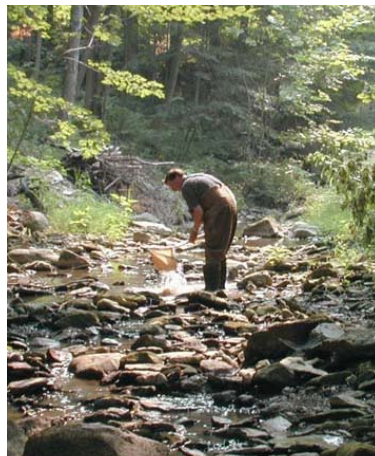


Division of Surface Water

# Ohio 2010 Integrated Water Quality Monitoring and Assessment Report

*Prepared to fulfill the requirements of  
Sections 303(d), 305(b), and 314 of the Clean Water Act*



**Final Report**  
**March 8, 2010**

Ted Strickland, Governor  
Chris Korleski, Director



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## Table of Contents

### Section A: Summary of Improvements and Results

A1: Changes in How Data Are Processed and Results Are Reported .....	A-1
A2: Summary of Results .....	A-5
A3: Water Quality Goals, Old and New .....	A-11

### Section B: Ohio's Water Resources

B1: Facts and Figures .....	B-1
B2: General Summary of Condition: Final Accounting of the "80 by 2010" Aquatic Life Use Goal .....	B-3
B3: New 2020 Aquatic Life Use Goals .....	B-5

### Section C: Managing Water Quality

C1: Program Summary – Surface Water .....	C-1
C2: Program Summary – Environmental and Financial Assistance .....	C-19
C3: Program Summary – Drinking and Ground Waters .....	C-20
C4: Program Summary – Environmental Services .....	C-20
C5: Cooperation among State Agencies and Departments .....	C-21
C6: Funding Sources for Pollution Controls .....	C-22

### Section D: Framework for Reporting and Evaluation

D1: Assessment Units .....	D-1
D2: Ohio's Water Quality Standards Use Designations .....	D-4
D3: Sources of Existing and Readily Available Data .....	D-6
D4: Evaluation of the Ohio River .....	D-9
D5: Public Involvement in Compiling Ohio's Section 303(d) List of Impaired Waters .....	D-10
D5.1: Solicitation for External Water Quality Data, 2010 Integrated Report Project (July 22, 2009) .....	D-11
D5.2: Web Page Announcing 2010 Integrated Report Preparation .....	D-18
D5.3: Notice of Availability and Request for Comments FWPCA Section 303(d)TMDL Priority List for 2010 .....	D-21
D6: Public Comments and Responses to Comments on Draft Report .....	D-21
D6.1: General Comments .....	D-22
D6.2: Evaluation of Beneficial Use: Human Health (Fish Contaminants) .....	D-27
D6.3: Evaluation of Beneficial Use: Recreation .....	D-29
D6.4: Evaluation of Beneficial Use: Aquatic Life Use .....	D-32
D6.5: Evaluation of Beneficial Use: Public Drinking Water Supply .....	D-37
D6.6: Evaluation of Lake Erie .....	D-40
D6.7: Report Format and Content .....	D-50
D6.8: Miscellaneous Issues .....	D-55
D6.9: Monitoring Schedule .....	D-57

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

E1: Background .....	E-1
E2: Rationale and Evaluation Method .....	E-1
E3: Results .....	E-8
E4: Supplemental Information .....	E-24
E4.1: Calculation of Fish Concentrations from Water Quality Standards Inputs .....	E-24

E4.2: What's the Difference between the Fish Consumption Advisory Decision and the Impairment Decision?.....	E-28
--	------

**Section F: Evaluating Beneficial Use: Recreation**

F1: Background.....	F-1
F2: Evaluation Method .....	F-2
F3: Results.....	F-6
F3.1: Lake Erie Public Beaches .....	F-6
F3.2: Rivers and Streams.....	F-11
F3.3: Inland Lakes.....	F-15

**Section G: Evaluating Beneficial Use: Aquatic Life**

G1: Background and Rationale .....	G-1
G1.1: Background .....	G-1
G1.2: General Determination of Attainment Status.....	G-2
G2: Evaluation Method.....	G-3
G2.1: Rivers and Streams: Large River Assessment Units (LRAUs) .....	G-3
G2.2: Rivers and Streams: Watershed Assessment Units (WAUs).....	G-3
G2.3: Lake Erie Nearshore, Islands, and Lacustraries.....	G-5
G3: Results .....	G-7
G3.1: Large River Units.....	G-7
G3.2: Watershed Units .....	G-8
G3.3: Lake Erie Units .....	G-8

**Section H: Evaluating Beneficial Use: Public Drinking Water Supply**

H1: Background .....	H-1
H2: Evaluation Method.....	H-3
H3: Results .....	H-5
H4: Supplemental Information.....	H-10

**Section I: Considerations for Future Lists**

I1: Wetlands.....	I-1
I2: Inland Lakes and Reservoirs.....	I-4
I2.1: Background of Ohio's Inland Lake Water Quality Monitoring Program.....	I-4
I2.2: Status of Inland Lake Program .....	I-5
I2.3: Preview of Future Listings .....	I-9
I3: Mercury Reduction at Ohio EPA.....	I-11
I3.1: Ohio Law.....	I-11
I3.2: Ohio Projects.....	I-11
I3.3: Interagency Groups.....	I-13
I3.4: Ohio Resources.....	I-14

**Section J: Addressing Waters Not Meeting Water Quality Goals**

J1: Transforming the 2008 303(d) List.....	J-2
J2: Prioritizing the Impaired Waters: the 303(d) List .....	J-6
J3: Removing Waters from the 303(d) List .....	J-8
J4: Schedule for TMDL Work .....	J-15
J4.1: Ohio TMDL Status .....	J-15
J4.2: Long-Term Schedules for Monitoring and TMDLs.....	J-15
J4.3: Short-Term Schedule for TMDL Development .....	J-16

---

## Section K: Maps

Ohio 8-Digit Hydrologic Units	
Section 303(d) Human Health (Fish Tissue) Use Categories: Watershed Assessment Units	
Section 303(d) Human Health (Fish Tissue) Use Categories: Large River Assessment Units	
Section 303(d) Recreation Use Categories: Watershed Assessment Units	
Recreation Use Index Scores: Watershed Assessment Units	
Section 303(d) Recreation Use Categories Large River Assessment Units	
Recreation Use Index Scores: Large River Assessment Units	
Section 303(d) Aquatic Life Use Categories: Watershed Assessment Units	
Aquatic Life Use Index Scores: Watershed Assessment Units	
Section 303(d) Aquatic Life Use Categories Large River Assessment Units	
Aquatic Life Use Index Scores: Large River Assessment Units	
Section 303(d) Public Drinking Water Supply Use Categories: Watershed Assessment Units	
Section 303(d) Public Drinking Water Supply Use Categories: Large River Assessment Units	
Long-Term Monitoring Schedule	
Ohio Total Maximum Daily Load Program Progress	
Antidegradation Categories	

## Section L: Summary Tables of Waterbody Conditions, List of Prioritized Impaired Waters, and Monitoring and TMDL Schedules

L1: Status of Watershed Assessment Units .....	L1-1
L2: Status of Large River Assessment Units .....	L2-1
L3: Status of Lake Erie Assessment Units.....	L3-1
L4: Section 303(d) List of Prioritized Impaired Waters (Category 5) .....	L4-1
L5: Monitoring and TMDL Schedules for Ohio's Watershed and Large River Assessment Units .....	L5-1
L6: Category 4B Demonstrations Contained in Approved Ohio TMDLs to Date .....	L6-1

## Section M: Summary Tables for Delisting Waters from the 2008 303(d) List

M1: Delisting details for watershed assessment units .....	M1-1
M2: Delisting details for large river assessment units.....	M2-1
M3: Delisting details for Lake Erie nearshore assessment units.....	M3-1

## Section N: An Overview of Ground Water Quality in Ohio

N1: Introduction.....	N-1
N2: Ohio's Ground Water Programs.....	N-2
N3: Ohio's Major Aquifers .....	N-4
N4: Facility Specific Ground Water Contamination Summary.....	N-6
N5: Major Sources of Ground Water Contamination .....	N-9
N6: Summary of Ground Water Quality by Aquifer .....	N-15
N7: Ground Water-Surface Water Interaction.....	N-28
N8: Conclusions and Future Directions for Ground Water Protection .....	N-28

## References

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## List of Tables and Figures

### Tables

A-1. Category definitions for the 2010 integrated report and 303(d) list.....	A-2
A-2. Comparison of old and new coding systems for watersheds and large rivers in Ohio. ....	A-3
A-3. New large river assessment unit subdivisions for the 2010 report.....	A-3
B-1. Ohio's water resource statistics. ....	B-2
B-2. List of Ohio's principal streams and large rivers.....	B-6
B-3. Final accounting of the "80 by 2010" aquatic life use goal based on the last five Integrated Report assessment cycles (2002-2010).....	B-12
D-1. Ohio water quality standards in the 2010 Integrated Report. ....	D-5
D-2. Data types used in the 2010 Integrated Report.....	D-7
D-3. Description of data used in the 2010 Integrated Report. ....	D-8
E-1. Comparison between fish concentration values and FCA program values.....	E-3
E-2. Example data for calculating a weighted average fish tissue value.....	E-5
E-3. Aggregate state statistics for fish contaminant data compared to human health criteria. ....	E-8
E-4. Waters impaired because levels of PCBs or mercury in fish tissue exceed the threshold level upon which the WQS criterion is based. ....	E-9
E-5. Waters not impaired because fish tissue levels of PCBs or mercury are below the threshold level upon which the WQS criterion is based. ....	E-13
E-6. Waters not impaired because fish tissue levels of PCBs or mercury are below the threshold level upon which the WQS criterion is based, and which were categorized as impaired in the 2008 Integrated Report. ....	E-14
E-7. Waters with contaminants that affect fish tissue, not included in Table E-2 for these pollutants (included on the 303(d) list). ....	E-16
E-8. Waters for which the existing impaired status cannot be confirmed because data have become historical and not enough new data are available.....	E-16
E-9. Waters with current fish tissue data where inadequate samples exist to determine impairment status. ....	E-18
E-10. Inland lakes and their impairment status.....	E-20
F-1. Summary of the recreation use assessment methods.....	F-1
F-2. Determining assessment status of Lake Erie shoreline AUs. ....	F-3
F-3. Determining assessment status of WAUs and LRAUs. ....	F-5
F-4. Recreation index score matrix.....	F-6
F-5. Seasonal geometric mean <i>E. coli</i> levels at Ohio's 23 public beaches along Lake Erie....	F-8
F-6. The number of days per season (and the percentage for all years) when Ohio Lake Erie public beaches exceeded Ohio's single sample maximum <i>E. coli</i> criterion compared to the total number of days in the sampling period, 2004 – 2008. ....	F-9
F-7. Bathing water geometric mean <i>E. coli</i> exceedance frequency at 20 Lake Erie public beaches from 2004-2008 (pooled by Lake Erie assessment unit to report assessment status). ....	F-11
F-8. Overall differences in the assessment of recreation use attainment, 2004 to 2010. ....	F-12
F-9. Attainment of <i>E. coli</i> geometric mean criteria by site.....	F-13
F-10. Summary assessment status of the recreation use in Ohio's watershed assessment units.....	F-14

F-11. Summary assessment status of the recreation use in Ohio's LRAUs. ....	F-14
F-12. Summary assessment status of the recreation use for inland lakes. ....	F-16
F-13. Swimming advisory postings at Ohio's inland lake public beaches (2004-2008). ....	F-17
G-1. Summary of aquatic life use assessment for Ohio's watershed (HUC11 and HUC12), large river, and Lake Erie assessment units: 2002-2010 Integrated Report cycles. ....	G-10
G-2. Breakdown by watershed size category of sites/miles in full attainment in monitored watershed assessment units (221 HUC11 and 999 HUC12) based on data collected from 1999 – 2008. ....	G-10
G-3. Assessment of the top five causes of aquatic life impairment in HUC12 watershed and large river assessment units based on biological and water quality survey data collected from 1999 - 2008. ....	G-11
H-1. Public drinking water supply impairment determination. ....	H-4
H-2. Waters designated as impaired for PDWS beneficial use. ....	H-9
H-3. Summary of public drinking water supply assessment results for the nitrate and pesticide indicators. ....	H-11
I-1. Proposed Lake Habitat use criteria. ....	I-7
I-2. Summary of the lake habitat use assessment for lakes sampled in 2008 using the draft assessment methodology described in this section. ....	I-10
J-1. Category definitions for the 2010 Integrated Report and 303(d) list. ....	J-1
J-2. Expansion of listing opportunities in 2010 303(d) list. ....	J-4
J-3. Example of transformation from the 2008 to the 2010 303(d) lists. ....	J-6
J-4. Priority points for impaired assessment units. ....	J-8
J-5. Delisting status of watershed assessment units. ....	J-10
J-6. Delisting status of large river assessment units. ....	J-11
J-7. Delisting status of Lake Erie nearshore assessment units. ....	J-11
J-8. Example of how selected assessment units changed from the 2008 to the 2010 303(d) lists. ....	J-14
J-9. Ohio TMDLs approved by U.S. EPA. ....	J-17
J-10. Short-term schedule for TMDL development. ....	J-22
N-1. Summary of State ground water protection programs. ....	N-2
N-2. Ground water contamination summary. ....	N-8
N-3. Major sources of ground water contamination. ....	N-11
N-4A. Counts of PWSs where 1999-2009 mean values exceed 50% MCL (watch list) and 100% MCL (impaired). ....	N-17
N-4B. Counts of wells where 1999-2009 mean values exceed 50% MCL (watch list) and 100% MCL (impaired). ....	N-25

## Figures

A-1. Comparison of reporting detail in 2008 and 2010. ....	A-6
A-2. Watersheds monitored in 2007 and 2008. ....	A-6
A-3. Comparison of 2008 and 2010 use results for watersheds. ....	A-8
A-4. Comparison of 2008 and 2010 use results for large rivers. ....	A-8
A-5. Causes of impairment of the aquatic life use. ....	A-9
A-6. Reasons for delisting of watershed assessment units, by beneficial use. ....	A-10
A-7. Final accounting of the "80 by 2010" aquatic life use goal. ....	A-12

B-1. Ohio Scenic River System (Ohio DNR 2009).....	B-3
B-2. Map of Ohio's principal streams and large rivers. ....	B-11
B-3. Final accounting of the "80 by 2010" aquatic life use goal based on the last five Integrated Report assessment cycles (2002 – 2010).....	B-12
B-4. Breakdown of average LRAU scores by full, partial and non-attainment over the last five Integrated Report assessment cycles (2002-2010); the bar on the far right includes historical data (collected prior to 1999). ....	B-13
B-5. Breakdown of average HUC11 WAU scores by full, partial, and non-attainment over the last five Integrated Report assessment cycles (2002-2010).....	B-13
C-1. Antidegradation categories for Ohio Streams. ....	C-18
D-1. Ohio's large rivers (rivers with drainages greater than 500 mi <sup>2</sup> ). ....	D-3
D-2. Ohio's 12-digit watershed assessment units (gray lines) and 8-digit hydrologic units (heavy black lines).....	D-4
E-1. Illustration of the relationship among the WQS values, the values that trigger issuance of fish consumption advisories (FCAs) and the resulting decision regarding waterbody impairment associated with an FCA. ....	E-2
E-2. Flowchart for the categorization of fish tissue data for the Integrated Report. ....	E-7
F-1. Lake Erie public beaches sampled under Ohio's bathing beach monitoring program.....	F-2
F-2. Seasonal frequency of advisory postings at Ohio's Lake Erie public beaches.....	F-10
F-3. Histogram of recreation use index scores for Ohio's watershed assessment units.....	F-13
G-1. Flowchart for determining if headwater assessment score can be derived based on available headwater sampling locations. ....	G-6
G-2. Percent full attainment and attainment category breakdown for assessed miles of Ohio's large river assessment units (23 rivers/38 AUs/1226.7 miles total). ....	G-11
G-3. Comparison of large river assessment unit status between current 2010 Integrated Report data (1999 – 2008) and all available data, irrespective of age (1992 – 2008)....	G-12
G-4. Average full attainment watershed score and attainment category breakdown for assessed sites in Ohio's HUC11 watershed assessment units (331 total). ....	G-12
G-5. Comparison of average full attainment watershed scores for HUC11 (331 total) and HUC12 (1538 total) watershed assessment units compiled for the 2010 Integrated Report cycle (scores based on attainment status at 4200 sites collected from 1999-2008).....	G-13
H-1. Ohio watershed (HUC12) and large river assessment units that contain at least one active surface water drinking water intake. ....	H-2
H-2. Assessment units with nitrate indicator results.....	H-7
H-3. Assessment units with pesticide indicator results. ....	H-8
J-1. Comparison of 2008 and 2010 listing results for watershed assessment units. ....	J-2
J-2. Comparison of 2008 and 2010 listing results for large river assessment units. ....	J-2
J-3. Differences in the 2008 and 2010 listing procedures. ....	J-3
J-4. Steps to transform 2008 list into 2010 list. ....	J-5
J-5. Priority points assigned based on use impairment or other factors (extra points). ....	J-7
J-6. Delisting in watershed assessment units. ....	J-12



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J-7. Delisting in large river assessment units. ....J-13

N-1. Aquifer Types in Ohio, modified from ODNR glacial and bedrock Aquifer Maps  
(ODNR, 2000). ....N-5

N-2. Locations of facilities with documented ground water impacts in Ohio. ....N-10

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## List of Acronyms and Abbreviations

AmphIBI	amphibian index of biotic integrity
AOC	Area of Concern (as identified under the Great Lakes Water Quality Agreement)
AU	assessment unit
BEACH	Beaches Environmental Assessment and Coastal Health (Act)
BMP	best management practice
BUI	Beneficial Use Impairment (as described in Annex 2 of the Great Lakes Water Quality Agreement)
CABB	Center for Applied Bioassessment and Biocriteria
CAFO	Concentrated Animal Feeding Operations
Corps	U.S. Army Corps of Engineers
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CSO	combined sewer overflow
CSP	Conservation Security Program
CWH	coldwater habitat
CWA	Clean Water Act
DDAGW	Division of Drinking and Ground Waters
DDT	dichlorodiphenyltrichloroethane
DEFA	Division of Environmental and Financial Assistance
DES	Division of Environmental Services
DLG	Digital Line Graph
DSW	Division of Surface Water
EAG	External Advisory Group
EPA	Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
EWH	exceptional warmwater habitat
FCA	fish consumption advisory
FFY	federal fiscal year
FWPCA	Federal Water Pollution Control Act
GRP	Grassland Reserve Program
HUC	hydrologic unit code
IR	Integrated Report
kg	kilogram
L	liter
LA	load allocation
LaMP	Lakewide Management Plan
LCI	Lake Condition Index
LEC	(Ohio) Lake Erie Commission
LEPF	(Ohio) Lake Erie Protection Fund
LRAU	large river assessment unit
LRW	limited resource water
LTCP	long-term control plan
MBI	Midwest Biodiversity Institute
MF	membrane filter
mg	Milligram
mi <sup>2</sup>	square miles
MOR	monthly operating data
MPN	most probable number

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MS4	municipal separate storm sewer systems
MWH	modified warmwater habitat
NEORS	Northeast Ohio Regional Sewer District
ng	Nanogram
NHD	National Hydrography Dataset
NOI	notice of intent
NRCS	Natural Resources Conservation Service
NPDES	National Pollutant Discharge Elimination System
NPS	nonpoint source
NSSP	National Shellfish Sanitation Program
OAC	Ohio Administrative Code
ODH	Ohio Department of Health
ODNR	Ohio Department of Natural Resources
ORC	Ohio Revised Code
ORSANCO	Ohio River Valley Water Sanitation Commission
OTMP	Ohio Tributary Monitoring Program
OWDA	Ohio Water Development Authority
OWRC	Ohio Water Resources Council
PAHs	polyaromatic hydrocarbons
ppb	parts per billion
PCB	polychlorinated biphenyls
PDWS	public drinking water supply
PS	point source
PTI	permit to install
PTO	permit to operate
PWS	public water supply
QA	quality assurance
QC	quality control
RF3	Reach File Version 3
RM	river mile
SDWA	Safe Drinking Water Act
SDWIS	Safe Drinking Water Information System
SFY	state fiscal year (July 1 to June 30)
sq mi	square miles
SSM	single-sample maximum
STORET	STorage and RETrieval (a U.S. EPA water quality database)
SWIMS	Surface Water Information Management System
TMDL	total maximum daily load
TOC	total organic carbon
U.S. EPA	United States Environmental Protection Agency
µg	microgram
USC	United States Code
USGS	U.S. Geological Survey
VIBI	vegetation index of biotic integrity
WAUs	watershed assessment unit
WHIP	Wildlife Habitat Incentives Program
WLA	wasteload allocation
WPCLF	Water Pollution Control Loan Fund
WQ	water quality
WQC	Water Quality Certification (Section 401)

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WQMP	Water Quality Management Plan
WQPSD	Water Quality Permit Support Document
WQS	water quality standards
WRP	Wetlands Reserve Program
WRRSP	Water Resource Restoration Sponsor Program
WSRLA	Water Supply Revolving Loan Account
WWH	warmwater habitat
WWTP	wastewater treatment plant

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## Executive Summary

The *Ohio 2010 Integrated Water Quality Monitoring and Assessment Report* summarizes water quality conditions in the State of Ohio. The report satisfies Ohio's water quality reporting requirements under Sections 303(d), 305(b), and 314 of the Clean Water Act. The report was last updated in 2008.

Using methods devised to determine the suitability of waters for four specific uses—aquatic life (fish and aquatic insects), recreation such as boating and swimming, human health impacts related to fish tissue contamination, and public drinking water supplies—available data were compared with water quality goals. The results indicate which waters are meeting goals and which are not. Waters not meeting the goals for one or more of the four types of uses are referred to as *impaired*. The waters found to be impaired are prioritized and scheduled for further study and restoration. The report also includes the monitoring schedule that Ohio EPA plans to follow for the next several years.

The report describes the methods used to judge impairment of each type of use. The methods have evolved in each reporting cycle as the Agency gains access to more data and develops better ways to interpret them.

Results are reported for 1,538 new, smaller watershed units, 38 large river units (in Ohio's 23 rivers that drain more than 500 square miles), and 3 Lake Erie nearshore units. Additional information on streams draining between 50 and 500 square miles is presented. General information on Ohio's water quality is also reported in the form of statistics and progress toward Ohio's "80% attainment of the aquatic life use goal." The report more precisely reflects water quality in Ohio, now assigning waterways a status for each of four beneficial uses instead of a single overall status. This change resulted in a large number of waters being removed from the 2010 303(d) list of impaired waters.

Rivers assessed since the last Integrated Report in 2008 include the lower Little Miami, Mohican, Walhonding, upper Great Miami, Licking and Cuyahoga. All these water bodies demonstrated significant improvement over prior surveys during the mid- to late-1990s.

For the human health use (fish tissue), between one-quarter and one-third of units assessed are in attainment. PCB contamination in fish is the cause of most of the human health impairments in Ohio. Mercury is the second leading cause.

The chemicals of concern causing impairment of the public drinking water supply use include elevated nitrate and atrazine levels. The primary source of both chemicals is nonpoint source runoff from agricultural land use. Additional major sources for nitrate include home and commercial fertilizer application, failing septic systems, unsewered areas and wastewater plant discharges.

The recreation use methodology has changed significantly since the 2008 report, including the change in indicator from fecal coliform to *Escherichia coli*.

Data from the report indicate that the "80% attainment of the aquatic life use by 2010 goal" has been met for large rivers and progress continues on smaller streams. Most water quality impairments are related to modification of the landscape in both urban and agricultural settings. The report introduces new goals for 2020.