport.pdf>) called for formal action on nutrient reduction for a number of reasons, including public water supply and aquatic life protection. According to the report findings:

"Nutrient-related pollution significantly impacts drinking water supplies, aquatic life, and recreational water quality. Continuing the status quo at the national, state and local levels and relying upon our current practices and control strategies will not support a positive public health and environmental outcome."

Ohio's current nutrient standards for impaired waters are based on a narrative reference document, with no basis in regulation or law, and have not been subject to public input. Furthermore, if the nutrient standards and Ohio's impaired water reports were working, then we would have early warnings of the growing nutrient levels in the waters. Ohio's evaluation of the waters in the 303(d) evaluation has failed to show the increasing nutrient problem in tributaries to Western Lake Erie and has failed to show declining fish populations. Ohio has not conducted much needed nutrient TMDLs in Lake Erie and in the Maumee River, and none are scheduled for many years. In fact, the Maumee River is not factored into the percentage of aquatic life use because the data is over ten years old. How can the greening Lake

Erie waters and the discussion of phosphorous loads from the Maumee River not be factored by OEPA into impaired water TMDL priorities?

Additional Comments

The Sierra Club requested public meetings on the integrated report during the comment period in 2010. Ohio EPA held three public information sessions in early February 2010 just before the comments were due February 8, 2010. We appreciate OEPA staff participation in meetings, and their responsiveness and promptness in addressing questions about the integrated report. We are unaware of any public forums and discussions prior to the required draft 303(d) 2010 Integrated Report. Having said this, no matter how hard some tried to review the impaired waters 303(d) report, in general the report failed to provide an understandable format that members could review and comment on.

The 305, 303(d) lists provide an ongoing assessment of impaired waters. Ohio has many data points and tracking information. The data shows that water quality in streams and some rivers is generally improving over time. The breakdown is by four 'uses' - human health, recreation, aquatic life and drinking water (recently added). The data and models are complex and mathematically determined. Some improvements from 2008 to 2010 appear to be made. Please find additional comments below:

1. We support the new breakout into smaller eleven-digit HUC units. Breaking down the large rivers to show areas where impairments exist, rather than saying the whole river is impaired, helps to identify problem areas and helps to focus limited resources toward needed improvements.
2. Ohio's program is based on streams and rivers, with no assessment of contribution to Lake Erie or the Ohio River. Ohio's programs, such as 319, are based on the premise that if we take care of the tributaries the main streams will be cleaner. Testing and resources are directed to the small streams which show improvements over time. However, Western Lake Erie is experiencing declines in water quality and fish numbers. At the OEPA public informational meeting in Lorraine, there appeared to be little to no knowledge of how Ohio waters are impacting Lake Erie or the Ohio River.
3. The Great Miami is scheduled for TMDLs this year, so there will be data for the next impaired water list. The Maumee is reportedly getting TMDLs for tributaries and not the main stream. This is unacceptable since the data is over 10 years old and in two years the Maumee will again be left out. Furthermore the Maumee is the most targeted river and watershed in the Great Lakes because of the nutrient problem. OEPA should place the Maumee River at the top of the list.
4. Northwest Ohio has more ditches than streams creating water quality issues. Some ditches are longer and have more water than the streams being evaluated. Ditches that meet stream size requirements should be included in water quality assessment for impairments due to their contributions from agricultural sources.
5. Western Lake Erie is green, and this report needs to add a section on the declining water quality and algae blooms in Western Lake Erie and the dead zones in the Central basin. The Lake Erie problem is prevalent in Lake Erie Ohio waters and needs to be addressed.
6. Water impairment should factor in water quantity. The quantity of water in a stream should be listed as well as the headwaters and the outfall location. Water quantity needs to be known to protect the resource and to look at water quality assessment (how much is dilution a factor).
7. There needs to be improved communication, watershed group involvement, and public involvement in the 303(d) process.
8. Aquatic use attainment rated as 93% attainment when two large watersheds were left out - the Maumee and the Great Miami - is a falsification and misrepresentation of the data. Overall water quality is not accurately being represented due to incomplete data from recreational, human health, and public water supply. The distortion of data occurs when aquatic life is the only measure used to represent the overall health of Ohio streams and rivers.
9. To state that "the human health standard is not appreciably different from 2008" admits that progress has not been made in this designation.
10. Only one-third of the states' water bodies were measured for recreational use. There is a lack of clarity of how streams and rivers are chosen for TMDLs. Since many of Ohio's watersheds flow directly into Lake Erie, and Western Lake Erie has known problems with toxic algae and there

is a lack of data on the Maumee, it stands to reason that the problems of insufficient data and TMDLs would be given a higher priority for the Maumee and all waters directly flowing into Lake Erie.

11. There is also an admission that nitrates are elevated in public drinking water supplies, so the data from each attainment standard is deficient.
12. The report lists 68 of 89 CSO communities meet the definition of implementing enforcement order. What about non-CSO communities and SSOs - what is known about their impacts to water quality?
13. Although Federal Law allows NPDES permits to be issued for CAFO's only when there is a spill, Ohio can and needs to impose a tougher standard for CAFO's especially in light of the admission of higher nitrate levels in streams and rivers.
14. Ohio has the same discharge limits for NPDES permits for all of Lake Erie and Maumee Bay even though the depth of water in Lake Erie's three basins is significantly different. Western Lake Erie is classified for warm water habitat. OEPA and USEPA should require discharge limit modeling or Maumee Bay and for Western Lake Erie.
15. The 303(d) report does not list/recognize the existence of Maumee and Sandusky Bays.
16. Water quantity and flow should be factored into the overall prioritization and assessment of streams. Those waters with the greatest quantity of water should be given priority over those with smaller volumes of water.
17. While we understand that level 3 certified data collection must be used in analysis, we believe that current and relevant data could be referenced separately in the report. In addition, more financial resources are needed to train additional level 3 volunteer data collectors and hire adequate staff to conduct TMDLs every five years.
18. Ohio EPA informed us that significant improvements to large rivers can be attributed to "low-hanging fruit" such as municipal sewer improvements. The public and the waters clearly will benefit from OEPA strongly enforcing existing consent orders with municipalities on wastewater discharges, and by Ohio EPA entering into new consent agreements with other municipalities who are out of compliance. The second reason for improvement of Ohio's waters that Ohio EPA mentioned was removal of dams. We urge Ohio EPA to advocate locally for dam removal, and of particular importance is the removal of the Fifth Avenue dam on the Olentangy River in Columbus.
19. Hydromodification/Stream flow/Drainage The Sierra Club supports TNC's comments on Hydromodification, Stream Flow and Drainage:
In its 2008 Integrated Report, the Agency listed hydromodification among the top causes of impairment (pages A-7 and A-9). However, this is not addressed elsewhere in the report, in Chapter 3745-1 of the Ohio Administrative Code water quality criteria and values, or in this report's Section I: Considerations for Future Lists. As you know, many of the existing impairments, including organic and nutrient enrichment and contaminants, are exacerbated by hydromodification. Therefore, we suggest the Integrated Reports include work to: a) undertake a comprehensive statewide assessment of these impairments; b) 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 of Ohio's implementation of the Great Lakes Compact, which, among other things, must address the impacts of water withdrawals.

The Conservancy encourages review of stream flow that would: a) cover all rivers and streams (and ideally other waterbodies); b) is protective of aquatic life; c) is based on the natural variations of flows and water levels; and d) allows for reasonable other uses.

Additional issues that must be addressed include: a) a provision for sufficient water for other reasonable and necessary uses of water; b) specific numerical criteria, c) a determination of the maximum amount of water that can be safely withdrawn, diverted or used from ground or surface water while still being protective of aquatic life. We encourage the Agency to work with ODNR's Division of Soil and Water resources on this issue.

The Conservancy is willing to offer technical assistance to the Agency and other stakeholders on the stream flow issue. As you are probably aware, the Conservancy and others have emphasized stream flow review through the mechanism of ELOHA (Ecological Limitations of Hydrologic Alteration). Poff et al 2009. The ecological limits of hydrologic alteration (ELOHA): a new framework for developing regional environmental flow standards, Freshwater Biology 55:1, pp.147-170. Several additional flow references are provided at <http://conserveonline.org/workspaces/eflows>. This type of analysis is especially relevant below dams and reservoirs.

The 2020 General Summary of Condition should be changed from Aquatic Life Use Goals to Drinking Water Use Goals.

Drinking Water Use Primary Goals

- **2020 Goal for Drinking Water – 100% of all public water suppliers reporting**
In 2010 the percent reporting is 39%
- **2020 Goal for Watershed Assessment Units: 90% of all public drinking water suppliers able to supply drinking water to users all year long**
In 2010 this number is unknown

Secondary Goals – same as those listed

2010 Integrated Assessment Report – Comments

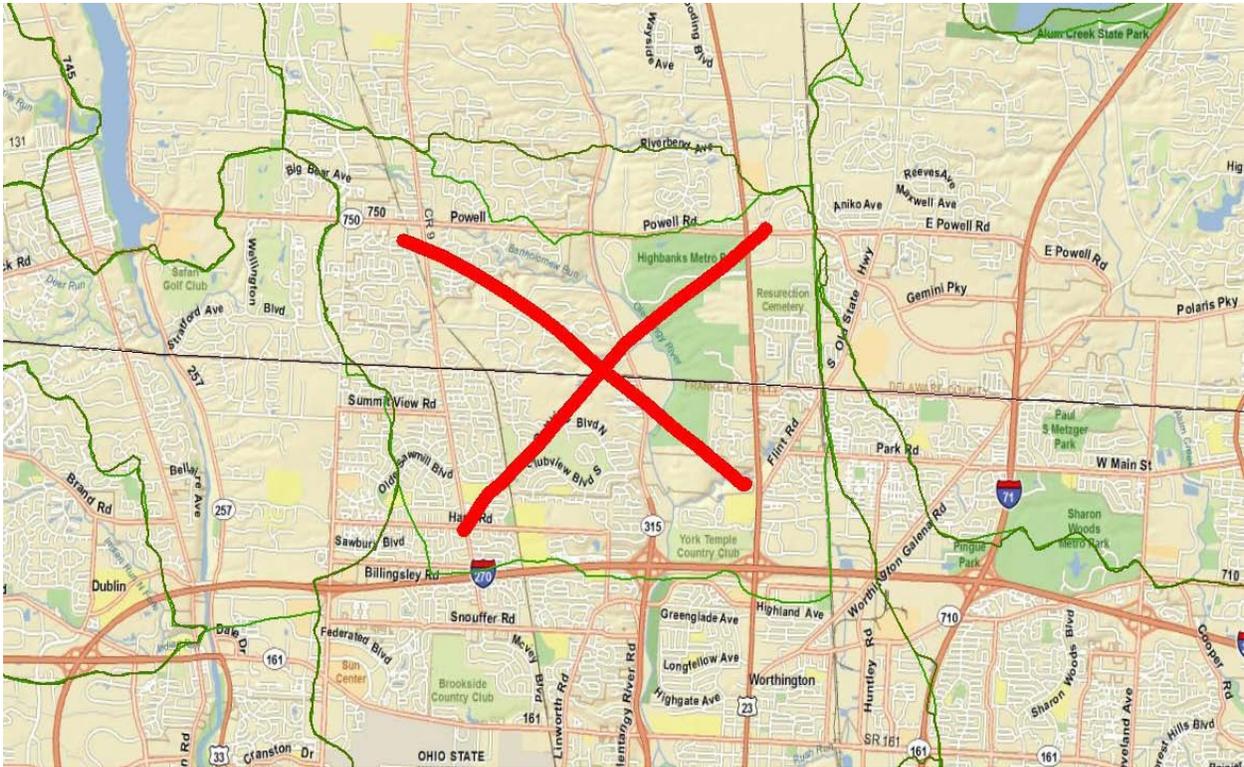
1. Per Table A-2 in Section A:

	<u>2008</u>	<u>2010</u>
Smaller watersheds		
Number of watersheds	1756	1,538
Average size of watershed	24 square miles	27 square miles

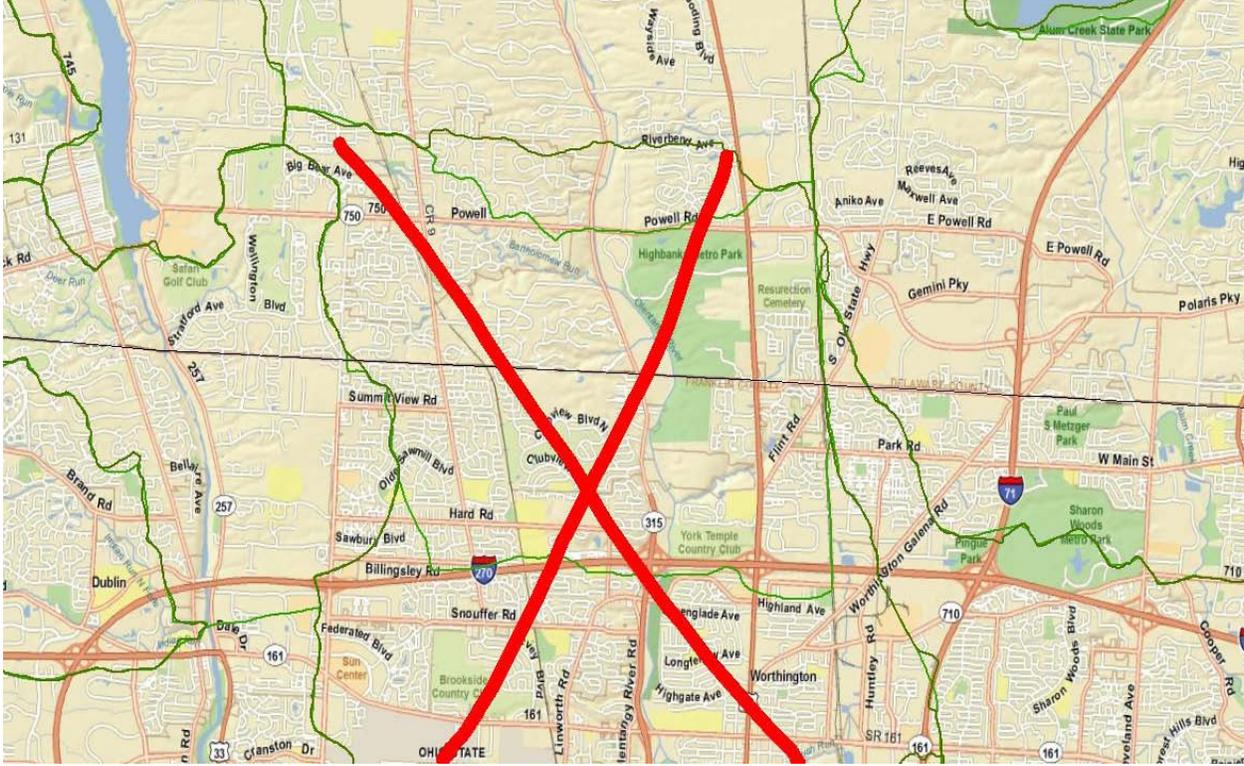
FLOW thought that the goal was to make the assessment watersheds smaller but the data in Table A-2 (shown above) indicates that the average watershed is now larger. Please explain.

2. Section K needs a 12 digit Hydrologic Unit Code (HUC) map to ensure the proper interpretation of all the other maps. A clickable map would be preferable (like the M2 map in the 2008 assessment).

3. How are the trends in Water Quality Assessment going to be complicated by switching from 11 and 14 digit HUC analyses to HUC 10 and 12 analyses? For example the old 14 Digit HUC 05060001_120_030 was much smaller in area than the new 12 digit HUC 05060001_11_02. See figures below. The 2008 data for HUC 05060001_120 shows that the HUC has a recreational use impairment and a fish tissue impairment for PCBs.



Old 14 Digit HUC for 05060001_120_030 as delineated by the lighter green polygon with the red x.



New 12 Digit HUC 0506000_11_02 is significantly larger than the previous 14 digit HUC as seen as outlined by the darker green polygon with the red X.

4. HUC 05060001_120 (Delaware Run to Mouth) shows impairments for **Fish Tissue** in the 2008 assessment but none of the four (4) 12 digit HUCs in the lower Olentangy Watershed show any impairments for Human Health from fish tissue in 2010. Why not?
5. 2010 report for HUC 05060001 11 03 (which is equivalent to 05060001 120 in 2008) lists the **Fish Tissue Assessment** at Reporting Category 1, but in 2008 list it as impaired (5) because of PCBs. What is the implication of this change in designation? Are the fish safe to eat?
6. HUC 05060001_120 (Delaware Run to Mouth) shows impairments for **Recreation Uses** in the 2008 assessment but only two (2) of the four (4) 12 digit HUCs in the lower Olentangy Watershed show data for Recreational Use in 2010. See HUCs 05060001 11 02 and 05060001 10 07. Do Recreation Use Scores of 94 and 100 indicate impairment? FLOW is concerned with the loss of detail in water quality information due to the paucity of e. coli data for this assessment in all of our HUCs. Can Ohio EPA continue to show the fecal coliform data until e. coli data is available for the purposes of watershed group assessments?
7. The 2010 report for HUC 05060001 11 03 (which is equivalent to 05060001 120 in 2008) lists the **recreational use impairment** as 4Ax but in 2008 it was 4A-TMDL. What is the implication of this change in designation?
8. What is the impact of changing the recreational use methodology from pooled to a site-by-site analysis? (SEE SECTION F).
9. The 2010 report for HUC 05060001 11 03 (which is equivalent to 05060001 120 in 2008) lists the **Aquatic Life Use Assessment** as 4Ax but in 2008 it was listed at 4A-TMDL. Does this mean that no follow-up will be done by Ohio EPA?
10. The Search by Stream Name page is helpful but why can't it find the Olentangy River? Please consider adding an explanation of how to use this feature?
11. FLOW encourages Ohio EPA's proposed assessment of lakes and wetlands in future 305(b) integrated assessments as a more holistic approach. Will Delaware Lake be assessed?
12. In the comparison of Paint Creek Watershed using the 2008 and 2010 methodologies, the extra detail on a more intricate scale in the 2010 map indicates where the high areas of impairment are. Does this accurately give the watershed group an idea of where to focus restoration efforts?
13. Why isn't the Aquatic Life Use Assessment Score for 05060001_11_01 a lot higher than for HUC 05060001_11_03? Does this mean that Deep Run needs more restoration than the EWH area of the Olentangy?

HUC 12	Name	Aquatic Life Use Score
05060001 11 01	Deep Run	33.3
05060001 11 02	EWH Area of Olentangy	39
05060001 11 03	Olentangy Mouth	39
05060001 10 07	Delaware Run	20

14. What additional resources does Ohio EPA need to conduct assessments of watersheds every 5 years?

15. The 2010 report for HUC 05060001 11 03 (which is equivalent to 05060001 120 in 2008) does not provide any WAU comments. The detail on WAU comments provided in the 2008 report was very helpful. Could Ohio EPA please reinstitute these types of comments?

[Friends of the Lower Olentangy]

To Whom It May Concern:

Please help save Lake Erie from pollution! I love Lake Erie, and I have many fond memories there. It would be so sad if Lake Erie was no longer the fun place it used to be to sail and swim due to pollution. We can do something about this!

Thank you for your time.

[Marina Owen]

CHERI A. BUDZYNSKI
419.321.1332
cbudzynski@slk-law.com

February 16, 2010

Trinka Mount
Ohio Environmental Protection Agency
Division of Surface Water
P.O. Box 1049
Columbus, Ohio 43216-1049
trinka.mount@epa.state.oh.us

Re: 303(d) List and 2010 Integrated Water Quality Monitoring and Assessment Report
Our File No. 043751

Dear Ms. Mount:

On behalf of the Water Task Force of the Ohio Utility Group and its members,⁶ we submit the following comments on the 2010 Integrated Water Quality Monitoring and Assessment Report and the 303(d) list ("Integrated Report") that the Ohio Environmental Protection Agency ("Ohio EPA") has proposed to submit to the United States Environmental Protection Agency ("U.S. EPA"). The Water Task Force appreciates the time and effort that

⁶ The member companies include Buckeye Power, Inc., Columbus Southern Power Company (AEP), The Dayton Power and Light Company, Duke Energy Ohio, Inc., Ohio Power Company (AEP), and Ohio Valley Electric Corporation.

Ohio EPA has put into the Integrated Report, which is an extensive and detailed document. As such, the Water Task Force wishes to thank Ohio EPA for granting additional time to review and comment on the report. 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 these comments.

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

While the Water Task Force does not generally object to the methodologies adopted to determine whether a watershed assessment unit is impaired for most human health criteria, 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 2010 Integrated Report, 48% of the state's stream miles are impaired 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 1668B for detecting PCBs, point sources may find that they are discharging PCBs at levels higher than the water quality standards. While Method 1668B has not been officially proposed and adopted by U.S. EPA pursuant to 40 CFR Part 136, Method 1668B 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 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.

Section I3. Mercury Reduction at Ohio EPA

As it did in 2008, the Water Task Force continues to recommend that Ohio EPA pursue development of a voluntary mercury reduction program for the 2012 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 to 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, U.S. EPA has a deadline to develop rules to address mercury emissions from coal and oil-fired power plants, which will have an added benefit in reducing mercury. 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 2012 in order to ensure that early reductions are achieved.

Miscellaneous Corrections

In the second paragraph on page J-9, it reads "[r]ecreation and aquatic life are much less affected at 43% and **464%**, respectively, although listing by use remains the primary reason for delisting for these uses" (emphasis added). This percentage should be corrected accordingly.

In the first paragraph on N-16 (which begins on N-15), Ohio EPA should delete the redundant words "number of."

In the first full paragraph on N-16, the first sentence should read "[r]aw water monitoring data **are** not as numerous as treated water data since regulations are tied to treated water" (emphasis added).

The Water Task Force appreciates the opportunity to comment on these important issues and look 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

Lake Erie deserves our best. It is imperative that Ohio complete and implement a plan to improve our water quality and protect our citizens from contaminants. This should be of primary importance and must be done soon!

When beaches are contaminated by toxic algae and other pollution we lose tourism and related JOBS.

When our fish are contaminated by Mercury -citizens get sick.

Pollution in our lake affects Ohioans on a daily basis.

We cannot wait until 2015 for solutions - this must be moved up to the front burner.

Thank you.

Kathryn Hanratty