

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11

WAU Description

WAU Size (mi²): 147.0

04100001 020

Tenmile Creek; Ottawa River

Integrated Report Assessment Category: 5

Priority Points: 5

Next Scheduled Monitoring: 2014

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C,LRW

Sampling Year(s): 1993, 1996, 2000,

Impairment: Yes (5)

2002

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	13 Site(s)	5 Site(s)						
Primary Tributaries								
5-20 mi ²	8 Site(s)	3 Site(s)	19.0	16.7	64.3			
20-50 mi ²	3 Site(s)	0 Site(s)						
Principal Streams								
50-500 mi ²	13 Site(s)					9	24	67
	20.3 Miles	0.0 Miles	0.00	30.5	69.5			

High Magnitude Causes

Pesticides
Priority Organics
Thermal Modifications
Flow Alteration
Direct Habitat Alterations

High Magnitude Sources

Minor Industrial Point Sources
Combined Sewer Overflow
Nonirrigated Crop Production
Land Development/Suburbanization
Landfills
Flow Reg./Mod. - Development
Removal of Riparian Vegetation - Dev
Streambank Destabilization - Dev
Contaminated Sediments

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 299

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 848

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 20

90th %ile: 1020

Other: A "Dermal Contact Advisory" is in effect for the Ottawa River due to PCB contamination. The area under the advisory is from I-475 north of Wildwood Preserve in Toledo to the mouth at Maumee Bay (Lucas County).

Public Drinking Water Supply Assessment

Location(s): Unnamed trib @RM 1.25 (Ten Mile Creek RM 16.92) [Metamora]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data, Watch List

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 11.80 Stream Miles Impaired: 11.80 Pollutants (Waterbody): PCBs (Ottawa River)

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Significant remediation of problematic sites (including closed landfills) in the lower Ottawa River watershed are actively underway. Site specific monitoring is occurring in the remediated areas on a regular basis. Future monitoring within the entire watershed will be conducted within the normal rotating basin schedule after the cessation of these projects and when sufficient recovery time has elapsed. Recent sampling was conducted in 2002 focusing on the Ottawa River and Sibley Creek in the immediate vicinity of the Dura Landfill. Repeat sampling in the same area was conducted in 2007 as well as additional monitoring in the entire lower reach of the Ottawa River as part of an ongoing Natural Resource Damage Assessment. The 2007 data will be incorporated into the assessment unit and reported in the 2010 Integrated Report. However, reports are now available for the two 2007 projects and can be found at http://www.epa.state.oh.us/dsw/document_index/psdindx.html. Nearly 12 miles of the Ottawa River continue to be listed for fish tissue impairment and a "Do Not Eat" Fish Consumption Advisory remains in effect for the Ottawa River (all species) due to PCBs contamination. The area under the advisory is from I-475 north of Wildwood Preserve in Toledo to the mouth at Maumee Bay. See <http://www.epa.state.oh.us/dsw/fishadvisory/index.html> for more information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 26.5

04100002 030

Bear Creek (River Raisin basin)

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2014

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data			% Attainment			WAU Score		
	Data Available	No. Attaining		Full	Partial	Non	Full	Partial	Non
Secondary Tributaries									
< 5 mi ²	Site(s)	Site(s)							
Primary Tributaries									
5-20 mi ²	Site(s)	Site(s)							
20-50 mi ²	Site(s)	Site(s)							
Principal Streams									
50-500 mi ²	Site(s)								
	Miles	Miles							

High Magnitude Causes

High Magnitude Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 1109

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 2075

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 18

90th %ile: 5420

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

This small basin has never been sampled for biological quality. All data (chemical only) are from the 1980s.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 25.2

04100003 010

East Branch St. Joseph River

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2012

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 1234

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 3650

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 12

90th %ile: 4340

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 3.60 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A small amount of data were collected in this watershed, but there are not enough sampling locations to do a complete assessment.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 14.9

04100003 020

West Branch St. Joseph River

Integrated Report Assessment Category: 5

Priority Points: 2

Next Scheduled Monitoring: 2012

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5-Historical Data)

Stream Miles Monitored: 6.50 Stream Miles Impaired: Pollutants (Waterbody): Mercury (Lake LaSuAn, Lake Laverre, Lake Sue).
 Lake Acres Monitored: 167.6 Lake Acres Impaired: 155.6

WAU Comments

Sampling in the 1990s in this watershed found all sampling locations in full attainment of the designated aquatic life use. As such, this assessment unit was listed as Category 2 (unimpaired) in the 2002 Integrated Report. However, the 2004 Integrated Report assessment of fish tissue data documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 123.5**
 04100003 030 St. Joseph River (East/West Branches to downstream Bear Creek)

Integrated Report Assessment Category: 5 **Priority Points: 4**
Next Scheduled Monitoring: 2012

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C,LRW Sampling Year(s): 1991, 1992, 1997
 Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	1 Site(s)	1 Site(s)	75.0	25.0	0.0			
20-50 mi ²	2 Site(s)	1 Site(s)						
						38	62	0
Principal Streams								
50-500 mi ²	4 Site(s)							
	23.6 Miles	0.0 Miles	0.00	100	0.00			

High Magnitude Causes

Direct Habitat Alterations

High Magnitude Sources

Nonirrigated Crop Production
 Channelization - Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: No (1) Cause: Geometric Mean: 342
 No. of Ambient Sites: 0 No. of Ambient Sampling Records: 0 75th %ile: 528
 No. of NPDES MOR Sites: 3 No. of NPDES MOR Records: 66 90th %ile: 1700
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5-Historical Data)
 Stream Miles Monitored: 23.12 Stream Miles Impaired: 23.12 Pollutants (Waterbody): PCBs (St. Joseph River)
 Lake Acres Monitored: 94.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1992 were used in the 2002 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use. These data have since exceeded the ten-year threshold and are now considered historical. Additionally, the 2004 Integrated Report assessment of fish tissue data documented body burdens of pollutants at levels reflecting a violation(s) of Ohio Water Quality Standards criteria which resulted in listing as impaired for fish consumption. These data, too, are now considered historical. However, while reflecting the current status that no data are available to assess beneficial use status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the U.S. EPA.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 16.8

04100003 050

Fish Creek

Integrated Report Assessment Category: 5

Priority Points: 3

Next Scheduled Monitoring: 2012

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 1999, 2002

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)	100.0	0.0	0.0			
20-50 mi ²	Site(s)	Site(s)						
Principal Streams						72	14	14
50-500 mi ²	3 Site(s) 5.6 Miles	2.4 Miles	43.0	28.5	28.5			

High Magnitude Causes

High Magnitude Sources

Siltation

Nonirrigated Crop Production

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Extensive monitoring has been conducted in Fish Creek since 1991 following a major spill and fish kill originating in Indiana. The Ohio portion of this assessment unit is very small and includes 5.6 miles of mainstem and one small unnamed tributary to Fish Creek (RM 5.39).

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 134.3**
 04100004 010 St. Mary's River (headwaters to downstream Sixmile Creek)

Integrated Report Assessment Category: 5 **Priority Points: 3**
Next Scheduled Monitoring: 2015

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C,LRW Sampling Year(s): 1991
 Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries			0.0	0.0	100			
5-20 mi ²	1 Site(s)	0 Site(s)						
20-50 mi ²	Site(s)	Site(s)				0	0	100
Principal Streams								
50-500 mi ²	6 Site(s)		0.00	0.00	100			
	13.0 Miles	0.0 Miles						

High Magnitude Causes

Flow Alteration
 Direct Habitat Alterations

High Magnitude Sources

Channelization - Agriculture
 Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: No (1) Cause: Geometric Mean: 439
 No. Ambient Sites: 0 No. Ambient Sampling Records: 0 75th %ile: 690
 No. of NPDES MOR Sites: 3 No. of NPDES MOR Records: 273 90th %ile: 1295
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 5.98 Stream Miles Impaired: 5.98 Pollutants (Waterbody): PCBs (St. Marys River)
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1991 were used in the 2002 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use. These data have since exceeded the ten-year threshold and are now considered historical. However, while reflecting the current status that no data are available to assess beneficial use status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the U.S. EPA. The 2006 Integrated Report assessment of available fish tissue data from the St. Marys River documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. A watershed management planning effort of the area surrounding the Indiana portion of the St. Marys River watershed is currently under way. This project is a study of the river, its surrounding landuse, and community resources. The study is being sponsored by the Soil and Water Conservation Districts from Adams, Allen and Wells Counties and funded through the Indiana Department of Environmental Management. The scope of this project includes various water quality assessments and aims to identify areas of critical concern.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 117.0**
 04100004 020 St. Mary's River (downstream Sixmile Creek to downstream Twelvemile
 Creek)
Integrated Report Assessment Category: 5 **Priority Points: 3**
Next Scheduled Monitoring: 2015

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C,LRW Sampling Year(s): 1991, 1999
 Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	0 Site(s)	0.0	0.0	100			
20-50 mi ²	1 Site(s)	0 Site(s)				0	23	77
Principal Streams								
50-500 mi ²	17.8 Miles	0.0 Miles	0.00	47.1	52.9			

High Magnitude Causes

Siltation
 Direct Habitat Alterations

High Magnitude Sources

Nonirrigated Crop Production
 Channelization - Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3) Cause: Geometric Mean:
 No. of Ambient Sites: No. of Ambient Sampling Records: 75th %ile:
 No. of NPDES MOR Sites: No. of NPDES MOR Records: 90th %ile:
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 17.82 Stream Miles Impaired: 17.82 Pollutants (Waterbody): PCBs (St. Marys River)
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1991 were used in the 2002 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use. These data have since exceeded the ten-year threshold and are now considered historical. However, while reflecting the current status that no data are available to assess beneficial use status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the U.S. EPA. The 2006 Integrated Report assessment of available fish tissue data from the St. Marys River documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. A watershed management planning effort of the area surrounding the Indiana portion of the St. Marys River watershed is currently under way. This project is a study of the river, its surrounding landuse, and community resources. The study is being sponsored by the Soil and Water Conservation Districts from Adams, Allen and Wells Counties and funded through the Indiana Department of Environmental Management. The scope of this project includes various water quality assessments and aims to identify areas of critical concern.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 105.3**
 04100006 020 Bean Creek (downstream Lime Creek (Michigan) to downstream Mill
 Creek)
Integrated Report Assessment Category: 5 **Priority Points: 3**
Next Scheduled Monitoring: 2011

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C Sampling Year(s): 1997
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	0 Site(s)	0.0	58.4	41.6			
20-50 mi ²	3 Site(s)	0 Site(s)				50	29	21
Principal Streams								
50-500 mi ²	1 Site(s)							
	9.8 Miles	9.8 Miles	100	0.00	0.00			

High Magnitude Causes

Unknown Toxicity
 Nutrients
 Siltation
 Organic Enrichment/DO
 Direct Habitat Alterations

High Magnitude Sources

Minor Municipal Point Source
 Combined Sewer Overflows
 Nonirrigated Crop Production
 Feedlots (Confined Animal Feeding Oper.)
 Channelization - Ag.
 Removal of Riparian Vegetation - Ag.
 Spills

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3-Indeterminate Data) Cause: Geometric Mean: 908
 No. of Ambient Sites: 1 No. of Ambient Sampling Records: 5 75th %ile: 1400
 No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 4 90th %ile: 2560
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 96.0 Lake Acres Impaired:

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 79.9
04100006 030 Tiffin River (downstream Mill Creek to downstream Leatherwood Creek)

Integrated Report Assessment Category: 5 **Priority Points: 3**
Next Scheduled Monitoring: 2011

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 1997, 2002
Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	4 Site(s)	1 Site(s)	12.5	0.0	87.5			
20-50 mi ²	Site(s)	Site(s)				13	0	87
Principal Streams								
50-500 mi ²	Site(s)	Miles						

High Magnitude Causes

Siltation
Flow Alteration

High Magnitude Sources

Nonirrigated Crop Production

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Unknown (3-Indeterminate Data) Cause: Geometric Mean: 648
No. of Ambient Sites: 0 No. of Ambient Sampling Records: 0 75th %ile: 2100
No. of NPDES MOR Sites: 2 No. of NPDES MOR Records: 36 90th %ile: 4240
Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5-Historical Data)
Stream Miles Monitored: 12.06 Stream Miles Impaired: 12.06 Pollutants (Waterbody): Mercury, PCBs (Tiffin River)
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

The 2006 Integrated Report assessment of available fish tissue data from the Tiffin River documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 105.9

04100006 050

Lick Creek

Integrated Report Assessment Category: 5

Priority Points: 2

Next Scheduled Monitoring: 2011

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C
Impairment: Yes (5)

Sampling Year(s): 1997

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	3 Site(s)	45.0	20.0	35.0			
20-50 mi ²	5 Site(s)	2 Site(s)				22	52	26
Principal Streams								
50-500 mi ²	3 Site(s) 10.1 Miles	0.0 Miles	0.00	83.8	16.2			

High Magnitude Causes

Nutrients
Siltation
Organic Enrichment/DO
Direct Habitat Alterations

High Magnitude Sources

Major Municipal Point Source
Combined Sewer Overflow
Nonirrigated Crop Production
Range Grazing - Riparian
Urban Runoff/Storm Sewers (NPS)
Other Urban Runoff
Dredging - Development

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 408

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 1045

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 67

90th %ile: 2000

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11

WAU Description

WAU Size (mi²): 148.2

04100007 010

Auglaize River (headwaters to downstream Pusheta Creek)

Integrated Report Assessment Category: 5

Priority Points: 5

Next Scheduled Monitoring: 2015

Aquatic Life Use Assessment

Subcategories of ALU: WWH
Impairment: Yes (4A-TMDL)

Sampling Year(s): 2000

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	9 Site(s)	7 Site(s)						
Primary Tributaries								
5-20 mi ²	15 Site(s)	14 Site(s)	92.8	5.5	1.7			
20-50 mi ²	5 Site(s)	5 Site(s)				94	5	1
Principal Streams								
50-500 mi ²	5 Site(s)							
	9.1 Miles	8.7 Miles	95.6	4.40	0.00			

High Magnitude Causes

Cause Unknown
Unknown Toxicity
Nutrients
Siltation
Organic Enrichment/DO
Direct Habitat Alterations

High Magnitude Sources

Combined Sewer Overflows
Domestic Wastewater Lagoon
Nonirrigated Crop Production
Urban Runoff/Storm Sewers (NPS)
Upstream Impoundment
Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (4A-TMDL)
No. Ambient Sites: 0
No. of NPDES MOR Sites: 1
Other:

Cause: Pathogens
No. Ambient Sampling Records: 0
No. of NPDES MOR Records: 35

Geometric Mean: 870
75th %ile: 2300
90th %ile: 7580

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 9.03 Stream Miles Impaired: 9.03 Pollutants (Waterbody): Mercury (Auglaize River)
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing aquatic life and recreation uses in the upper Auglaize River basin was approved by U.S. EPA on September 23, 2004. Monitoring in support of the TMDLs was conducted in 2000. As this assessment unit continues to have a fish tissue impairment, it will remain Category 5 until TMDLs are developed for all pollutants impairing all beneficial uses. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²):** 99.9
 04100007 020 Auglaize River (downstream Pusheta Creek to upstream Jennings Creek)

Integrated Report Assessment Category: 5 **Priority Points: 7**
Next Scheduled Monitoring: 2015

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW Sampling Year(s): 2000
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	6 Site(s)	2 Site(s)						
Primary Tributaries								
5-20 mi ²	5 Site(s)	1 Site(s)	13.3	60.0	26.7			
20-50 mi ²	2 Site(s)	0 Site(s)				57	30	13
Principal Streams								
50-500 mi ²	8 Site(s)							
	36.5 Miles	36.5 Miles	100	0.00	0.00			

High Magnitude Causes

Cause Unknown
 Unknown Toxicity
 Nutrients
 Siltation
 Organic Enrichment/DO
 Flow Alteration
 Direct Habitat Alterations

High Magnitude Sources

Industrial Point Source
 Minor Municipal Point Source
 Nonirrigated Crop Production
 Channelization - Agriculture
 Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (4A-TMDL) Cause: Pathogens Geometric Mean: 967
 No. Ambient Sites: 0 No. Ambient Sampling Records: 0 75th %ile: 3500
 No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 19 90th %ile: 10260
 Other:

Public Drinking Water Supply Assessment

Location(s): Auglaize River @RM 64.58 (Agerter Rd) [Lima]

Impairment: Unknown (3-Insufficient Data) Nitrate Indicator: Insufficient Data, Watch List
 Cause: Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 36.55 Stream Miles Impaired: 36.55 Pollutants (Waterbody): Mercury (Auglaize River)
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing aquatic life and recreation uses in the upper Auglaize River basin was approved by U.S. EPA on September 23, 2004. Monitoring in support of the TMDLs was conducted in 2000. As this assessment unit continues to have a fish tissue impairment, it will remain Category 5 until TMDLs are developed for all pollutants impairing all beneficial uses. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 134.3

04100007 030

Ottawa River (headwaters to upstream Little Ottawa River)

Integrated Report Assessment Category: 5

Priority Points: 4

Next Scheduled Monitoring: 2010

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C
Impairment: Yes (5-Historical)

Sampling Year(s): 1996, 2001

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	1 Site(s)	0 Site(s)	0.0	0.0	100			
20-50 mi ²	Site(s)	Site(s)				15	12	73
Principal Streams								
50-500 mi ²	19 Site(s)							
	11.8 Miles	3.5 Miles	29.7	23.7	46.6			

High Magnitude Causes

Priority Organics
Unionized Ammonia
Organic Enrichment/DO

High Magnitude Sources

Industrial Point Source
Municipal Point Source
Combined Sewer Overflow
Urban Runoff/Storm Sewers (NPS)

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 376

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 1038

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 68

90th %ile: 2330

Other:

Public Drinking Water Supply Assessment

Location(s): Ottawa River @RMs 42.60 (Roush Rd) and 43.45 (upstream of lowhead dam at Metzger Rd) [Lima]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data, Watch List

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5-Historical Data)

Stream Miles Monitored: 10.80 Stream Miles Impaired: 10.80 Pollutants (Waterbody): PCBs (Ottawa River)

Lake Acres Monitored: 689.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1996 were used in the 2002 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use. These data have since exceeded the ten-year threshold and are now considered historical. Additionally, the 2004 Integrated Report assessment of fish tissue data documented body burdens of pollutants at levels reflecting a violation(s) of Ohio Water Quality Standards criteria which resulted in listing as impaired for fish consumption. These data, too, are now considered historical. However, while reflecting the current status that no data are available to assess beneficial use status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the U.S. EPA.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²):** 106.1
 04100007 040 Ottawa River (upstream Little Ottawa River to upstream Sugar Creek)

Integrated Report Assessment Category: 5 **Priority Points: 6**
Next Scheduled Monitoring: 2010

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C Sampling Year(s): 1996
 Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	4 Site(s)	0 Site(s)	0.0	50.0	50.0			
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	11 Site(s)					3	45	52
	28.7 Miles	1.4 Miles	4.90	41.1	54.0			

High Magnitude Causes

Unknown Toxicity
 Nutrients
 Organic Enrichment/DO
 Direct Habitat Alterations

High Magnitude Sources

Industrial Point Source
 Municipal Point Source
 Combined Sewer Overflows
 Urban Runoff/Storm Sewers (NPS)
 Channelization - Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 462
 No. of Ambient Sites: 0 No. of Ambient Sampling Records: 0 75th %ile: 1150
 No. of NPDES MOR Sites: 4 No. of NPDES MOR Records: 155 90th %ile: 2460
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5-Historical Data)
 Stream Miles Monitored: 28.73 Stream Miles Impaired: 28.73 Pollutants (Waterbody): PCBs (Ottawa River)
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1996 were used in the 2002 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use. These data have since exceeded the ten-year threshold and are now considered historical. Additionally, the 2004 Integrated Report assessment of fish tissue data documented body burdens of pollutants at levels reflecting a violation(s) of Ohio Water Quality Standards criteria which resulted in listing as impaired for fish consumption. These data, too, are now considered historical. However, while reflecting the current status that no data are available to assess beneficial use status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the U.S. EPA.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 143.0**
 04100007 060 Auglaize River (upst. Jennings Cr. to upst. L. Auglaize R.); excluding
 Auglaize R. dst. Ottawa R.

Integrated Report Assessment Category: 5 **Priority Points: 5**
Next Scheduled Monitoring: 2015

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 2000
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	3 Site(s)						
Primary Tributaries								
5-20 mi ²	9 Site(s)	7 Site(s)	61.1	0.0	38.9			
20-50 mi ²	3 Site(s)	1 Site(s)				81	0	19
Principal Streams								
50-500 mi ²	3 Site(s)							
	14.8 Miles	14.8 Miles	100	0.00	0.00			

High Magnitude Causes

Unionized Ammonia
 Nutrients
 Siltation
 Organic Enrichment/DO
 Flow Alteration
 Direct Habitat Alterations

High Magnitude Sources

Minor Municipal Point Source
 Nonirrigated Crop Production
 Channelization - Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (4A-TMDL) Cause: Pathogens Geometric Mean: 760
 No. of Ambient Sites: 11 No. of Ambient Sampling Records: 22 75th %ile: 1775
 No. of NPDES MOR Sites: 0 No. of NPDES MOR Records: 0 90th %ile: 2450
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 13.76 Stream Miles Impaired: 13.76 Pollutants (Waterbody): Mercury (Auglaize River)
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing aquatic life and recreation uses in the upper Auglaize River basin was approved by U.S. EPA on September 23, 2004. Monitoring in support of the TMDLs was conducted in 2000. As this assessment unit continues to have a fish tissue impairment, it will remain Category 5 until TMDLs are developed for all pollutants impairing all beneficial uses. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 124.0

04100007 070

Little Auglaize River (headwaters to upstream Dog Creek)

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2010

Aquatic Life Use Assessment

Subcategories of ALU: MWH-C,LRW
Impairment: Unknown (3)

Sampling Year(s):

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)	Miles						
<u>High Magnitude Causes</u>			<u>High Magnitude Sources</u>					

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 95

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 120

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 17

90th %ile: 191

Other:

Public Drinking Water Supply Assessment

Location(s): Little Auglaize River @RM 23.40 [Delphos]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A small amount of data were collected in this watershed, but there are not enough sampling locations to do a complete assessment. The vast majority of the data are from 1983. Only reference sites have been sampled since then.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 106.2

04100007 080

Prairie Creek

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2010

Aquatic Life Use Assessment

Subcategories of ALU: MWH-C

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Data Available	Raw Data			% Attainment			WAU Score		
		No.	Attaining		Full	Partial	Non	Full	Partial	Non
Secondary Tributaries										
< 5 mi ²		Site(s)	Site(s)							
Primary Tributaries										
5-20 mi ²		Site(s)	Site(s)							
20-50 mi ²		Site(s)	Site(s)							
Principal Streams										
50-500 mi ²		Site(s)								
		Miles	Miles							

High Magnitude Causes

High Magnitude Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 1088

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 1430

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 10

90th %ile: 2165

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

The vast majority of the data in this watershed are from 1983. Only one site (biological reference site on Prairie Creek) has been sampled since then. Another survey of the watershed is needed to reassess the status.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 97.6
04100007 110 Powell Creek

Integrated Report Assessment Category: 5 **Priority Points: 6**
Next Scheduled Monitoring: 2015

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C,LRW Sampling Year(s): 1997, 1999, 2000
Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	2 Site(s)	50.0	12.5	37.5			
20-50 mi ²	4 Site(s)	1 Site(s)						
						37	6	57
Principal Streams								
50-500 mi ²	3 Site(s) 9.2 Miles	2.2 Miles	24.1	0.00	75.9			

High Magnitude Causes

Nutrients
Siltation
Organic Enrichment/DO
Flow Alteration
Direct Habitat Alterations

High Magnitude Sources

Nonirrigated Crop Production
Hydromodification - Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (5) Cause: Pathogens Geometric Mean: 2299
No. of Ambient Sites: 6 No. of Ambient Sampling Records: 6 75th %ile: 8063
No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 20 90th %ile: 18070
Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

TMDLs for pollutants causing impairments in the Powell Creek watershed are expected to be completed by a U.S. EPA contractor in 2007. Monitoring, conducted in the watershed in 1997, 1999, and 2000, included sites on Powell Creek, North Powell Creek, South Powell Creek, and two small tributaries.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 178.7**
 04100007 120 Auglaize River (Flatrock Creek to mouth); excluding Powell Creek and
 Auglaize R. mainstem
Integrated Report Assessment Category: 5 **Priority Points: 2**
Next Scheduled Monitoring: 2015

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C Sampling Year(s): 1991, 1996
 Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	9 Site(s)					7	68	25
	28.9 Miles	2.1 Miles	7.30	68.2	24.5			

High Magnitude Causes

Siltation
 Direct Habitat Alterations

High Magnitude Sources

Nonirrigated Crop Production
 Channelization - Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3-Indeterminate Data) Cause: Geometric Mean: 375
 No. of Ambient Sites: 0 No. of Ambient Sampling Records: 0 75th %ile: 800
 No. of NPDES MOR Sites: 2 No. of NPDES MOR Records: 37 90th %ile: 1920
 Other:

Public Drinking Water Supply Assessment

Location(s): Flat Rock Creek @RM 14.13 [Paulding]

Impairment: Unknown (3-Insufficient Data) Nitrate Indicator: Insufficient Data
 Cause: Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1991 were used in the 2002 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use. These data have since exceeded the ten-year threshold and are now considered historical. However, while reflecting the current status that no data are available to assess beneficial use status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the USEPA.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²):** 133.4
 04100008 020 Blanchard River (downstream Potato Run to upstream Eagle Creek)

Integrated Report Assessment Category: 5 **Priority Points: 9**
Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C Sampling Year(s): 2005
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	3 Site(s)	3 Site(s)	50.0	25.0	25.0			
20-50 mi ²	2 Site(s)	0 Site(s)						
						53	35	12
Principal Streams								
50-500 mi ²	3 Site(s)							
	18.2 Miles	10.0 Miles	54.9	45.1	0.00			

High Magnitude Causes

Nutrient/Eutrophication Biological Indicators
 Organic Enrichment (Sewage) Biological Indicators
 Temperature, Water
 Nitrate/Nitrite (Nitrite + Nitrate as N)
 Phosphorus (Total)
 Direct Habitat Alterations

High Magnitude Sources

Crop Production with Subsurface Drainage
 Channelization

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 249
 No. Ambient Sites: 16 No. Ambient Sampling Records: 110 75th %ile: 600
 No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 56 90th %ile: 4150
 Other:

Public Drinking Water Supply Assessment

Location(s): Blanchard River @RMs 58.72, 62.43 and 65.20 [Findlay]

Impairment: Unknown (3-Insufficient Data) Nitrate Indicator: Insufficient Data
 Cause: Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 18.17 Stream Miles Impaired: 18.17 Pollutants (Waterbody): PCBs (Blanchard River)
 Lake Acres Monitored: 186.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2005 as part of monitoring in the Blanchard River watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included the Blanchard River, Brights Ditch, The Outlet, and Lye Creek. For the 2006 Integrated Report, 2005 bacteria data were available which resulted in an impaired recreation use assessment. Biological and chemical data for assessment of aquatic life uses were not available for the 2006 report but are included in the 2008 Integrated Report. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information. A report on the 2005 survey is available at www.epa.state.oh.us/dsw/document_index/psdindx.html (EAS/2007-6-2). Additionally, the 2006 Integrated Report assessment of available fish tissue data from the Blanchard River documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²):** 115.0
 04100008 030 Blanchard River (upstream Eagle Creek to upstream Ottawa Creek)

Integrated Report Assessment Category: 5 **Priority Points: 6**
Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C Sampling Year(s): 2001, 2002, 2005
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	5 Site(s)	2 Site(s)	25.0	25.0	50.0			
20-50 mi ²	3 Site(s)	0 Site(s)						
						39	30	31
Principal Streams								
50-500 mi ²	8 Site(s)							
	21.0 Miles	10.9 Miles	52.0	35.4	12.6			

High Magnitude Causes

Direct Habitat Alterations
 Nitrate/Nitrite (Nitrite + Nitrate as N)
 Temperature, Water
 Organic Enrichment (Sewage) Biological Indicators
 Nutrient/Eutrophication Biological Indicators
 Sedimentation/Siltation
 Ammonia (Total)
 Low Flow Alterations
 Phosphorus (Total)

High Magnitude Sources

Channelization
 Combined Sewer Overflows
 Unspecified Urban Stormwater
 Upstream Impoundments
 Dam or Impoundment
 Crop Production with Subsurface Drainage
 Municipal Point Source Discharges

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 756
 No. Ambient Sites: 17 No. Ambient Sampling Records: 145 75th %ile: 1700
 No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 20 90th %ile: 4840
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 18.96 Stream Miles Impaired: 12.46 Pollutants (Waterbody): PCBs (Blanchard River)
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2005 as part of monitoring in the Blanchard River watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included the Blanchard River, Eagle Creek, and Aurand Run. For the 2006 Integrated Report, 2005 bacteria data were available which resulted in an impaired recreation use assessment. Biological and chemical data for assessment of aquatic life uses were not available for the 2006 report but are included in the 2008 Integrated Report. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information. A report on the 2005 survey is available at www.epa.state.oh.us/dsw/document_index/psdindx.html (EAS/2007-6-2). Additionally, the 2006 Integrated Report assessment of available fish tissue data from the Blanchard River documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²): 148.9**
 04100008 040 Blanchard River (upst. Ottawa Cr. to upst. Riley Cr.); excluding Blanchard
 R. mainstem dst. Dukes R.

Integrated Report Assessment Category: 5 **Priority Points: 9**
Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C Sampling Year(s): 2005
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	10 Site(s)	5 Site(s)	25.0	65.0	10.0			
20-50 mi ²	1 Site(s)	0 Site(s)				54	41	5
Principal Streams								
50-500 mi ²	3 Site(s)							
	15.9 Miles	13.3 Miles	83.6	16.4	0.00			

High Magnitude Causes

Direct Habitat Alterations
 Sedimentation/Siltation
 Nitrate/Nitrite (Nitrite + Nitrate as N)
 Oxygen, Dissolved
 Nutrient/Eutrophication Biological Indicators
 Organic Enrichment (Sewage) Biological Indicators

High Magnitude Sources

Channelization
 Livestock (Grazing or Feeding Operations)
 Crop Production with Subsurface Drainage

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 583
 No. Ambient Sites: 18 No. Ambient Sampling Records: 112 75th %ile: 1600
 No. of NPDES MOR Sites: 0 No. of NPDES MOR Records: 0 90th %ile: 4780
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 9.99 Stream Miles Impaired: 9.99 Pollutants (Waterbody): PCBs (Blanchard River)
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2005 as part of monitoring in the Blanchard River watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included the Blanchard River, Tiderishi Creek, and Ottawa Creek. For the 2006 Integrated Report, 2005 bacteria data were available which resulted in an impaired recreation use assessment. Biological and chemical data for assessment of aquatic life uses were not available for the 2006 report but are included in the 2008 Integrated Report. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information. A report on the 2005 survey is available at www.epa.state.oh.us/dsw/document_index/psdindx.html (EAS/2007-6-2). Additionally, the 2006 Integrated Report assessment of available fish tissue data from the Blanchard River documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11

WAU Description

WAU Size (mi²): 85.6

04100008 050

Riley Creek

Integrated Report Assessment Category: 5

Priority Points: 4

Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C

Sampling Year(s): 2005

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	9 Site(s)	0 Site(s)	0.0	41.7	58.3			
20-50 mi ²	2 Site(s)	0 Site(s)				7	51	42
Principal Streams								
50-500 mi ²	4 Site(s)							
	15.3 Miles	2.0 Miles	13.1	60.8	26.1			

High Magnitude Causes

Organic Enrichment (Sewage) Biological Indicators
Phosphorus (Total)
Sedimentation/Siltation
Temperature, Water
Nitrate/Nitrite (Nitrite + Nitrate as N)
Nutrient/Eutrophication Biological Indicators
Oxygen, Dissolved
Direct Habitat Alterations
Low Flow Alterations

High Magnitude Sources

Crop Production with Subsurface Drainage
Dam or Impoundment
Municipal Point Source Discharges
Combined Sewer Overflows
Urban Runoff/Storm Sewers
Channelization
Streambank Modifications/Destabilization

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 730

No. Ambient Sites: 16

No. Ambient Sampling Records: 118

75th %ile: 2200

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 51

90th %ile: 8140

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2005 as part of monitoring in the Blanchard River watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included Riley Creek and Little Riley Creek. For the 2006 Integrated Report, 2005 bacteria data were available which resulted in an impaired recreation use assessment. Biological and chemical data for assessment of aquatic life uses were not available for the 2006 report but are included in the 2008 Integrated Report. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information. A report on the 2005 survey is available at www.epa.state.oh.us/dsw/document_index/psdindx.html (EAS/2007-6-2).

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²): 147.3**
 04100008 060 Blanchard River (downstream Riley Creek to mouth); excluding Blanchard
 R. mainstem

Integrated Report Assessment Category: 5 **Priority Points: 6**
Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C Sampling Year(s): 2005
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	3 Site(s)	75.0	0.0	25.0			
20-50 mi ²	2 Site(s)	2 Site(s)				75	0	25
Principal Streams								
50-500 mi ²	Site(s)	Miles						

High Magnitude Causes

Ammonia (Total)
 Direct Habitat Alterations
 Nitrate/Nitrite (Nitrite + Nitrate as N)
 Organic Enrichment (Sewage) Biological Indicators
 Oxygen, Dissolved
 Phosphorus (Total)
 Low Flow Alterations
 Sedimentation/Siltation

High Magnitude Sources

Channelization
 Package Plant or Other Permitted Small Flow Discharges
 Crop Production with Subsurface Drainage
 Municipal Point Source Discharges

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 703
 No. Ambient Sites: 11 No. Ambient Sampling Records: 73 75th %ile: 2400
 No. of NPDES MOR Sites: 0 No. of NPDES MOR Records: 0 90th %ile: 5540
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2005 as part of monitoring in the Blanchard River watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included Cranberry Creek, Caton Creek, and Bear Creek. For the 2006 Integrated Report, 2005 bacteria data were available which resulted in an impaired recreation use assessment. Biological and chemical data for assessment of aquatic life uses were not available for the 2006 report but are included in the 2008 Integrated Report. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information. A report on the 2005 survey is available at www.epa.state.oh.us/dsw/document_index/psdindx.html (EAS/2007-6-2).

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 149.1

04100009 020

South Turkeyfoot Creek

Integrated Report Assessment Category: 5

Priority Points: 1

Next Scheduled Monitoring: 2016

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 1997

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	4 Site(s)	0 Site(s)	0.0	37.5	62.5			
20-50 mi ²	1 Site(s)	0 Site(s)				12	32	56
Principal Streams								
50-500 mi ²	3 Site(s) 14.4 Miles	3.5 Miles	24.4	26.8	48.8			

High Magnitude Causes

Siltation
Flow Alteration
Direct Habitat Alterations

High Magnitude Sources

Nonirrigated Crop Production
Channelization - Agriculture
Removal of Riparian Vegetation - Ag.
Streambank Destabilization - Ag.

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 265

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 433

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 14

90th %ile: 483

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 64.7

04100009 040

Bad Creek

Integrated Report Assessment Category: 5

Priority Points: 1

Next Scheduled Monitoring: 2016

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 1997

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	1 Site(s)	0 Site(s)	0.0	0.0	100			
20-50 mi ²	3 Site(s)	0 Site(s)				0	39	61
Principal Streams								
50-500 mi ²	3 Site(s) 8.1 Miles	0.0 Miles	0.00	78.4	21.6			

High Magnitude Causes

Unionized Ammonia
Siltation
Organic Enrichment/DO
Flow Alteration
Direct Habitat Alterations

High Magnitude Sources

Municipal Point Source
Combined Sewer Overflows
Nonirrigated Crop Production
Channelization - Agriculture
Removal of Riparian Vegetation - Ag.
Streambank Destabilization - Ag.

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): Bad Creek @RM 17.0 [Delta]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 89.0 Lake Acres Impaired:

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 83.7

04100009 060 Maumee River (downstream Beaver Cr. to downstream N. Granger Island); excluding Maumee R. mainstem

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2016

Aquatic Life Use Assessment

Subcategories of ALU: WWH
Impairment: Unknown (3)

Sampling Year(s):

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Unknown (3)
No. Ambient Sites:
No. of NPDES MOR Sites:
Other:

Cause:
No. Ambient Sampling Records:
No. of NPDES MOR Records:

Geometric Mean:
75th %ile:
90th %ile:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
Stream Miles Monitored: 0.00 Stream Miles Impaired:
Lake Acres Monitored: 0.0 Lake Acres Impaired:

Pollutants (Waterbody):

WAU Comments

No recent data have been collected in this watershed.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 95.7

04100009 070

Swan Creek (headwaters to upstream Blue Creek)

Integrated Report Assessment Category: 5

Priority Points: 3

Next Scheduled Monitoring: 2022

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 2006

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	1 Site(s)	8.3	66.7	25.0			
20-50 mi ²	3 Site(s)	0 Site(s)				4	83	13
Principal Streams								
50-500 mi ²	1 Site(s)							
	8.4 Miles	0.0 Miles	0.00	100	0.00			

High Magnitude Causes

Sedimentation/Siltation
Direct Habitat Alterations
Nitrate/Nitrite (Nitrite + Nitrate as N)
Physical Substrate Habitat Alterations
Phosphorus (Total)

High Magnitude Sources

Crop Production with Subsurface Drainage
Channelization
On-Site Treatment Systems (Septic Systems and Similar Decentralized Systems)
Historic Bottom Deposits (Not Sediment)
Municipal Point Source Discharges
Sewage Discharges in Unsewered Areas
Golf Courses

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 212

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 1400

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 20

90th %ile: 2040

Other:

Public Drinking Water Supply Assessment

Location(s): Swan Creek @RM 30.84 [Swanton]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data, Watch List

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2006 as part of monitoring in the Swan Creek watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included Swan Creek and Ai Creek. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 108.3

04100009 080

Swan Creek (upstream Blue Creek to mouth)

Integrated Report Assessment Category: 5

Priority Points: 1

Next Scheduled Monitoring: 2022

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 2006

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	1 Site(s)	8.3	25.0	66.7			
20-50 mi ²	3 Site(s)	0 Site(s)				25	42	33
Principal Streams								
50-500 mi ²	7 Site(s)							
	22.2 Miles	9.3 Miles	41.9	58.1	0.00			

High Magnitude Causes

Sedimentation/Siltation
 Direct Habitat Alterations
 Nitrate/Nitrite (Nitrite + Nitrate as N)
 Priority Organics
 Sediment Screening Value (Exceedence)
 Aluminum
 Polycyclic Aromatic Hydrocarbons (PAHs)

High Magnitude Sources

Crop Production with Subsurface Drainage
 Sewage Discharges in Unsewered Areas
 Urban Runoff/Storm Sewers
 Dam or Impoundment
 Upstream Impoundments
 Combined Sewer Overflows
 Sand/Gravel/Rock Mining or Quarries
 Impervious Surface/Parking Lot Runoff

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 22.60 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2006 as part of monitoring in the Swan Creek watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included Swan Creek, Blue Creek, and Wolf Creek. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 76.6
 04100009 090 Maumee River (downstream N. Granger Island to mouth); excluding
 Maumee R. mainstem

Integrated Report Assessment Category: 5 **Priority Points: 1**
Next Scheduled Monitoring: 2022

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 1997, 2006
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	4 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	1 Site(s)	25.0	25.0	50.0			
20-50 mi ²	Site(s)	Site(s)				25	25	50
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

Sedimentation/Siltation
 Direct Habitat Alterations

High Magnitude Sources

Channelization
 Habitat Modification - other than Hydromodification
 Streambank Modifications/Destabilization
 Urban Runoff/Storm Sewers

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3) Cause: Geometric Mean:
 No. of Ambient Sites: No. of Ambient Sampling Records: 75th %ile:
 No. of NPDES MOR Sites: No. of NPDES MOR Records: 90th %ile:
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)
 Stream Miles Monitored: 6.40 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 8.3 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2006 as part of monitoring in lower Maumee River tributary watersheds to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included Delaware Creek, Grassy Creek, and the Grassy Creek Diversion. Duck Creek was sampled in 1997 and is included in the assessment. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 204.7

04100010 010

Lake Erie tributaries (East of Maumee River to west of Toussaint River)

Integrated Report Assessment Category: 5

Priority Points: 1

Next Scheduled Monitoring: 2008

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C,LRW

Sampling Year(s): 1993, 1995, 1997,

Impairment: Yes (5-Historical)

2006

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	11 Site(s)	2 Site(s)						
Primary Tributaries								
5-20 mi ²	14 Site(s)	0 Site(s)	4.5	0.0	95.5			
20-50 mi ²	8 Site(s)	0 Site(s)						
						5	0	95
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

Unknown Toxicity
Nutrient/Eutrophication Biological Indicators
Sedimentation/Siltation
Other Flow Regime Alterations
Direct Habitat Alterations
Oil and Grease
Arsenic
Polycyclic Aromatic Hydrocarbons (PAHs)
Sediment Screening Value (Exceedence)

High Magnitude Sources

Industrial Point Source Discharges
Nonirrigated Crop Production
Landfills
Channelization
Dredging
Loss of Riparian Vegetation
Streambank Modifications/Destabilization
Spills
Commercial Districts (Industrial Parks)
Sediment Resuspension (Contaminated Sediments)

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. of Ambient Sites:

No. of Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 15.30 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Most aquatic life data for this assessment unit were collected in 1993. These data have exceeded the ten-year threshold and are now considered historical. Principal streams sampled included Cedar Creek, Crane Creek, Turtle Creek, and Otter Creek. Very limited sampling in 1997 and 2006 was conducted at several Otter Creek sites and confirmed similar aquatic life status as assessed in 1993. The assessment unit will remain Category 5 as listed in the 2002 Integrated Report until TMDLs for all beneficial use impairments are completed and approved by the U.S. EPA. Comprehensive chemical, physical, and biological monitoring is scheduled in this assessment unit in 2008 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 143.1

04100010 020

Toussaint Creek

Integrated Report Assessment Category: 5

Priority Points: 5

Next Scheduled Monitoring: 2018

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH

Sampling Year(s): 2002, 2003

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries			52.2	0.0	47.8			
5-20 mi ²	9 Site(s)	4 Site(s)						
20-50 mi ²	5 Site(s)	3 Site(s)				49	6	45
Principal Streams								
50-500 mi ²	25.1 Miles	11.6 Miles	46.2	11.6	42.2			

High Magnitude Causes

Direct Habitat Alterations
Nutrients
Organic Enrichment/DO
Siltation
Cause Unknown

High Magnitude Sources

Removal of Riparian Vegetation-Agriculture
Channelization-Agriculture
Onsite Wastewater Systems (Septic Tanks)
Minor Municipal Point Source
Nonirrigated Crop Production
Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 416

No. of Ambient Sites: 19

No. of Ambient Sampling Records: 60

75th %ile: 1183

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 26

90th %ile: 2100

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 21.90 Stream Miles Impaired: 21.90 Pollutants (Waterbody): PCBs (Toussaint

Lake Acres Monitored: 0.0 Lake Acres Impaired: Creek)

WAU Comments

TMDLs for pollutants impairing beneficial uses (aquatic life) in the Toussaint Creek basin were approved by U.S. EPA on September 22, 2006. Chemical, physical, and biological monitoring in support of the TMDL development was conducted in 2003. A report on the findings of the biological and water quality survey can be found at: www.epa.state.oh.us/dsw/document_index/psdindx.html. The 2006 Integrated Report assessment of available bacteria data indicated violations of Ohio Water Quality Standards and an impairment of the designated Primary Contact Recreation use. Fish tissue data from Toussaint Creek documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. The assessment unit will remain Category 5 until TMDLs are developed for all pollutants impairing all designated beneficial uses. See <http://www.epa.state.oh.us/dsw/tmdl/ToussaintRiverTMDL.html> for more information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 168.6**
 04100010 030 Middle Branch Portage River (headwaters to downstream Rocky Ford
 Creek)
Integrated Report Assessment Category: 5 **Priority Points: 6**
Next Scheduled Monitoring: 2008

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW Sampling Year(s): 1993, 1994, 1999
 Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)	25.0	25.0	50.0			
20-50 mi ²	4 Site(s)	1 Site(s)				23	52	25
Principal Streams								
50-500 mi ²	3 Site(s)							
	4.6 Miles	1.0 Miles	21.7	78.3	0.00			

High Magnitude Causes

Siltation
 Organic Enrichment/DO
 Turbidity

High Magnitude Sources

Combined Sewer Overflows
 Highway/Road/Bridge/Sewer Line
 Onsite Wastewater Systems (Septic Tanks)
 Upstream Impoundment
 Bridge Construction

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 248
 No. Ambient Sites: 2 No. Ambient Sampling Records: 6 75th %ile: 1200
 No. of NPDES MOR Sites: 2 No. of NPDES MOR Records: 64 90th %ile: 2675
 Other:

Public Drinking Water Supply Assessment

Location(s): Rader Creek @RM 13.57 [McComb]; Rocky Ford Creek @RMs 10.66 and 11.10 [North Baltimore]

Impairment: Unknown (3-Insufficient Data) Nitrate Indicator: Insufficient Data, Watch List
 Cause: Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
 Stream Miles Monitored: 13.07 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 55.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1993 and 1994 were used in the 2002 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use. While some data from 1999 are available, most data have exceeded the ten-year threshold and are now considered historical. However, while reflecting the current status that insufficient data are available to assess beneficial use status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the U.S. EPA. Comprehensive chemical, physical, and biological monitoring is scheduled in this assessment unit in 2008 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 87.1
04100010 060 Portage River (downstream North Branch to downstream Sugar Creek)

Integrated Report Assessment Category: 5 **Priority Points: 5**
Next Scheduled Monitoring: 2008

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 1994
Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)	50.0	0.0	50.0			
20-50 mi ²	2 Site(s)	1 Site(s)				73	2	25
Principal Streams								
50-500 mi ²	11 Site(s)							
	25.6 Miles	24.6 Miles	96.2	3.80	0.00			

High Magnitude Causes

Siltation
Organic Enrichment/DO

High Magnitude Sources

Nonirrigated Crop Production
Channelization - Agriculture
Drainage/Filling of Wetland - Ag.

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: No (1) Cause: Geometric Mean: 274
No. of Ambient Sites: 2 No. of Ambient Sampling Records: 22 75th %ile: 581
No. of NPDES MOR Sites: 3 No. of NPDES MOR Records: 64 90th %ile: 1500
Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5-Historical Data)
Stream Miles Monitored: 6.60 Stream Miles Impaired: 6.60 Pollutants (Waterbody): PCBs (Portage River)
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1994 were used in the 2002 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use. These data, as well as available fish tissue data used to determine fish consumption status, have exceeded the ten-year threshold and are now considered historical. However, while reflecting the current status that insufficient data are available to assess aquatic life use and fish consumption status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments (aquatic life, recreation, and fish consumption) are completed and approved by the U.S. EPA. Comprehensive chemical, physical, and biological monitoring is scheduled in this assessment unit in 2008 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 136.4
 04100011 010 Muddy Creek; Lake Erie tributaries (Muddy Creek to Marblehead)

Integrated Report Assessment Category: 3 **Priority Points:**
Next Scheduled Monitoring: 2009

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s):
 Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3-Indeterminate Data) Cause:
 No. Ambient Sites: 0 No. Ambient Sampling Records: 0 Geometric Mean: 680
 No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 12 75th %ile: 1713
 Other: 90th %ile: 9220

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
 Stream Miles Monitored: 21.30 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 137.3
 04100011 020 Sandusky River (headwaters to upstream Broken Sword Creek)

Integrated Report Assessment Category: 5 **Priority Points: 2**
Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 2001
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	10 Site(s)	4 Site(s)						
Primary Tributaries								
5-20 mi ²	7 Site(s)	2 Site(s)	17.2	19.1	63.7			
20-50 mi ²	3 Site(s)	0 Site(s)						
						32	33	35
Principal Streams								
50-500 mi ²	6 Site(s)							
	22.1 Miles	10.4 Miles	47.1	46.6	6.30			

High Magnitude Causes

Siltation
 Nutrients
 Organic Enrichment/DO
 Flow Alteration

High Magnitude Sources

Major Municipal Point Source
 Combined Sewer Overflows
 Nonirrigated Crop Production
 Onsite Wastewater Systems (Septic Tanks)
 Flow Regulation/Modification-Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact Cause: Pathogens Geometric Mean: 1125
 Impairment: Yes (4A-TMDL) No. Ambient Sampling Records: 10 75th %ile: 7000
 No. Ambient Sites: 5 No. of NPDES MOR Records: 207 90th %ile: 14100
 No. of NPDES MOR Sites: 2
 Other:

Public Drinking Water Supply Assessment

Location(s): Sandusky River @RM 115.4 [Bucyrus]

Impairment: Unknown (3-Insufficient Data) Nitrate Indicator: Insufficient Data
 Cause: Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 21.72 Stream Miles Impaired: 21.72 Pollutants (Waterbody): PCBs (Sandusky River)
 Lake Acres Monitored: 181.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the upper Sandusky River basin was approved by U.S. EPA on September 29, 2004. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDL was conducted in 2001. A report on the findings of the 2001 biological and water quality survey can be found at www.epa.state.oh.us/dsw/document_index/psdindx.html. As this assessment unit continues to have a fish consumption impairment, it will remain Category 5 until TMDLs are developed for all pollutants impairing all beneficial uses.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 94.5

04100011 030

Broken Sword Creek

Integrated Report Assessment Category: 4A

Priority Points:

Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 2001

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	4 Site(s)	2 Site(s)						
Primary Tributaries								
5-20 mi ²	3 Site(s)	1 Site(s)	54.2	0.0	45.8			
20-50 mi ²	3 Site(s)	2 Site(s)				71	6	23
Principal Streams								
50-500 mi ²	4 Site(s) 15.8 Miles	13.8 Miles	87.3	12.7	0.00			

High Magnitude Causes

Siltation
Nutrients
Flow Alteration
Direct Habitat Alterations

High Magnitude Sources

Nonirrigated Crop Production
Channelization - Agriculture
Flow Regulation/Modification-Agriculture
Spills

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (4A-TMDL)

Cause: Pathogens

Geometric Mean: 2207

No. Ambient Sites: 2

No. Ambient Sampling Records: 4

75th %ile: 3950

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90th %ile: 4220

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the upper Sandusky River basin was approved by U.S. EPA on September 29, 2004. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDL was conducted in 2001. A report on the findings of the 2001 biological and water quality survey can be found at www.epa.state.oh.us/dsw/document_index/psdindx.html.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 171.6

04100011 050

Tymochtee Creek (headwaters to downstream Warpole Creek)

Integrated Report Assessment Category: 4A

Priority Points:

Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C

Sampling Year(s): 2001

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	5 Site(s)	3 Site(s)						
Primary Tributaries								
5-20 mi ²	9 Site(s)	4 Site(s)	26.1	0.0	73.9			
20-50 mi ²	2 Site(s)	0 Site(s)				13	20	67
Principal Streams								
50-500 mi ²	3 Site(s)							
	19.3 Miles	0.0 Miles	0.00	40.4	59.6			

High Magnitude Causes

Nutrients
Siltation
Organic Enrichment/DO
Flow Alteration

High Magnitude Sources

Nonirrigated Crop Production
Flow Regulation/Modification-Agriculture
Onsite Wastewater Systems (Septic Tanks)
Spills

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (4A-TMDL)

Cause: Pathogens

Geometric Mean: 7777

No. Ambient Sites: 1

No. Ambient Sampling Records: 4

75th %ile: 10000

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90th %ile: 10000

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 14.66 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the upper Sandusky River basin was approved by U.S. EPA on September 29, 2004. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDL was conducted in 2001. A report on the findings of the 2001 biological and water quality survey can be found at www.epa.state.oh.us/dsw/document_index/psdindx.html.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 130.1

04100011 060

Tymochtee Creek (downstream Warpole Creek to mouth)

Integrated Report Assessment Category: 4A

Priority Points:

Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 2001

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	5 Site(s)	1 Site(s)	0.0	0.0	100			
20-50 mi ²	1 Site(s)	0 Site(s)						
						27	32	41
Principal Streams								
50-500 mi ²	5 Site(s)							
	26.7 Miles	10.9 Miles	40.8	59.2	0.00			

High Magnitude Causes

Flow Alteration
Siltation
Nutrients

High Magnitude Sources

Minor Municipal Point Source
Nonirritated Crop Production
Flow Regulation/Modification-Agriculture
Spills

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1)

Cause:

Geometric Mean: 20

No. Ambient Sites: 3

No. Ambient Sampling Records: 18

75th %ile: 590

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 38

90th %ile: 873

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 26.74 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the upper Sandusky River basin was approved by U.S. EPA on September 29, 2004. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDL was conducted in 2001. A report on the findings of the 2001 biological and water quality survey can be found at www.epa.state.oh.us/dsw/document_index/psdindx.html.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 121.8**
 04100011 070 Sandusky River (downstream Tymochtee Creek to upstream Honey
 Creek); excluding Sandusky R. mainstem

Integrated Report Assessment Category: 4A **Priority Points:**
Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 2001
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	6 Site(s)	3 Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	2 Site(s)	70.8	12.5	16.7			
20-50 mi ²	1 Site(s)	1 Site(s)						
						56	36	8
Principal Streams								
50-500 mi ²	5 Site(s)							
	10.0 Miles	4.1 Miles	41.0	59.0	0.00			

High Magnitude Causes

Siltation
 Nutrients
 Organic Enrichment/DO
 Flow Alteration
 Direct Habitat Alterations

High Magnitude Sources

Nonirrigated Crop Production
 Onsite Wastewater Systems (Septic Tanks)
 Channelization - Agriculture
 Flow Regulation/Modification-Agriculture
 Removal of Riparian Vegetation - Ag.

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: No (1-Historical) Cause: Geometric Mean: 64
 No. of Ambient Sites: 0 No. of Ambient Sampling Records: 0 75th %ile: 193
 No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 18 90th %ile: 232
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
 Stream Miles Monitored: 9.10 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the upper Sandusky River basin was approved by U.S. EPA on September 29, 2004. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDL was conducted in 2001. A report on the findings of the 2001 biological and water quality survey can be found at www.epa.state.oh.us/dsw/document_index/psdindx.html.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 179.7

04100011 080

Honey Creek

Integrated Report Assessment Category: 4A

Priority Points:

Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW

Sampling Year(s): 2001

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	8 Site(s)	3 Site(s)						
Primary Tributaries								
5-20 mi ²	10 Site(s)	4 Site(s)	69.4	10.6	20.0			
20-50 mi ²	1 Site(s)	1 Site(s)				62	17	21
Principal Streams								
50-500 mi ²	7 Site(s)							
	33.2 Miles	18.2 Miles	54.8	23.8	21.4			

High Magnitude Causes

Flow Alteration
Siltation
Nutrients

High Magnitude Sources

Minor Municipal Point Source
Nonirrigated Crop Production
Channelization - Agriculture
Flow Regulation/Modification-Agriculture
Removal of Riparian Vegetation - Ag.

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1)

Cause:

Geometric Mean: 128

No. Ambient Sites: 3

No. Ambient Sampling Records: 12

75th %ile: 395

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 20

90th %ile: 791

Other:

Public Drinking Water Supply Assessment

Location(s): Honey Creek @RM 28.35 [Attica]; Unnamed tributary (Brokenknife Creek RM 5.50) @RM 2.15 [New Washington]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data, Watch List

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the upper Sandusky River basin was approved by U.S. EPA on September 29, 2004. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDL was conducted in 2001. A report on the findings of the 2001 biological and water quality survey can be found at www.epa.state.oh.us/dsw/document_index/psdindx.html.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 157.8

04100011 100

Wolf Creek

Integrated Report Assessment Category: 5

Priority Points: 3

Next Scheduled Monitoring: 2009

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW
Impairment: Unknown (3)

Sampling Year(s):

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (5)
No. Ambient Sites: 16
No. of NPDES MOR Sites: 1
Other:

Cause: Pathogens
No. Ambient Sampling Records: 46
No. of NPDES MOR Records: 4

Geometric Mean: 924
75th %ile: 2350
90th %ile: 4750

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
Stream Miles Monitored: 0.00 Stream Miles Impaired:
Lake Acres Monitored: 0.0 Lake Acres Impaired:

Pollutants (Waterbody):

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 80.9

04100011 110

Green Creek

Integrated Report Assessment Category: 5

Priority Points: 3

Next Scheduled Monitoring: 2009

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 782

No. Ambient Sites: 6

No. Ambient Sampling Records: 8

75th %ile: 1850

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 20

90th %ile: 2410

Other:

Public Drinking Water Supply Assessment

Location(s): Beaver Creek @RM 2.88 [Clyde]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 2.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 110.0 Lake Acres Impaired:

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 163.8

04100011 130

Lake Erie tributaries (East of Green Creek to west of Mills Creek)

Integrated Report Assessment Category: 5

Priority Points: 6

Next Scheduled Monitoring: 2009

Aquatic Life Use Assessment

Subcategories of ALU: CWH,WWH
Impairment: Yes (5-Historical)

Sampling Year(s): 1995

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	8 Site(s)	1 Site(s)	3.1	3.1	93.8			
20-50 mi ²	2 Site(s)	0 Site(s)						
Principal Streams						3	3	94
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

Organic Enrichment/DO
Direct Habitat Alterations

High Magnitude Sources

Major Municipal Point Source
Channelization - Agriculture
Channelization - Development

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 1563

No. Ambient Sites: 4

No. Ambient Sampling Records: 10

75th %ile: 6113

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 64

90th %ile: 13360

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 7.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 34.0 Lake Acres Impaired:

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 104.3
04100011 140 Lake Erie tributaries (West of Mills Creek to East of Sawmill Creek)

Integrated Report Assessment Category: 5 **Priority Points: 7**
Next Scheduled Monitoring: 2009

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C Sampling Year(s): 1991, 1995, 2000
Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	3 Site(s)	3 Site(s)	50.0	0.0	50.0			
20-50 mi ²	Site(s)	Site(s)				50	0	50
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

Nutrients
Siltation

High Magnitude Sources

Nonirrigated Crop Production

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (5) Cause: Pathogens Geometric Mean: 654
No. Ambient Sites: 3 No. Ambient Sampling Records: 6 75th %ile: 2000
No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 41 90th %ile: 8200
Other:

Public Drinking Water Supply Assessment

Location(s): Snyder's Ditch @RMs 5.0 and 5.5 [Bellevue]

Impairment: Unknown (3-Insufficient Data) Nitrate Indicator: Insufficient Data, Watch List
Cause: Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1991 (Snyder's Ditch) and 1995 (Caswell Ditch) were used in the 2002 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use. One additional stream (Plum Brook) was sampled at one location in 2000. Most of these data have since exceeded the ten-year threshold and are now considered historical. However, while reflecting the current status that no data are available to assess aquatic use status, recent bacteria data indicated an impaired recreation use. The assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the U.S.EPA.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 132.1
 04100012 010 West Branch Huron River (headwaters to upstream Slate Run)

Integrated Report Assessment Category: 4A **Priority Points:**
Next Scheduled Monitoring: 2017

Aquatic Life Use Assessment

Subcategories of ALU: WWH, MWH Sampling Year(s): 1998, 2002
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	10 Site(s)	3 Site(s)	20.0	22.5	57.5			
20-50 mi ²	4 Site(s)	1 Site(s)				54	17	29
Principal Streams								
50-500 mi ²	4 Site(s)							
	19.7 Miles	17.2 Miles	87.3	12.7	0.00			

High Magnitude Causes

Nutrients
 Organic Enrichment/DO
 Flow Alteration
 Direct Habitat Alterations
 Oil and Grease
 Siltation

High Magnitude Sources

Major Municipal Point Source
 Nonirrigated Crop Production
 Channelization - Agriculture
 Channelization - Development
 Upstream Impoundment
 Waste Storage/Storage Tank Leaks
 Irrigated Crop Production

Recreation Use Assessment

Subcategory of Use: Primary Contact Cause: Pathogens Geometric Mean: 604
 Impairment: Yes (4A-TMDL) No. of Ambient Sampling Records: 30 75th %ile: 1250
 No. of NPDES MOR Sites: 9 No. of NPDES MOR Records: 78 90th %ile: 3120
 No. of NPDES MOR Sites: 3
 Other:

Public Drinking Water Supply Assessment

Location(s): West Branch Huron River @RM 33.8 [Willard]

Impairment: Unknown (3-Insufficient Data) Nitrate Indicator: Insufficient Data
 Cause: Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
 Stream Miles Monitored: 22.98 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Huron River basin was approved by U.S. EPA on September 28, 2005. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDLs was conducted in 1998 and 2002.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 129.8

04100012 020

West Branch Huron River (upstream Slate Run to mouth)

Integrated Report Assessment Category: 4A

Priority Points:

Next Scheduled Monitoring: 2017

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH

Sampling Year(s): 1998, 2002

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	9 Site(s)	6 Site(s)	58.4	11.1	30.5			
20-50 mi ²	2 Site(s)	1 Site(s)				79	5	16
Principal Streams								
50-500 mi ²	4 Site(s)							
	10.5 Miles	10.5 Miles	100	0.00	0.00			

High Magnitude Causes

High Magnitude Sources

Nutrients
Direct Habitat Alterations
Natural Limits

Nonirrigated Crop Production
Channelization - Agriculture
Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1)

Cause:

Geometric Mean: 217

No. Ambient Sites: 5

No. Ambient Sampling Records: 11

75th %ile: 400

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 20

90th %ile: 500

Other:

Public Drinking Water Supply Assessment

Location(s): W. Branch Huron River @RM 8.52 [Monroeville]; Frink Run @RM 4.83 [Bellevue]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data, Watch List

Cause:

Pesticide Indicator: Insufficient Data, Watch List

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 10.52 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Huron River basin was approved by U.S. EPA on September 28, 2005. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDLs was conducted in 1998 and 2002.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 83.2
04100012 040 Lake Erie tributaries (East of Huron River to West of Vermilion River)

Integrated Report Assessment Category: 4A **Priority Points:**
Next Scheduled Monitoring: 2021

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 1993, 2000-2002
Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	5 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	10 Site(s)	2 Site(s)	30.0	5.0	65.0			
20-50 mi ²	5 Site(s)	2 Site(s)				30	5	65
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

Nutrients
Siltation
Direct Habitat Alterations
Natural Limits (Drought)

High Magnitude Sources

Nonirrigated Crop Production
Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: No (1) Cause: Geometric Mean: 182
No. of Ambient Sites: 15 No. of Ambient Sampling Records: 44 75th %ile: 309
No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 62 90th %ile: 902
Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing aquatic life uses in the Old Woman Creek and Chappel Creek watersheds was approved by U.S. EPA on August 31, 2005. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDLs was primarily conducted between 2000 and 2002. A report on the findings of the biological and water quality survey can be found at: www.epa.state.oh.us/dsw/document_index/psdindx.html.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11

WAU Description

WAU Size (mi²): 140.3

04100012 050

Vermilion River (headwaters to upstream East Branch)

Integrated Report Assessment Category: 5

Priority Points: 9

Next Scheduled Monitoring: 2021

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 2002

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	5 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	14 Site(s)	2 Site(s)	8.6	58.9	32.5			
20-50 mi ²	3 Site(s)	0 Site(s)						
						52	32	16
Principal Streams								
50-500 mi ²	4 Site(s)							
	23.8 Miles	22.6 Miles	95.0	5.00	0.00			

High Magnitude Causes

Nutrients
Siltation
Flow Alteration
Direct Habitat Alterations
Organic Enrichment/D.O.
Natural Limits (Drought)

High Magnitude Sources

Channelization-Development
Channelization-Agriculture
Onsite Wastewater Systems (Septic Tanks)
Hydromodification-Agriculture
Pasture Land
Nonirrigated Crop Production
Minor Municipal Point Source
Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 382

No. Ambient Sites: 20

No. Ambient Sampling Records: 62

75th %ile: 1200

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 18

90th %ile: 2120

Other:

Public Drinking Water Supply Assessment

Location(s): Vermilion River @RM 52.24 [New London]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 14.60 Stream Miles Impaired: 14.60 Pollutants (Waterbody): Mercury (Vermilion

Lake Acres Monitored: 306.0 Lake Acres Impaired: River)

WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway. Biological and water quality monitoring in support of the TMDLs was conducted in 2002. Principal streams sampled included the Vermilion River, Southwest Branch Vermilion River, Buck Creek, and Clear Creek. The 2006 Integrated Report assessment of available fish tissue data from the Vermilion River documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. A report on the findings of the biological and water quality survey can be found at: www.epa.state.oh.us/dsw/document_index/psdindx.html.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11

WAU Description

WAU Size (mi²): 127.7

04100012 060

Vermilion River (upstream East Branch to mouth)

Integrated Report Assessment Category: 5

Priority Points: 8

Next Scheduled Monitoring: 2021

Aquatic Life Use Assessment

Subcategories of ALU: WWH
Impairment: Yes (5)

Sampling Year(s): 2002, 2005

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	5 Site(s)	2 Site(s)						
Primary Tributaries								
5-20 mi ²	10 Site(s)	3 Site(s)	50.9	26.6	22.5			
20-50 mi ²	3 Site(s)	2 Site(s)				67	13	20
Principal Streams								
50-500 mi ²	9 Site(s)							
	29.6 Miles	24.4 Miles	82.4	0.00	17.6			

High Magnitude Causes

Flow Alteration
Siltation
Organic Enrichment/D.O.
Nutrients
Natural Limits (Drought)

High Magnitude Sources

Flow Regulation/Modification-Development
Channelization-Agriculture
Nonirrigated Crop Production
Industrial Point Source
Minor Municipal Point Source
Onsite Wastewater Systems (Septic Tanks)
Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (5)
No. Ambient Sites: 25
No. of NPDES MOR Sites: 1
Other:

Cause: Pathogens
No. Ambient Sampling Records: 102
No. of NPDES MOR Records: 53

Geometric Mean: 238
75th %ile: 600
90th %ile: 2640

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 29.60 Stream Miles Impaired: 29.60 Pollutants (Waterbody): Mercury (Vermilion River)
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway. Biological and water quality monitoring in support of the TMDLs was conducted in 2002. Principal streams sampled included the Vermilion River, East Fork Vermilion River, and East Branch Vermilion River. The 2006 Integrated Report assessment of available fish tissue data from the Vermilion River documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. 2005 data updates the E. Branch Vermilion River in the vicinity of Green Circle Growers. Report on the findings of the 2002 and 2005 biological and water quality surveys can be found at: www.epa.state.oh.us/dsw/document_index/psdindx.html.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 71.5
04110001 010 Lake Erie tributaries (East of Vermilion River to West of Black River)

Integrated Report Assessment Category: 5 **Priority Points: 3**
Next Scheduled Monitoring: 2011

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s):
Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5-Historical) Cause: Pathogens Geometric Mean: 275
 No. Ambient Sites: 0 No. Ambient Sampling Records: 0 75th %ile: 613
 No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 62 90th %ile: 1284
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 174.0

04110001 020

West Branch Black River

Integrated Report Assessment Category: 5

Priority Points: 6

Next Scheduled Monitoring: 2021

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 1992, 1994, 1997, 2001

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	8 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	16 Site(s)	0 Site(s)	36.5	14.0	49.5			
20-50 mi ²	6 Site(s)	4 Site(s)				18	51	31
Principal Streams								
50-500 mi ²	11 Site(s)							
	26.6 Miles	0.0 Miles	0.00	88.7	11.3			

High Magnitude Causes

High Magnitude Sources

Cause Unknown
Nutrients
Siltation
Organic Enrichment/DO

Nonirrigated Crop Production
Pasture Land
Urban Runoff/Storm Sewers (NPS)
Onsite Wastewater Systems (Septic Tanks)
Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 333

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 1067

No. of NPDES MOR Sites: 3

No. of NPDES MOR Records: 74

90th %ile: 1978

Other:

Public Drinking Water Supply Assessment

Location(s): West Branch Black River @RM 14.42 [Oberlin]; Charlemont Creek @RM 2.97 [Wellington]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 35.60 Stream Miles Impaired: 35.60 Pollutants (Waterbody): PCBs (West Branch

Lake Acres Monitored: 243.0 Lake Acres Impaired: Black River)

WAU Comments

Development of TMDLs for pollutants causing aquatic life use impairments is in progress in the Black River basin. Biological and water quality surveys in support of the TMDLs were conducted in 1997 and 2001.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 95.8
04110001 030 East Branch Black River (headwaters to downstream Coon Creek)

Integrated Report Assessment Category: 5 **Priority Points: 9**
Next Scheduled Monitoring: 2021

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 1996, 1997, 2001
Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	5 Site(s)	4 Site(s)	90.0	10.0	0.0			
20-50 mi ²	3 Site(s)	3 Site(s)				68	32	0
Principal Streams								
50-500 mi ²	3 Site(s)							
	20.7 Miles	9.5 Miles	45.9	54.1	0.00			

High Magnitude Causes

High Magnitude Sources

Siltation

Nonirrigated Crop Production

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5-Historical) Cause: Pathogens Geometric Mean: 606
 No. Ambient Sites: 0 No. Ambient Sampling Records: 0 75th %ile: 780
 No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 20 90th %ile: 7440
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 6.39 Stream Miles Impaired: 6.39 Pollutants (Waterbody): Mercury, PCBs (East Branch Black River)
 Lake Acres Monitored: 51.0 Lake Acres Impaired:

WAU Comments

Aquatic life impairment in the East Branch watershed was restricted to the reach of the East Branch in the vicinity of the Grafton WWTP and in an upstream reach affected by localized nonpoint sources based on monitoring conducted in 1997. Assessment of the Primary Contact Recreation use for the 2004 Integrated Report resulted in a Category 5 determination; these data are now considered historical. The 2006 Integrated Report assessment of available fish tissue data from the East Branch Black River documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. Development of TMDLs for pollutants causing aquatic life use impairments is in progress in the Black River basin. Biological and water quality surveys in support of the TMDLs were conducted in 1997 and 2001.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 125.8

04110001 040

East Branch Black River (downstream Coon Creek to mouth)

Integrated Report Assessment Category: 5

Priority Points: 5

Next Scheduled Monitoring: 2021

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 1996, 1997, 2001

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	0 Site(s)	0.0	16.7	83.3			
20-50 mi ²	Site(s)	Site(s)				50	8	42
Principal Streams								
50-500 mi ²	7 Site(s)							
	24.4 Miles	24.4 Miles	100	0.00	0.00			

High Magnitude Causes

Nutrients
Siltation
Organic Enrichment/DO
Direct Habitat Alterations

High Magnitude Sources

Minor Municipal Point Source
Combined Sewer Overflow
Nonirrigated Crop Production
Channelization - Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1)

Cause:

Geometric Mean: 191

No. Ambient Sites: 2

No. Ambient Sampling Records: 2

75th %ile: 560

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 93

90th %ile: 1648

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 34.91 Stream Miles Impaired: 34.91 Pollutants (Waterbody): Mercury, PCBs (East

Lake Acres Monitored: 0.0 Lake Acres Impaired: Branch Black River)

WAU Comments

Development of TMDLs for pollutants causing aquatic life use impairments is in progress in the Black River basin. Biological and water quality surveys in support of the TMDLs were conducted in 1997 and 2001. Recent bacteria data indicate that a prior impairment listing for the recreation use is no longer supported and the assessment unit has been delisted for that use. The 2004 Integrated Report assessment of fish tissue data documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²):** 100.8
 04110001 050 Black River; Lake Erie tributaries East of Black River to West of Porter
 Creek)
Integrated Report Assessment Category: 5 **Priority Points: 4**
Next Scheduled Monitoring: 2021

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 1997, 2001
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)	0.0	33.3	66.7			
20-50 mi ²	3 Site(s)	0 Site(s)				12	30	58
Principal Streams								
50-500 mi ²	14 Site(s)	3.7 Miles	23.7	26.9	49.4			

High Magnitude Causes

Unknown Toxicity
 Priority Organics
 Nutrients
 Organic Enrichment/DO

High Magnitude Sources

Industrial Point Source
 Major Municipal Point Source
 Combined Sewer Overflows
 Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: No (1) Cause: Geometric Mean: 265
 No. of Ambient Sites: 1 No. of Ambient Sampling Records: 20 75th %ile: 580
 No. of NPDES MOR Sites: 3 No. of NPDES MOR Records: 140 90th %ile: 1903
 Other: The "Dermal Contact Advisory" in effect for the Black River from the 31st St. bridge in Lorain to Lake Erie due to PAH contamination was rescinded by the Ohio Department of Health in 2004.

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 10.90 Stream Miles Impaired: 9.80 Pollutants (Waterbody): PCBs (Black River)
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Development of TMDLs for pollutants causing aquatic life use impairments is in progress in the Black River basin. Biological and water quality surveys in support of the TMDLs were conducted in 1997 and 2001. Recent bacteria data indicate that a prior impairment listing for the recreation use is no longer supported and the assessment unit has been delisted for that use. The 2004 Integrated Report assessment of fish tissue data documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 190.2

04110001 060

West Branch Rocky River

Integrated Report Assessment Category: 5

Priority Points: 5

Next Scheduled Monitoring: 2021

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 1997, 2001

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	2 Site(s)						
Primary Tributaries								
5-20 mi ²	5 Site(s)	1 Site(s)	100.0	0.0	0.0			
20-50 mi ²	1 Site(s)	1 Site(s)						
						72	14	14
Principal Streams								
50-500 mi ²	7 Site(s)							
	30.3 Miles	21.8 Miles	71.9	28.1	0.00			

High Magnitude Causes

High Magnitude Sources

Unknown Toxicity
 Unionized Ammonia
 Nutrients
 Siltation
 Organic Enrichment/DO
 Direct Habitat Alterations

Municipal Point Source
 Land Development/Suburbanization
 Urban Runoff/Storm Sewers (NPS)
 Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1-Historical)

Cause:

Geometric Mean: 328

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 878

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 110

90th %ile: 1900

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 29.40 Stream Miles Impaired: 29.40 Pollutants (Waterbody): Mercury, PCBs (West

Lake Acres Monitored: 0.0 Lake Acres Impaired: Branch Rocky River)

WAU Comments

TMDLs for pollutants impairing the aquatic life beneficial use were partially approved for the Rocky River basin (Plum Creek) by the U.S. EPA on December 4, 2001. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. TMDLs addressing the recreation use impairment are underway although recent bacteria data have indicated no recreation use impairment. Monitoring in support of the TMDLs was conducted in 1997. Follow-up monitoring was conducted in 2001. The 2006 Integrated Report assessment of available fish tissue data from the West Branch Rocky River documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 148.9

04110002 010

Cuyahoga River (headwaters to downstream Black Brook)

Integrated Report Assessment Category: 5

Priority Points: 2

Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW

Sampling Year(s): 1996, 2000

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	10 Site(s)	5 Site(s)						
Primary Tributaries								
5-20 mi ²	8 Site(s)	3 Site(s)	38.5	22.3	39.2			
20-50 mi ²	3 Site(s)	1 Site(s)				19	61	20
Principal Streams								
50-500 mi ²	3 Site(s)							
	12.0 Miles	0.0 Miles	0.00	100	0.00			

High Magnitude Causes

Siltation
Organic Enrichment/DO
Flow Alteration
Direct Habitat Alterations
Natural Limits (Wetlands)

High Magnitude Sources

Pasture Land
Onsite Wastewater Systems (Septic Tanks)
Flow Reg./Mod. - Development
Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1-Historical)

Cause:

Geometric Mean: 281

No. of Ambient Sites: 0

No. of Ambient Sampling Records: 0

75th %ile: 440

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 78

90th %ile: 759

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 7.16 Stream Miles Impaired: 7.16 Pollutants (Waterbody): PCBs (Cuyahoga

Lake Acres Monitored: 517.0 Lake Acres Impaired: River)

WAU Comments

TMDLs for pollutants impairing the aquatic life beneficial use were approved for the upper Cuyahoga River basin by the U.S. EPA on September 27, 2004. Monitoring in support of the TMDL was conducted by the Ohio EPA in 1996 and 2000. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Besides the historical aquatic life use impairment, the 2004 Integrated Report assessment of fish tissue data documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 139.9**
 04110002 020 Cuyahoga River (downstream Black Brook to downstream Breakneck
 Creek)
Integrated Report Assessment Category: 5 **Priority Points: 2**
Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C,LRW Sampling Year(s): 1996, 2000
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	9 Site(s)	5 Site(s)						
Primary Tributaries								
5-20 mi ²	1 Site(s)	1 Site(s)	77.8	16.7	5.5			
20-50 mi ²	1 Site(s)	1 Site(s)				80	16	4
Principal Streams								
50-500 mi ²	11 Site(s)							
	33.2 Miles	27.5 Miles	82.8	14.4	2.80			

High Magnitude Causes

Unknown Toxicity
 Siltation
 Organic Enrichment/DO
 Flow Alteration
 Direct Habitat Alterations
 Natural Limits (Wetlands)

High Magnitude Sources

Major Municipal Point Source
 Minor Municipal Point Source
 Nonirrigated Crop Production
 Channelization - Agriculture
 Channelization - Development
 Flow Reg./Mod. - Development
 Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: No (1) Cause: Geometric Mean: 258
 No. of Ambient Sites: 1 No. of Ambient Sampling Records: 16 75th %ile: 500
 No. of NPDES MOR Sites: 5 No. of NPDES MOR Records: 242 90th %ile: 946
 Other:

Public Drinking Water Supply Assessment

Location(s): Lake Rockwell (Cuyahoga River RM 62.0 to 57.97) [Akron]; Lake Hodgson (Breakneck Creek) [Ravenna]

Impairment: No (1) Nitrate Indicator: Full Support
 Cause: Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 19.82 Stream Miles Impaired: 19.82 Pollutants (Waterbody): PCBs (Cuyahoga River)
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

TMDLs for pollutants impairing the aquatic life beneficial use were approved for the middle Cuyahoga River basin by the U.S. EPA on October 11, 2000. Monitoring in support of the TMDL was conducted by the Ohio EPA in 1996 and 2000. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Besides the historical aquatic life use impairment, the 2004 Integrated Report assessment of fish tissue data documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²): 153.9**
 04110002 040 Cuyahoga River (downstream Little Cuyahoga River to downstream
 Brandywine Creek)
Integrated Report Assessment Category: 5 **Priority Points: 3**
Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 2000, 2006
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	14 Site(s)	10 Site(s)						
Primary Tributaries								
5-20 mi ²	7 Site(s)	4 Site(s)	72.1	20.7	7.2			
20-50 mi ²	5 Site(s)	4 Site(s)						
Principal Streams						36	45	19
50-500 mi ²	3 Site(s)							
	18.1 Miles	0.0 Miles	0.00	68.5	31.5			

High Magnitude Causes

Unknown Toxicity
 Nutrients
 Organic Enrichment/DO
 Flow Alteration
 Direct Habitat Alterations
 Total Dissolved Solids

High Magnitude Sources

Major Municipal Point Source
 Combined Sewer Overflows
 Land Development/Suburbanization
 Urban Runoff/Storm Sewers (NPS)
 Highway/Road/Bridge Runoff (Non-Construction Related)

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (4A-TMDL) Cause: Pathogens Geometric Mean: 1136
 No. of Ambient Sites: 2 No. of Ambient Sampling Records: 2 75th %ile: 2900
 No. of NPDES MOR Sites: 4 No. of NPDES MOR Records: 368 90th %ile: 20000
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 18.11 Stream Miles Impaired: 18.11 Pollutants (Waterbody): PCBs (Cuyahoga
 Lake Acres Monitored: 24.0 Lake Acres Impaired: River)

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the lower Cuyahoga River basin including the Cuyahoga River mainstem reach was approved by U.S. EPA on September 26, 2003. Monitoring in support of the TMDLs was conducted in 1996, 1999, and 2000. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Besides the historical aquatic life and recreation use impairments, the 2004 Integrated Report assessment of fish tissue data documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. 2006 monitoring in the Furnace Run watershed is included as an update to this assessment unit. A report detailing the Furnace Run assessment is available at http://www.epa.state.oh.us/dsw/document_index/psdindx.html.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²): 115.6**
 04110002 060 Cuyahoga River (downstream Tinkers Creek to mouth); excluding
 Cuyahoga R. mainstem

Integrated Report Assessment Category: 4A **Priority Points:**
Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW Sampling Year(s): 2000, 2006
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	6 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	4 Site(s)	0 Site(s)	60.4	10.4	29.2			
20-50 mi ²	1 Site(s)	0 Site(s)						
						61	10	29
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

Metals
 Organic Enrichment/DO
 Flow Alteration
 Direct Habitat Alterations

High Magnitude Sources

Combined Sewer Overflows
 Urban Runoff/Storm Sewers (NPS)
 Spills

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (4A-TMDL) Cause: Pathogens Geometric Mean: 5282
 No. of Ambient Sites: 2 No. of Ambient Sampling Records: 2 75th %ile: 23475
 No. of NPDES MOR Sites: 0 No. of NPDES MOR Records: 0 90th %ile: 27990
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the lower Cuyahoga River basin including the Cuyahoga River mainstem reach was approved by U.S. EPA on September 26, 2003. Monitoring in support of the TMDLs was conducted in 1996, 1999, and 2000. Significant streams within this assessment unit include Big Creek, Mill Creek, and West Creek. Supplemental biological data from the Big Creek and Mill Creek watersheds were collected by NEORS in 2006. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11

WAU Description

WAU Size (mi²): 119.5

04110003 020

Chagrin River (headwaters to downstream Aurora Branch)

Integrated Report Assessment Category: 4A

Priority Points:

Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: CWH,EWH,WWH
Impairment: Yes (4A-TMDL)

Sampling Year(s): 2003, 2004

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	10 Site(s)	6 Site(s)						
Primary Tributaries								
5-20 mi ²	11 Site(s)	6 Site(s)	62.2	25.6	12.2			
20-50 mi ²	6 Site(s)	4 Site(s)				81	13	6
Principal Streams								
50-500 mi ²	7 Site(s)							
	10.0 Miles	10.0 Miles	100	0.00	0.00			

High Magnitude Causes

Direct Habitat Alterations
Flow Alteration
Natural Limits (Wetlands)
Nutrients
Siltation
Organic Enrichment/DO
Unknown Toxicity

High Magnitude Sources

Removal of Riparian Vegetation - Dev. Major Municipal Point Source
Drainage/Filling of Wetlands Channelization - Dev.
Streambank Modification/Destabilization - Dev.
Package Plants (Small Flows)
Urban Runoff/Storm Sewers (NPS)
Upstream Impoundment
Land Development/Suburbanization
Onsite Wastewater Systems (Septic Tanks)

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1)

Cause:

Geometric Mean: 278

No. Ambient Sites: 35

No. Ambient Sampling Records: 108

75th %ile: 520

No. of NPDES MOR Sites: 6

No. of NPDES MOR Records: 277

90th %ile: 1272

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 1.01 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Chagrin River basin were approved by U.S. EPA on July 10, 2007. Chemical, physical, and biological monitoring in support of the TMDL development was conducted in 2003 and 2004. Significant streams assessed included the Chagrin River, Aurora Branch, McFarland Creek, and Silver Creek. A watershed action plan for this assessment unit has been endorsed by the Ohio EPA and Ohio DNR. See <http://www.epa.state.oh.us/dsw/tmdl/ChagrinRiverTMDL.html> for more information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 145.1
04110003 030 Chagrin River (downstream Aurora Branch to mouth)

Integrated Report Assessment Category: 4A **Priority Points:**
Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: CWH,EWH,WWH Sampling Year(s): 2003, 2004
Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	11 Site(s)	6 Site(s)						
Primary Tributaries								
5-20 mi ²	5 Site(s)	3 Site(s)	53.6	11.4	35.0			
20-50 mi ²	2 Site(s)	1 Site(s)						
						77	5	18
Principal Streams								
50-500 mi ²	9 Site(s)							
	27.1 Miles	27.1 Miles	100	0.00	0.00			

High Magnitude Causes

Direct Habitat Alterations
Flow Alteration
Thermal Modifications
Siltation
Organic Enrichment/DO
Nutrients

High Magnitude Sources

Dredge Mining
Land Development/Suburbanization
Flow Regulation/Modification
Urban Runoff/Storm Sewers (NPS)

Recreation Use Assessment

Subcategory of Use: Primary Contact Cause: Pathogens Geometric Mean: 379
Impairment: Yes (4A-TMDL) No. of Ambient Sampling Records: 107 75th %ile: 808
No. of Ambient Sites: 23 No. of NPDES MOR Records: 55 90th %ile: 3780
No. of NPDES MOR Sites: 3
Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
Stream Miles Monitored: 27.79 Stream Miles Impaired: Pollutants (Waterbody):
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Chagrin River basin were approved by U.S. EPA on July 10, 2007. Chemical, physical, and biological monitoring in support of the TMDL development was conducted in 2003 and 2004. Significant streams assessed included the Chagrin River and the East Branch Chagrin River. A watershed action plan for this assessment unit has been endorsed by the Ohio EPA and Ohio DNR. See <http://www.epa.state.oh.us/dsw/tmdl/ChagrinRiverTMDL.html> for more information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 114.9**
 04110003 040 Lake Erie tributaries (East of Grand River to West of Ashtabula River)

Integrated Report Assessment Category: 5 **Priority Points: 3**
Next Scheduled Monitoring: 2014

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 1995
 Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	12 Site(s)	1 Site(s)	54.2	12.5	33.3			
20-50 mi ²	1 Site(s)	1 Site(s)				54	13	33
Principal Streams								
50-500 mi ²	Site(s)	Miles						

High Magnitude Causes

Cause Unknown
 Nutrients
 Organic Enrichment/DO
 Flow Alteration
 Direct Habitat Alterations

High Magnitude Sources

Minor Municipal Point Source
 Channelization - Development
 Flow Reg./Mod. - Development
 Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3-Indeterminate Data) Cause: Geometric Mean: 691
 No. of Ambient Sites: 0 No. of Ambient Sampling Records: 0 75th %ile: 1325
 No. of NPDES MOR Sites: 2 No. of NPDES MOR Records: 76 90th %ile: 2700
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1995 were used in the 2002 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use. These data have since exceeded the ten-year threshold and are now considered historical. However, while reflecting the current status that no data are available to assess beneficial use status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the U.S. EPA.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 126.8

04110003 050

Ashtabula River

Integrated Report Assessment Category: 5

Priority Points: 6

Next Scheduled Monitoring: 2014

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW

Sampling Year(s): 1995

Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)	100.0	0.0	0.0			
20-50 mi ²	1 Site(s)	1 Site(s)				91	7	2
Principal Streams								
50-500 mi ²	5 Site(s)	5 Site(s)	80.7	14.6	4.70			
	27.5 Miles	22.2 Miles						

High Magnitude Causes

High Magnitude Sources

Cause Unknown
Priority Organics
Direct Habitat Alterations

Land Disposal
Hazardous Waste
Contaminated Sediments

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 24.90 Stream Miles Impaired: 23.80 Pollutants (Waterbody): PCBs,

Lake Acres Monitored: 0.0 Lake Acres Impaired: Hexachlorobenzene (Ashtabula River)

WAU Comments

Biological and water quality data collected in 1995 were used in the 2002 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use. These data have since exceeded the ten-year threshold and are now considered historical. Additionally, the 2004 Integrated Report assessment of fish tissue data documented body burdens of pollutants at levels reflecting a violation(s) of Ohio Water Quality Standards criteria which resulted in listing as impaired for fish consumption. While reflecting the current status that no data are available to assess the aquatic life use status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the U.S. EPA. A collaborative project involving the U.S. EPA, the Ashtabula City Port Authority, the State of Ohio, and the Army Corps of Engineers to remove PCB-contaminated sediments from the lower Ashtabula River commenced in 2006 and should be completed by 2009. Future monitoring within the watershed will be conducted within the normal rotating basin schedule after the cessation of the project and when sufficient recovery time has elapsed.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 156.7

04110004 010

Grand River (headwaters to downstream Swine Creek)

Integrated Report Assessment Category: 5

Priority Points: 2

Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 1995, 1999

Impairment: No (1-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries			100.0	0.0	0.0			
5-20 mi ²	6 Site(s)	6 Site(s)						
20-50 mi ²	Site(s)	Site(s)				100	0	0
Principal Streams	1 Site(s)							
50-500 mi ²	10.2 Miles	10.2 Miles	100	0.00	0.00			

High Magnitude Causes

High Magnitude Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. of Ambient Sites:

No. of Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): Grand River @RM 89.12 [West Farmington]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 18.75 Stream Miles Impaired: 18.75 Pollutants (Waterbody): Mercury, PCBs (Grand River)

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Limited monitoring was conducted in this Grand River assessment unit by the Ohio EPA in 1995 (chemical, physical, and biological) and the Ohio DNR in 1999 (biological). Streams sampled included the Grand River, Baughman Creek, Swine Creek, and Andrews Creek. Full attainment of designated aquatic life uses was documented at all sampling locations. However, most of this data has since exceeded the ten-year threshold and is now considered historical. Biological and water quality monitoring was conducted in the upper Grand River basin in 2007. Data from this effort will be used to update the status of beneficial uses in the upper Grand River basin and will be reported in the 2010 Integrated Report. The 2004 Integrated Report assessment of fish tissue data documented body burdens of pollutants at levels reflecting a violation(s) of Ohio Water Quality Standards criteria which resulted in listing of the Grand River as impaired for fish consumption. As such, the assessment unit will remain Category 5 until TMDLs for all pollutants impairing all beneficial uses are completed and approved by the U.S. EPA.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²):** 131.9
 04110004 020 Grand River (downstream Swine Creek to upstream Rock Creek)

Integrated Report Assessment Category: 5 **Priority Points: 6**
Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH Sampling Year(s): 1995, 1999
 Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	3 Site(s)	3 Site(s)	100.0	0.0	0.0			
20-50 mi ²	1 Site(s)	1 Site(s)				69	31	0
Principal Streams								
50-500 mi ²	2 Site(s)							
	25.0 Miles	9.7 Miles	38.8	61.2	0.00			

High Magnitude Causes

Natural Conditions (Flow or Habitat)

High Magnitude Sources

Natural Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3-Indeterminate Data) Cause: Geometric Mean: 224
 No. of Ambient Sites: 0 No. of Ambient Sampling Records: 0 75th %ile: 1200
 No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 7 90th %ile: 2220
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
 Cause:

Nitrate Indicator:
 Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 24.96 Stream Miles Impaired: 24.96 Pollutants (Waterbody): Mercury, PCBs (Grand River)
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Limited monitoring was conducted in this Grand River assessment unit by the Ohio EPA in 1995 (chemical, physical, and biological) and the Ohio DNR in 1999 (biological). Streams sampled included the Grand River, Phelps Creek, Hoskins Creek, Mill Creek, Crooked Creek, and Indian Creek. Full attainment of designated aquatic life uses was documented at all tributary sampling locations. Partial attainment in the Grand River for over 15 miles was due exclusively to the habitat-limiting nature of the extensive wetland stream complex (natural conditions). However, most of this data has since exceeded the ten-year threshold and is now considered historical. Biological and water quality monitoring was conducted in the upper Grand River basin in 2007. Data from this effort will be used to update the status of beneficial uses in the upper Grand River basin and will be reported in the 2010 Integrated Report. The 2004 Integrated Report assessment of fish tissue data documented body burdens of pollutants at levels reflecting a violation(s) of Ohio Water Quality Standards criteria which resulted in listing of the Grand River as impaired for fish consumption. As such, the assessment unit will remain Category 5 until TMDLs for all pollutants impairing all beneficial uses are completed and approved by the U.S. EPA.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 70.7

04110004 030

Rock Creek

Integrated Report Assessment Category: 5

Priority Points: 2

Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 56

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 115

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 19

90th %ile: 356

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody): Mercury (New Lyme

Lake Acres Monitored: 54.0 Lake Acres Impaired: 54.0 Lake)

WAU Comments

A small amount of data were collected in this watershed, but there are not enough sampling locations to do a complete aquatic life use assessment. However, fish tissue contamination issues in New Lyme Lake resulted in the listing of the assessment unit as Category 5 (impaired). Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 57.7

04110004 040

Grand River (downstream Rock Creek to upstream Mill Creek)

Integrated Report Assessment Category: 5

Priority Points: 2

Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Data Available	Raw Data			% Attainment			WAU Score		
		No.	Attaining		Full	Partial	Non	Full	Partial	Non
Secondary Tributaries										
< 5 mi ²		Site(s)	Site(s)							
Primary Tributaries										
5-20 mi ²		Site(s)	Site(s)							
20-50 mi ²		Site(s)	Site(s)							
Principal Streams										
50-500 mi ²		Site(s)								
		Miles	Miles							

High Magnitude Causes

High Magnitude Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 554

No. Ambient Sites: 1

No. Ambient Sampling Records: 8

75th %ile: 2075

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90th %ile: 5630

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 9.31 Stream Miles Impaired: 9.31 Pollutants (Waterbody): Mercury, PCBs (Grand

Lake Acres Monitored: 0.0 Lake Acres Impaired: River)

WAU Comments

A small amount of biosurvey data have been collected in this watershed, but there were not enough sampling locations to do a complete aquatic life use assessment. However, the 2004 Integrated Report assessment of fish tissue data documented body burdens of pollutants at levels reflecting a violation(s) of Ohio Water Quality Standards criteria and was thus listed as impaired for fish consumption. Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 103.3

04110004 050

Mill Creek

Integrated Report Assessment Category: 5

Priority Points: 6

Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 2003, 2004

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	1 Site(s)	45.8	12.5	41.7			
20-50 mi ²	2 Site(s)	1 Site(s)						
						73	6	21
Principal Streams								
50-500 mi ²	4 Site(s)							
	16.8 Miles	16.8 Miles	100	0.00	0.00			

High Magnitude Causes

High Magnitude Sources

Siltation
Natural Limits
Natural Limits (Wetlands)
Flow Alteration
Organic Enrichment/DO
Unknown Toxicity

Channelization - Agriculture
Natural
Urban Runoff/Storm Sewers (NPS)
Combined Sewer Overflow

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 288

No. Ambient Sites: 11

No. Ambient Sampling Records: 50

75th %ile: 988

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 20

90th %ile: 2950

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: No (1)

Stream Miles Monitored: 8.10 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway. Biological and water quality monitoring in support of the TMDLs was conducted in 2003 and 2004. Major streams sampled included Mill Creek and Cemetery Creek.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 1.5

04120101 060

Lake Erie tributaries (East of Conneaut Creek)

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2014

Aquatic Life Use Assessment

Subcategories of ALU: CWH
Impairment: Unknown (3)

Sampling Year(s):

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Unknown (3)
No. Ambient Sites:
No. of NPDES MOR Sites:
Other:

Cause:
No. Ambient Sampling Records:
No. of NPDES MOR Records:

Geometric Mean:
75th %ile:
90th %ile:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

This is a very tiny watershed within Ohio. Most of it extends into Pennsylvania. The only stream in Ohio within this reach is Turkey Creek, with chemical data from 1981. Recent Lake Erie shoreline data are available.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 9.0
04120200 010 Lake Erie Islands

Integrated Report Assessment Category: 3 **Priority Points:**
Next Scheduled Monitoring: 2014

Aquatic Life Use Assessment

Subcategories of ALU: Sampling Year(s):
Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3) Cause: Geometric Mean:
 No. Ambient Sites: No. Ambient Sampling Records: 75th %ile:
 No. of NPDES MOR Sites: No. of NPDES MOR Records: 90th %ile:
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

No data of any kind have ever been collected by the Ohio EPA on the Lake Erie Islands. Only shoreline data on Lake Erie have been collected.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 149.1
05030101 070 Middle Fork Little Beaver Creek

Integrated Report Assessment Category: 5 **Priority Points: 2**
Next Scheduled Monitoring: 2018

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH Sampling Year(s): 1999
Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	7 Site(s)	3 Site(s)						
Primary Tributaries								
5-20 mi ²	13 Site(s)	8 Site(s)	36.1	23.8	40.1			
20-50 mi ²	5 Site(s)	1 Site(s)				46	34	20
Principal Streams								
50-500 mi ²	8 Site(s)							
	21.5 Miles	12.2 Miles	56.7	43.3	0.00			

High Magnitude Causes

Cause Unknown Oil and Grease
Pesticides Natural Limits (Wetlands)
Unionized Ammonia
Nutrients
Siltation
Organic Enrichment/DO
Salinity/TDS/Chlorides
Direct Habitat Alterations

High Magnitude Sources

Source Unknown Nonirrigated Crop Production
Contaminated Sediments Surface Mining
Major Municipal Point Source Channelization - Ag.
Removal of Riparian Veg. - Ag. Channelization - Devel.
Confined Animal Feeding Operations (NPS) Spills
Pasture Land
Onsite Wastewater Systems (Septic Tanks)
Urban Runoff/Storm Sewers (NPS)

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: No (1) Cause: Geometric Mean: 85
No. Ambient Sites: 0 No. Ambient Sampling Records: 0 75th %ile: 380
No. of NPDES MOR Sites: 4 No. of NPDES MOR Records: 157 90th %ile: 1100

Other: A "Dermal Contact Advisory" is in effect for Middle Fork Little Beaver Creek due to Mirex contamination. The area under the advisory is from Alternate St. Rt. 14 at Allen Rd. near Salem to St. Rt. 11 south of Lisbon (Columbiana County).

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
Stream Miles Monitored: 38.40 Stream Miles Impaired: 38.40 Pollutants (Waterbody): PCBs, Mirex (Middle Fork Little Beaver Creek)
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Little Beaver Creek basin was approved by U.S. EPA on September 28, 2005. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDLs was conducted in the watershed in 1999. Recent bacteria data indicated no impairment of the recreation use. As this assessment unit continues to have a fish consumption impairment, it will remain Category 5 until TMDLs are developed for all pollutants impairing all beneficial uses.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 111.2

05030101 080

West Fork Little Beaver Creek

Integrated Report Assessment Category: 4A

Priority Points:

Next Scheduled Monitoring: 2018

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 1999

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	4 Site(s)	3 Site(s)						
Primary Tributaries								
5-20 mi ²	5 Site(s)	2 Site(s)	53.8	25.0	21.2			
20-50 mi ²	2 Site(s)	1 Site(s)						
Principal Streams						50	39	11
50-500 mi ²	3 Site(s)							
	15.6 Miles	7.2 Miles	46.0	54.0	0.00			

High Magnitude Causes

High Magnitude Sources

Cause Unknown
Siltation
Flow Alteration
Natural Limits (Wetlands)
Nutrients
Organic Enrichment/DO
Unionized Ammonia
Pathogens

Pasture Land
Channelization - Agriculture
Channelization - Development
Upstream Impoundment
Removal of Riparian Vegetation - Ag.
Natural
Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1-Historical)

Cause:

Geometric Mean: 27

No. Ambient Sites: 1

No. Ambient Sampling Records: 1

75th %ile: 75

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 16

90th %ile: 303

Other:

Public Drinking Water Supply Assessment

Location(s): Cold Run @RM 4.96, Salem Reservoir, Unnamed Tributary (Cold Run RM 4.97) @RM 1.42 [Salem]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 4.10 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Development of TMDLs for pollutants impairing the aquatic life beneficial use in the Little Beaver Creek basin is in progress. Intensive monitoring in support of the TMDLs was conducted in the watershed in 1999.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 140.1**
 05030101 090 Little Beaver Creek (downstream Middle and West Forks to mouth)

Integrated Report Assessment Category: 5 **Priority Points: 3**
Next Scheduled Monitoring: 2018

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH,LRW Sampling Year(s): 1999
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	9 Site(s)	5 Site(s)						
Primary Tributaries								
5-20 mi ²	14 Site(s)	9 Site(s)	79.9	5.4	14.7			
20-50 mi ²	1 Site(s)	1 Site(s)				90	3	7
Principal Streams								
50-500 mi ²	8 Site(s)							
	24.7 Miles	24.7 Miles	100	0.00	0.00			

High Magnitude Causes

Unionized Ammonia
 Nutrients
 Siltation
 Organic Enrichment/DO
 Flow Alteration
 Direct Habitat Alterations
 Pathogens
 Natural Limits (Wetlands)

High Magnitude Sources

Major Industrial Point Source
 Combined Sewer Overflows
 Pasture Land
 Surface Mining
 Subsurface Mining
 Channelization - Development
 Removal of Riparian Vegetation - Development
 Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: No (1) Cause: Geometric Mean: 201
 No. of Ambient Sites: 3 No. of Ambient Sampling Records: 20 75th %ile: 495
 No. of NPDES MOR Sites: 2 No. of NPDES MOR Records: 62 90th %ile: 839
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 18.10 Stream Miles Impaired: 10.80 Pollutants (Waterbody): PCBs (Little Beaver Creek)
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Little Beaver Creek basin was approved by U.S. EPA on September 28, 2005. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDLs was conducted in the watershed in 1999. As this assessment unit continues to have a fish consumption impairment, it will remain Category 5 until TMDLs are developed for all pollutants impairing all beneficial uses.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 118.7

05030101 180 Yellow Creek (headwaters to upstream Town Fork)

Integrated Report Assessment Category: 5

Priority Points: 10

Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: CWH,EWH,WWH

Sampling Year(s): 2005, 2006

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	15 Site(s)	13 Site(s)						
Primary Tributaries								
5-20 mi ²	11 Site(s)	10 Site(s)	94.4	5.6	0.0			
20-50 mi ²	2 Site(s)	2 Site(s)				97	3	0
Principal Streams								
50-500 mi ²	3 Site(s)							
	17.1 Miles	17.1 Miles	100	0.00	0.00			

High Magnitude Causes

Organic Enrichment (Sewage) Biological Indicators
Oxygen, Dissolved
Natural Conditions (Flow or Habitat)

High Magnitude Sources

On-Site Treatment Systems (Septic Tanks and Similar Decentralized Systems)
Livestock (Grazing or Feeding Operations)
Natural Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 1018

No. Ambient Sites: 30

No. Ambient Sampling Records: 106

75th %ile: 2400

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90th %ile: 7050

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 16.05 Stream Miles Impaired: 16.05 Pollutants (Waterbody): PCBs (Yellow Creek)

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological data were collected from the Yellow Creek watershed in 2005 and 2006 to support development of TMDLs for pollutants impairing beneficial uses. Principal streams sampled in this assessment unit included Yellow Creek, Elkhorn Creek, Center Fork, Upper North Fork, and Long Run. Available bacteria data indicated an impairment of the recreation use. Except for a handful of sites, the designated or recommended aquatic life uses were met at all sites and aquatic communities, in general, were high quality. The 2006 Integrated Report assessment of available fish tissue data from Yellow Creek documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11

WAU Description

WAU Size (mi²): 120.4

05030101 190

Yellow Creek (upstream Town Fork to mouth)

Integrated Report Assessment Category: 5

Priority Points: 8

Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: CWH,EWH,WWH,LRW

Sampling Year(s): 2005, 2006

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	15 Site(s)	11 Site(s)						
Primary Tributaries								
5-20 mi ²	7 Site(s)	5 Site(s)	86.2	8.8	5.0			
20-50 mi ²	4 Site(s)	4 Site(s)				90	7	3
Principal Streams								
50-500 mi ²	5 Site(s)							
	10.3 Miles	9.7 Miles	94.2	5.80	0.00			

High Magnitude Causes

Metals
Sulfates
pH
Sedimentation/Siltation
Direct Habitat Alterations
Other Flow Regime Alterations
Fish-Passage Barrier

High Magnitude Sources

Acid Mine Drainage
Surface Mining
Subsurface Mining
Off-Road Vehicles
Upstream Impoundments
Natural Sources
Hydrostructure Impacts on Fish Passage

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 250

No. Ambient Sites: 37

No. Ambient Sampling Records: 128

75th %ile: 685

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 4

90th %ile: 2090

Other:

Public Drinking Water Supply Assessment

Location(s): Riley Run @RM 2.83 [Salineville]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 5.45 Stream Miles Impaired: 5.45 Pollutants (Waterbody): PCBs (Yellow Creek,

Lake Acres Monitored: 25.0 Lake Acres Impaired: North Fork Yellow Creek)

WAU Comments

Intensive chemical, physical, and biological data were collected from the Yellow Creek watershed in 2005 and 2006 to support development of TMDLs for pollutants impairing beneficial uses. Principal streams sampled in this assessment unit included Yellow Creek, Town Fork, Brush Creek, Riley Run, and North Fork Yellow Creek. Available bacteria data indicated an impairment of the recreation use. Except for a handful of sites, the designated or recommended aquatic life uses were met at all sites and aquatic communities, in general, were high quality. The 2006 Integrated Report assessment of available fish tissue data from Yellow Creek documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 127.5

05030101 340

Cross Creek

Integrated Report Assessment Category: 5

Priority Points: 2

Next Scheduled Monitoring: 2010

Aquatic Life Use Assessment

Subcategories of ALU: CWH,WWH,LRW
Impairment: Unknown (3)

Sampling Year(s):

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: No (1)
No. Ambient Sites: 0
No. of NPDES MOR Sites: 3
Other:

Cause:
No. Ambient Sampling Records: 0
No. of NPDES MOR Records: 66

Geometric Mean: 412
75th %ile: 715
90th %ile: 1000

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 20.60 Stream Miles Impaired: 20.60 Pollutants (Waterbody): PCBs (Cross Creek)

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A small amount of biological and water quality data has been collected in this watershed, but there were not enough sampling locations to do a complete aquatic life use assessment. The only recent biological sampling has been at reference sites. Fish tissue data were collected in 2000 and were the determining factor in the Category 5 listing.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 40.7

05030102 010

Tributaries to Pymatuning Reservoir (within Ohio)

Integrated Report Assessment Category: 5

Priority Points: 2

Next Scheduled Monitoring: 2008

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 274

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 593

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 40

90th %ile: 1129

Other:

Public Drinking Water Supply Assessment

Location(s): Shenango River @RM 68.40 (Pymatuning Reservoir) [ODNR-Pymatuning S.P.]

Impairment: No (1)

Nitrate Indicator: Full Support

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody): PCBs (Pymatuning

Lake Acres Monitored: 3580.0 Lake Acres Impaired: 3580.0 Reservoir)

WAU Comments

The 2006 Integrated Report assessment of fish tissue data from Pymatuning Reservoir documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. Comprehensive chemical, physical, and biological monitoring is scheduled in this assessment unit in 2008 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 149.5

05030102 030

Pymatuning Creek

Integrated Report Assessment Category: 5

Priority Points: 1

Next Scheduled Monitoring: 2008

Aquatic Life Use Assessment

Subcategories of ALU: **WWH**

Sampling Year(s): **1994**

Impairment: **Yes (5-Historical)**

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	1 Site(s)	25.0	25.0	50.0			
20-50 mi ²	1 Site(s)	0 Site(s)				12	13	75
Principal Streams								
50-500 mi ²	7 Site(s)							
	18.0 Miles	0.0 Miles	0.00	0.00	100			

High Magnitude Causes

Organic Enrichment/DO
Flow Alterations
Direct Habitat Alterations
Pathogens

High Magnitude Sources

Urban Runoff/Storm Sewers (NPS)
Channelization - Agriculture
Natural

Recreation Use Assessment

Subcategory of Use: **Primary Contact**

Impairment: **Unknown (3)**

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): **No Public Drinking Water Supply Intakes**

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: **Yes** Impairment: **Unknown (3-Indeterminate Data)**

Stream Miles Monitored: **28.20** Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: **0.0** Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1994 were used in the 2002 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use. These data have exceeded the ten-year threshold and are now considered historical. However, while reflecting the current status that insufficient data are available to assess beneficial use status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the U.S. EPA. Comprehensive chemical, physical, and biological monitoring is scheduled in this assessment unit in 2008 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11

WAU Description

WAU Size (mi²): 129.2

05030103 010

Mahoning River (headwaters to downstream Beech Creek)

Integrated Report Assessment Category: 5

Priority Points: 5

Next Scheduled Monitoring: 2022

Aquatic Life Use Assessment

Subcategories of ALU: CWH,WWH

Sampling Year(s): 2006

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	7 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	8 Site(s)	4 Site(s)	32.1	13.4	54.5			
20-50 mi ²	Site(s)	Site(s)						
						39	11	50
Principal Streams								
50-500 mi ²	5 Site(s)							
	9.2 Miles	4.2 Miles	45.7	8.70	45.6			

High Magnitude Causes

High Magnitude Sources

Sedimentation/Siltation
 Other Flow Regime Alterations
 Alteration in Stream-Side or Littoral Vegetative Covers
 Nutrient/Eutrophication Biological Indicators
 Direct Habitat Alterations
 Natural Causes (Flow or Habitat)
 Fish Kills

Municipal (Urbanized High Density Area)
 Dam or Impoundment
 Agriculture
 Loss of Riparian Habitat
 Channelization
 Municipal Point Source Discharges
 Natural Sources
 Unrestricted Cattle Access
 Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 580

No. Ambient Sites: 21

No. Ambient Sampling Records: 104

75th %ile: 1498

No. of NPDES MOR Sites: 4

No. of NPDES MOR Records: 138

90th %ile: 3870

Other:

Public Drinking Water Supply Assessment

Location(s): Mahoning River @RMs 83.55 [Alliance] and 91.50 [Sebring]

Impairment: No (1)

Nitrate Indicator: Full Support

Cause:

Pesticide Indicator: Insufficient Data, Watch List

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 5.57 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2006 as part of monitoring in the upper Mahoning River watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included the Mahoning River and Beech Creek. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 118.7**
 05030103 020 Mahoning River (downstream Beech Creek to downstream Berlin Dam)

Integrated Report Assessment Category: 5 **Priority Points: 9**
Next Scheduled Monitoring: 2022

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 2006
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	5 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	3 Site(s)	2 Site(s)	41.7	25.0	33.3			
20-50 mi ²	2 Site(s)	1 Site(s)						
						42	25	33
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

Other Flow Regime Alterations
 Sedimentation/Siltation
 Nutrient/Eutrophication Biological Indicators
 Alterations in Stream-Side or Littoral Vegetative Covers
 Natural Conditions (Flow or Habitat)

High Magnitude Sources

Upstream Impoundments
 Channelization
 Municipal (Urbanized High Density Area)
 Agriculture
 Unrestricted Cattle Access
 Dam or Impoundment
 Natural Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 359
 No. of Ambient Sites: 12 No. of Ambient Sampling Records: 76 75th %ile: 1325
 No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 24 90th %ile: 4920
 Other:

Public Drinking Water Supply Assessment

Location(s): Deer Creek @RM 0.54 (Walborn Reservoir) [Alliance]

Impairment: No (1) Nitrate Indicator: Full Support
 Cause: Pesticide Indicator: Full Support, Watch List

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody): PCBs (Berlin Lake)
 Lake Acres Monitored: 4573.0 Lake Acres Impaired: 3590.0

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2006 as part of monitoring in the upper Mahoning River watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included Deer Creek and Mill Creek. The entirety of the Mahoning River mainstem in this assessment unit is impounded as Berlin Lake. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information. The 2004 Integrated Report assessment of fish tissue data documented body burdens of one or more pollutants at levels in Berlin Lake exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing this assessment unit as impaired for fish consumption.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²):** 167.1
 05030103 030 Mahoning River (downstream Berlin Dam to downstream West Branch)

Integrated Report Assessment Category: 5 **Priority Points: 7**
Next Scheduled Monitoring: 2022

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW Sampling Year(s): 2003, 2006
 Impairment: Yes (5)

Stream Size Category	Raw Data			% Attainment			WAU Score		
	Data Available	No. Attaining		Full	Partial	Non	Full	Partial	Non
Secondary Tributaries									
< 5 mi ²	11 Site(s)	3 Site(s)							
Primary Tributaries									
5-20 mi ²	12 Site(s)	7 Site(s)		46.4	40.3	13.3			
20-50 mi ²	2 Site(s)	1 Site(s)							
							30	51	19
Principal Streams									
50-500 mi ²	7 Site(s)								
	20.4 Miles	2.8 Miles		13.7	61.3	25.0			

High Magnitude Causes

Oxygen, Dissolved
 Organic Enrichment (Sewage) Biological Indicators
 Other Flow Regime Alterations
 Direct Habitat Alterations
 Solids (Suspended/Bedload)
 Turbidity
 Sedimentation/Siltation
 Nutrient/Eutrophication Biological Indicators
 Alterations of Stream-Side or Littoral Vegetative Covers
 Natural Conditions (Flow or Habitat)

High Magnitude Sources

Channelization
 Dam or Impoundment
 Upstream Impoundments
 Impacts from Hydrostructure Flow Regulation/Modification
 Streambank Modifications/Destabilization
 On-Site Treatment Systems (Septic Systems and Similar Decentralized Systems)
 Natural Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 211
 No. Ambient Sites: 25 No. Ambient Sampling Records: 128 75th %ile: 800
 No. of NPDES MOR Sites: 2 No. of NPDES MOR Records: 73 90th %ile: 2200
 Other:

Public Drinking Water Supply Assessment

Location(s): Mahoning River @RMs 56.47 [Newton Falls] and 69.18 [Mahoning Valley S.D.]; West Branch @RM 13.25 (W. Branch/Michael J. Kirwan Res) [ODNR-West Branch S.P.]; Berlin Reservoir [Mahoning Valley S.D.]

Impairment: No (1) Nitrate Indicator: Full Support
 Cause: Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 21.23 Stream Miles Impaired: 14.83 Pollutants (Waterbody): PCBs (Mahoning River)
 Lake Acres Monitored: 12.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2006 as part of monitoring in the upper Mahoning River watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included the Mahoning River, Kale Creek, and West Branch Mahoning River. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information. Additionally, the 2004 Integrated Report assessment of fish tissue data documented body burdens of pollutants in the Mahoning River mainstem at levels reflecting a violation(s) of Ohio Water Quality Standards criteria which resulted in listing as impaired for fish consumption. 2003 biological data focused on a site-specific assessment, conducted in collaboration with the Army Corps of Engineers, of the Ravenna Arsenal complex in the West Branch Mahoning River subwatershed.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 126.9**
 05030103 040 Mahoning River (downstream West Br. to upstream Duck Cr.); excluding
 Mahoning River dst. Eagle Cr.

Integrated Report Assessment Category: 5 **Priority Points: 5**
Next Scheduled Monitoring: 2022

Aquatic Life Use Assessment

Subcategories of ALU: CWH,WWH Sampling Year(s): 2003, 2006, 2007
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	12 Site(s)	8 Site(s)						
Primary Tributaries								
5-20 mi ²	13 Site(s)	11 Site(s)	87.8	4.0	8.2			
20-50 mi ²	3 Site(s)	3 Site(s)						
Principal Streams						73	17	10
50-500 mi ²	4 Site(s)							
	20.8 Miles	12.2 Miles	58.7	29.3	12.0			

High Magnitude Causes

Oxygen, Dissolved
 Organic Enrichment (Sewage) Biological Indicators
 Direct Habitat Alterations
 Other Flow Regime Alterations
 Natural Conditions (Flow or Habitat)
 Oil and Grease
 Impairment Unknown
 Sedimentation/Siltation
 Nutrient/Eutrophication Biological Indicators

High Magnitude Sources

Channelization
 Dam or Impoundment
 Impacts from Hydrostructure Flow Regulation/Modification
 Natural Sources
 Source Unknown
 Package Plant or Other Permitted Small Flows Discharges
 Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: No (1) Cause: Geometric Mean: 367
 No. of Ambient Sites: 16 No. of Ambient Sampling Records: 77 75th %ile: 695
 No. of NPDES MOR Sites: 5 No. of NPDES MOR Records: 122 90th %ile: 1317
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 15.75 Stream Miles Impaired: 8.65 Pollutants (Waterbody): PCBs (Mahoning River)
 Lake Acres Monitored: 11.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2006 as part of monitoring in the upper Mahoning River watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included the Mahoning River, Eagle Creek, and South Fork Eagle Creek. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information. A report developing the TMDL for bacterial contaminants impairing the recreation beneficial use in the Mahoning River basin including this Mahoning River assessment unit was approved by the U.S. EPA on September 17, 2004. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Additionally, the 2004 Integrated Report assessment of fish tissue data documented body burdens of pollutants in the Mahoning River mainstem at levels reflecting a violation(s) of Ohio Water Quality Standards criteria which resulted in listing as impaired for fish consumption. 2003 biological data focused on a site-specific assessment, conducted in collaboration with the Army Corps of Engineers, of the Ravenna Arsenal complex in the Eagle Creek subwatershed.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 229.8**
 05030106 110 Ohio River tributaries (downstream McMahon Creek to downstream Fish
 Creek [WV])
Integrated Report Assessment Category: 5 **Priority Points: 4**
Next Scheduled Monitoring: 2010

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH,LRW Sampling Year(s): 1996, 1998, 2000
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	1 Site(s)	58.3	29.2	12.5			
20-50 mi ²	3 Site(s)	2 Site(s)				77	17	6
Principal Streams								
50-500 mi ²	7 Site(s)							
	24.0 Miles	23.0 Miles	95.8	4.20	0.00			

High Magnitude Causes

Flow Alteration
 Cause Unknown

High Magnitude Sources

Natural
 Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: No (1) Cause:
 No. Ambient Sites: 0 No. Ambient Sampling Records: 0 Geometric Mean: 137
 No. of NPDES MOR Sites: 3 No. of NPDES MOR Records: 283 75th %ile: 360
 Other: 90th %ile: 676

Public Drinking Water Supply Assessment

Location(s): Unnamed trib (North Fork RM 10.0) @RM 0.55 (Res #1 and #3), Slope Creek @RM 1.85 Slope Creek Res) [Barnesville]

Impairment: Unknown (3-Insufficient Data) Nitrate Indicator: Insufficient Data
 Cause: Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

There are numerous biological reference sites on Captina Creek and several tributaries within the watershed. The mainstem coverage is adequate to assess water quality, but many tributaries have never been sampled. The smaller Ohio River tributaries have not been sampled since 1983.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 123.8**
 05030201 010 Ohio River tributaries (downstream Fish Creek [WV] to downstream
 Sunfish Creek)
Integrated Report Assessment Category: 5 **Priority Points: 5**
Next Scheduled Monitoring: 2010

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH Sampling Year(s): 1996, 2000
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	1 Site(s)	0 Site(s)	62.5	0.0	37.5			
20-50 mi ²	2 Site(s)	2 Site(s)				81	0	19
Principal Streams								
50-500 mi ²	3 Site(s) 11.4 Miles	3 Site(s) 11.4 Miles	100	0.00	0.00			

High Magnitude Causes

Unknown Cause

High Magnitude Sources

Unknown Source

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5-Historical) Cause: Pathogens Geometric Mean: 230
 No. Ambient Sites: 0 No. Ambient Sampling Records: 0 75th %ile: 1100
 No. of NPDES MOR Sites: 2 No. of NPDES MOR Records: 19 90th %ile: 2460
 Other:

Public Drinking Water Supply Assessment

Location(s): Sunfish Creek @ RM 25.50, Unnamed trib (Sunfish Creek RM 24.55) @RM 0.15 and 0.80 [Woodsfield]

Impairment: Unknown (3-Insufficient Data) Nitrate Indicator: Insufficient Data
 Cause: Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 136.5

05030201 020

Ohio River tributaries (downstream Sunfish Creek to upstream Muskingum River)

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2010

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH
Impairment: Unknown (3)

Sampling Year(s):

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: No (1-Historical)
No. Ambient Sites: 0
No. of NPDES MOR Sites: 1
Other:

Cause:
No. Ambient Sampling Records: 0
No. of NPDES MOR Records: 18

Geometric Mean: 156
75th %ile: 388
90th %ile: 790

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A small amount of data were collected in this watershed, but there are not enough sampling locations to do a complete aquatic life assessment. One biological reference site was sampled on Leith Run in 2000.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 148.9

05030201 090

Little Muskingum River (headwaters to upstream Clear Fork)

Integrated Report Assessment Category: 5

Priority Points: 3

Next Scheduled Monitoring: 2015

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 2000

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	7 Site(s)	7 Site(s)						
Primary Tributaries								
5-20 mi ²	10 Site(s)	10 Site(s)	100.0	0.0	0.0			
20-50 mi ²	3 Site(s)	3 Site(s)				94	4	2
Principal Streams								
50-500 mi ²	5 Site(s)							
	23.8 Miles	20.8 Miles	87.4	8.40	4.20			

High Magnitude Causes

High Magnitude Sources

Siltation

Nonirrigated Crop Production
Pasture Land

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

An intensive biological and water quality survey was conducted in the Little Muskingum River watershed in 2000.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 165.7

05030201 100

Little Muskingum River (upstream Clear Fork to mouth)

Integrated Report Assessment Category: 5

Priority Points: 4

Next Scheduled Monitoring: 2015

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 1996, 2000

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	12 Site(s)	12 Site(s)						
Primary Tributaries								
5-20 mi ²	14 Site(s)	14 Site(s)	100.0	0.0	0.0			
20-50 mi ²	2 Site(s)	2 Site(s)				77	21	2
Principal Streams								
50-500 mi ²	7 Site(s)							
	34.5 Miles	18.7 Miles	54.3	42.8	2.90			

High Magnitude Causes

High Magnitude Sources

Nutrients
Siltation
Flow Alteration

Nonirrigated Crop Production
Pasture Land
Onsite Wastewater Systems (Septic Tanks)

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

An intensive biological and water quality survey was conducted in the Little Muskingum River watershed in 2000.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 136.2

05030201 110

East Fork Duck Creek

Integrated Report Assessment Category: 5

Priority Points: 3

Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LWH
Impairment: Yes (4A-TMDL)

Sampling Year(s): 1998, 2000

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	39 Site(s)	27 Site(s)						
Primary Tributaries								
5-20 mi ²	7 Site(s)	4 Site(s)	56.6	24.1	19.3			
20-50 mi ²	4 Site(s)	2 Site(s)						
Principal Streams						72	18	10
50-500 mi ²	4 Site(s)							
	14.5 Miles	12.8 Miles	88.0	12.0	0.00			

High Magnitude Causes

High Magnitude Sources

Cause Unknown
Metals
Siltation
Organic Enrichment/DO
Flow Alteration
Direct Habitat Alterations
Suspended Solids
Total Toxics

Pasture Land
Highway/Road/Bridge/Sewer Line
Urban Runoff/Storm Sewers (NPS)
Surface Mining
Acid Mine Drainage
Onsite Wastewater Systems (Septic Tanks)
Bridge Construction
Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (5)
No. Ambient Sites: 0
No. of NPDES MOR Sites: 0
Other:

Cause: Pathogens
No. Ambient Sampling Records: 0
No. of NPDES MOR Records: 0

Geometric Mean:
75th %ile:
90th %ile:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
Stream Miles Monitored: 2.00 Stream Miles Impaired: Pollutants (Waterbody):
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

TMDLs for pollutants impairing the aquatic life beneficial use in the Duck Creek watershed were approved by the U.S. EPA on September 23, 2003. Monitoring in support of the TMDL was conducted in 2000. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Recent bacteria data have indicated a recreation use impairment.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11

WAU Description

WAU Size (mi²): 149.6

05030201 120

Duck Creek; West Fork Duck Creek

Integrated Report Assessment Category: 5

Priority Points: 5

Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW LWH

Sampling Year(s): 1997, 1998, 2000

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	36 Site(s)	28 Site(s)						
Primary Tributaries								
5-20 mi ²	3 Site(s)	2 Site(s)	86.1	9.8	4.1			
20-50 mi ²	2 Site(s)	2 Site(s)				90	6	4
Principal Streams								
50-500 mi ²	17 Site(s) 50.4 Miles	46.9 Miles	93.0	3.00	4.00			

High Magnitude Causes

Unknown Toxicity
Siltation
Organic Enrichment/DO
Flow Alteration

High Magnitude Sources

Urban Runoff/Storm Sewers (NPS)
Surface Mining
Onsite Wastewater Systems (Septic Tanks)
Upstream Impoundment
Flow Reg./Mod. - Development
Spills

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 516

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 775

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 15

90th %ile: 1913

Other:

Public Drinking Water Supply Assessment

Location(s): Wolf Run @RM 0.7 (Wolf Run Lake) , Dog Run @RM 1.35 (Caldwell Lake) [Caldwell]

Impairment: No (1)

Nitrate Indicator: Full Support

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 13.20 Stream Miles Impaired: 11.20 Pollutants (Waterbody): PCBs, DDT (Duck

Lake Acres Monitored: 209.0 Lake Acres Impaired: Creek)

WAU Comments

TMDLs for pollutants impairing the aquatic life beneficial use in the Duck Creek watershed were approved by the U.S. EPA on September 23, 2003. Monitoring in support of the TMDL was conducted in 2000. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Besides the historical aquatic life use impairment, the 2004 Integrated Report assessment of fish tissue data documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. Recent bacteria data have indicated a recreation use impairment.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 141.3**
 05030202 010 Ohio River tributaries (downstream Muskingum R. to upstream Hocking River); Little Hocking River
Integrated Report Assessment Category: 3 **Priority Points:**
Next Scheduled Monitoring: 2014

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s):
 Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3) Cause:
 No. Ambient Sites: No. Ambient Sampling Records: Geometric Mean:
 No. of NPDES MOR Sites: No. of NPDES MOR Records: 75th %ile:
 Other: 90th %ile:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 160.0 Lake Acres Impaired:

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 27.9
 05030202 020 Ohio River tributaries (downstream Hocking River to upstream Shade River)
Integrated Report Assessment Category: 3 **Priority Points:**
Next Scheduled Monitoring: 2014

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH Sampling Year(s):
 Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams	Site(s)							
50-500 mi ²	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3) Cause: Geometric Mean:
 No. of Ambient Sites: No. of Ambient Sampling Records: 75th %ile:
 No. of NPDES MOR Sites: No. of NPDES MOR Records: 90th %ile:
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

No data have ever been collected on streams in this watershed.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 128.9

05030202 030

Middle Branch and West Branch Shade River

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2014

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH
Impairment: Unknown (3)

Sampling Year(s):

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams	Site(s)							
50-500 mi ²	Miles	Miles						
<u>High Magnitude Causes</u>					<u>High Magnitude Sources</u>			

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Unknown (3)
No. Ambient Sites:
No. of NPDES MOR Sites:
Other:

Cause:
No. Ambient Sampling Records:
No. of NPDES MOR Records:

Geometric Mean:
75th %ile:
90th %ile:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A small amount of data were collected in this watershed, but there are not enough sampling locations to do a complete assessment. Another survey of the watershed is needed to reassess the status.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 92.1

05030202 040

Shade River (Middle Branch and West Branch to mouth)

Integrated Report Assessment Category: 5

Priority Points: 2

Next Scheduled Monitoring: 2014

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 5.20 Stream Miles Impaired: 5.20 Pollutants (Waterbody): PCBs (Shade River)

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

The 2006 Integrated Report assessment of fish tissue data from the Shade River documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 150.1
05030202 090 Leading Creek

Integrated Report Assessment Category: 5 **Priority Points: 4**
Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 2004, 2005
Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	16 Site(s)	7 Site(s)						
Primary Tributaries								
5-20 mi ²	12 Site(s)	8 Site(s)	27.6	22.4	50.0			
20-50 mi ²	4 Site(s)	0 Site(s)						
						38	16	46
Principal Streams								
50-500 mi ²	7 Site(s)							
	18.9 Miles	9.2 Miles	48.7	8.50	42.8			

High Magnitude Causes

Salinity/TDS/Chlorides
Direct Habitat Alterations (Sand Bedload)
pH
Siltation
Natural Limits (Low Flow)

High Magnitude Sources

Surface Mining
Subsurface Mining
Acid Mine Drainage
Nonirrigated Crop Production
Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (5) Cause: Pathogens Geometric Mean: 395
No. of Ambient Sites: 17 No. of Ambient Sampling Records: 29 75th %ile: 860
No. of NPDES MOR Sites: 0 No. of NPDES MOR Records: 0 90th %ile: 2160
Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report completed by a U.S. EPA contractor developing TMDLs for pollutants impairing aquatic life uses in the Leading Creek watershed was approved by U.S. EPA on January 9, 2008. Monitoring in support of the TMDLs was conducted in 2004 and 2005 by the Midwest Biodiversity Institute (aquatic life use assessment) and the Leading Creek Improvement Committee (recreation use assessment). This TMDL report addresses total dissolved solids, total suspended solids, and chlorides in the watershed but TMDLs are still needed for nutrients, bacteria, and pH. As such, the assessment unit will remain Category 5 until TMDLs for all pollutants impairing all beneficial uses have been developed. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 88.8
 05030202 100 Ohio River tributaries (downstream Leading Creek to upstream Kanawha River [WV])
Integrated Report Assessment Category: 5 **Priority Points: 1**
Next Scheduled Monitoring: 2014

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW Sampling Year(s): 1982, 1990, 1993
 Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	5 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	0 Site(s)	0.0	16.7	83.3			
20-50 mi ²	3 Site(s)	0 Site(s)				0	17	83
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

Metals
 pH
 Siltation
 Flow Alteration
 Direct Habitat Alterations

High Magnitude Sources

Industrial Point Sources
 Nonirrigated Crop Production
 Surface Mining
 Subsurface Mining
 Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3) Cause:
 No. of Ambient Sites: No. of Ambient Sampling Records: Geometric Mean:
 No. of NPDES MOR Sites: No. of NPDES MOR Records: 75th %ile:
 Other: 90th %ile:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected from Campaign Creek (1993), Kyger Creek (1990) and Bell Lick Run (1982) were used in the 2002 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use. These data have exceeded the ten-year threshold and are now considered historical. However, while reflecting the current status that no data are available to assess beneficial use status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the U.S. EPA.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 132.0**
 05030204 010 Hocking River (headwaters to Enterprise); excluding Rush Creek and
 Clear Creek

Integrated Report Assessment Category: 5 **Priority Points: 10**
Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C Sampling Year(s): 2004
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	11 Site(s)	6 Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	5 Site(s)	84.5	13.3	2.3			
20-50 mi ²	1 Site(s)	1 Site(s)						
Principal Streams						82	17	1
50-500 mi ²	7 Site(s)							
	16.2 Miles	12.7 Miles	78.7	21.3	0.00			

High Magnitude Causes

Direct Habitat Alterations
 Siltation
 Nutrients
 Organic Enrichment/DO

High Magnitude Sources

Channelization - Agriculture
 Nonirrigated Crop Production
 Removal of Riparian Vegetation - Agriculture
 Major Municipal Point Source
 Combined Sewer Overflow
 Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 1096
 No. of Ambient Sites: 26 No. of Ambient Sampling Records: 201 75th %ile: 2600
 No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 57 90th %ile: 8740
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 21.80 Stream Miles Impaired: 21.80 Pollutants (Waterbody): PCBs (Hocking River)
 Lake Acres Monitored: 33.3 Lake Acres Impaired:

WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway in the Hocking River watershed. Monitoring in support of TMDL development was conducted in 2004. Significant streams sampled in this assessment unit included the Hocking River, Pleasant Run, and Hunters Run.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 98.9

05030204 020

Rush Creek (headwaters to upstream Little Rush Creek)

Integrated Report Assessment Category: 5

Priority Points: 1

Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW

Sampling Year(s): 2004

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	7 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	4 Site(s)	2 Site(s)	12.5	30.0	57.4			
20-50 mi ²	3 Site(s)	0 Site(s)				6	15	79
Principal Streams								
50-500 mi ²	1 Site(s)							
	5.2 Miles	0.0 Miles	0.00	0.00	100			

High Magnitude Causes

High Magnitude Sources

pH
Salinity/TDS/Chlorides
Aluminum
Siltation
Nutrients
Organic Enrichment/DO
Direct Habitat Alterations

Acid Mine Drainage
Minor Municipal Point Source
Nonirrigated Crop Production
Pasture Land
Upstream Impoundment
Streambank Modification/Destabilization - Agriculture
Streambank Modification/Destabilization - Development

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1)

Cause:

Geometric Mean: 56

No. Ambient Sites: 18

No. Ambient Sampling Records: 94

75th %ile: 290

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 195

90th %ile: 1600

Other:

Public Drinking Water Supply Assessment

Location(s): Center Branch Rush Creek @RM 5.45, Unnamed Tributary (Somerset Creek RM 1.84) @RM 0.89 [Somerset]; Yeager Creek (Rush Creek RM 28.46) @RM 1.0; New Lexington Reservoir [New Lexington]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 104.0 Lake Acres Impaired:

WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway in the Hocking River watershed. Monitoring in support of TMDL development was conducted in 2004. Significant streams sampled in this assessment unit included Rush Run, Center Branch, and Somerset Creek.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 136.0
05030204 030 Rush Creek (upstream Little Rush Creek to mouth)

Integrated Report Assessment Category: 5 **Priority Points: 5**
Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: CWH,WWH,MWH-C,LRW Sampling Year(s): 2004
Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	5 Site(s)	3 Site(s)						
Primary Tributaries								
5-20 mi ²	7 Site(s)	4 Site(s)	79.3	7.1	13.6			
20-50 mi ²	2 Site(s)	2 Site(s)				90	3	7
Principal Streams								
50-500 mi ²	6 Site(s)							
	21.8 Miles	21.8 Miles	100	0.00	0.00			

High Magnitude Causes

Organic Enrichment/DO
Nutrients
Direct Habitat Alterations
Siltation

High Magnitude Sources

Other (Nonpermitted Industrial Stormwater)
Minor Municipal Point Source
Removal of Riparian Vegetation - Agriculture
Nonirrigated Crop Production
Channelization - Agriculture
Upstream Impoundment
Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (5) Cause: Pathogens Geometric Mean: 388
No. of Ambient Sites: 20 No. of Ambient Sampling Records: 136 75th %ile: 1070
No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 16 90th %ile: 2570
Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
Stream Miles Monitored: 2.10 Stream Miles Impaired: Pollutants (Waterbody):
Lake Acres Monitored: 343.0 Lake Acres Impaired:

WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway in the Hocking River watershed. Monitoring in support of TMDL development was conducted in 2004. Significant streams sampled in this assessment unit included Rush Creek, Little Rush Creek, Raccoon Run, and Indian Creek.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 91.8

05030204 040

Clear Creek

Integrated Report Assessment Category: 2

Priority Points:

Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: CWH,WWH
Impairment: No (1)

Sampling Year(s): 2004

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	3 Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	6 Site(s)	100.0	0.0	0.0			
20-50 mi ²	2 Site(s)	2 Site(s)				100	0	0
Principal Streams								
50-500 mi ²	1 Site(s)							
	8.9 Miles	8.9 Miles	100	0.00	0.00			
<u>High Magnitude Causes</u>			<u>High Magnitude Sources</u>					

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: No (1)
No. Ambient Sites: 13
No. of NPDES MOR Sites: 1
Other:

Cause:
No. Ambient Sampling Records: 77
No. of NPDES MOR Records: 17

Geometric Mean: 382
75th %ile: 598
90th %ile: 1270

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
Stream Miles Monitored: 4.80 Stream Miles Impaired: Pollutants (Waterbody):
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway in the Hocking River watershed. Monitoring in support of TMDL development was conducted in 2004. Significant streams sampled in this assessment unit included Clear Creek.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 126.3**
 05030204 050 Hocking River (Enterprise to upstream Monday Creek); excluding
 Hocking R. mainstem dst. Scott Creek

Integrated Report Assessment Category: 5 **Priority Points: 6**
Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 2004
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	8 Site(s)	4 Site(s)						
Primary Tributaries								
5-20 mi ²	10 Site(s)	6 Site(s)	52.5	45.0	2.5			
20-50 mi ²	2 Site(s)	1 Site(s)				76	23	1
Principal Streams								
50-500 mi ²	1 Site(s)							
	4.4 Miles	4.4 Miles	100	0.00	0.00			

High Magnitude Causes

Siltation
 Direct Habitat Alterations
 Nutrients
 pH
 Natural Limits
 Cause Unknown
 Organic Enrichment/DO

High Magnitude Sources

Removal of Riparian Vegetation - Agriculture
 Streambank Modification/Destabilization - Ag.
 Acid Mine Drainage
 Natural
 Source Unknown
 Pasture Land
 Upstream Impoundment

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: No (1) Cause:
 No. of Ambient Sites: 23 No. of Ambient Sampling Records: 115 Geometric Mean: 337
 No. of NPDES MOR Sites: 0 No. of NPDES MOR Records: 0 75th %ile: 700
 Other: 90th %ile: 1660

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 4.44 Stream Miles Impaired: 4.44 Pollutants (Waterbody): PCBs (Hocking River)
 Lake Acres Monitored: 354.0 Lake Acres Impaired:

WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway in the Hocking River watershed. Monitoring in support of TMDL development was conducted in 2004. Significant streams sampled in this assessment unit included the Hocking River, Scott Creek, and Oldtown Creek.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 116.0

05030204 060

Monday Creek

Integrated Report Assessment Category: 4A

Priority Points:

Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW
Impairment: Yes (4A-TMDL)

Sampling Year(s): 2001

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	39 Site(s)	6 Site(s)						
Primary Tributaries								
5-20 mi ²	9 Site(s)	1 Site(s)	6.6	12.2	81.2			
20-50 mi ²	9 Site(s)	0 Site(s)						
Principal Streams								
50-500 mi ²	7 Site(s)					3	6	91
	14.3 Miles	0.0 Miles	0.00	0.00	100			

High Magnitude Causes

High Magnitude Sources

Metals
pH
Siltation
Flow Alteration

Surface Mining
Acid Mine Drainage

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1)

Cause:

Geometric Mean: 91

No. of Ambient Sites: 56

No. of Ambient Sampling Records: 66

75th %ile: 300

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90th %ile: 577

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

The "Hocking River Basin, Ohio, Monday Creek Sub-basin Ecosystem Restoration Project Feasibility Report and Draft Environmental Assessment" was approved by U.S. EPA on September 22, 2005, as a Total Maximum Daily Load (TMDL) report. This multi-agency effort, led by the U.S. Army Corps of Engineers-Huntington District (U.S. ACE) and the Ohio Department of Natural Resources and including the direct involvement of the local watershed group, culminated in a document that satisfied multiple program requirements (including TMDLs for pollutants impairing aquatic life uses) and prioritized Monday Creek for implementation funding from a variety of sources. The report is available at <http://www.epa.state.oh.us/dsw/tmdl/MondayCreekTMDL.html>. Monitoring in support of the assessment effort was conducted in 2001.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 138.7

05030204 070

Sunday Creek

Integrated Report Assessment Category: 4A

Priority Points:

Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH,LRW,LWH

Sampling Year(s): 2001

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	49 Site(s)	25 Site(s)						
Primary Tributaries								
5-20 mi ²	13 Site(s)	0 Site(s)	12.7	33.8	53.5			
20-50 mi ²	6 Site(s)	0 Site(s)				6	37	57
Principal Streams								
50-500 mi ²	13 Site(s)							
	14.6 Miles	0.0 Miles	0.00	39.0	61.0			

High Magnitude Causes

High Magnitude Sources

Metals
pH
Siltation
Flow Alteration

Surface Mining
Acid Mine Drainage

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (4A-TMDL)

Cause: Pathogens

Geometric Mean: 1362

No. Ambient Sites: 8

No. Ambient Sampling Records: 38

75th %ile: 2750

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90th %ile: 5800

Other:

Public Drinking Water Supply Assessment

Location(s): East Branch Sunday Creek @RM 0.23 [Burr Oak Regional]

Impairment: No (1)

Nitrate Indicator: Full Support

Cause:

Pesticide Indicator: Full Support

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Sunday Creek watershed were approved by U.S. EPA on March 31, 2006. Monitoring in support of the TMDL development was conducted in 2001. The impairment in this watershed that results from acid mine drainage (AMD) will be addressed by implementing prescriptions found in the Acid Mine Drainage Abatement and Treatment (AMDAT) plan that was produced by the Sunday Creek Watershed Group. The watershed action plan, which was also produced by the Sunday Creek Watershed Group, will be instrumental in providing implementation action items that address bacteria and habitat issues. Currently, impairments related to bacteria are to be mitigated primarily by improving home sewage treatment. See <http://www.epa.state.oh.us/dsw/tmdl/SundayCreekTMDL.html> for more information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 144.6

05030204 090

Federal Creek

Integrated Report Assessment Category: 5

Priority Points: 5

Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 2004, 2006

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	13 Site(s)	9 Site(s)						
Primary Tributaries								
5-20 mi ²	17 Site(s)	16 Site(s)	90.8	5.3	3.9			
20-50 mi ²	7 Site(s)	7 Site(s)				95	3	2
Principal Streams								
50-500 mi ²	5 Site(s)							
	11.2 Miles	11.2 Miles	100	0.00	0.00			

High Magnitude Causes

Sedimentation/Siltation
Organic Enrichment/DO
Nutrients
Other Flow Alterations
Natural Conditions (Flow or Habitat)
Aluminum

High Magnitude Sources

Streambank Modifications/Destabilization
Loss of Riparian Vegetation
Natural Sources
On-Site Treatment Systems (Septic Systems and Similar Decentralized Systems)
Acid Mine Drainage

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 390

No. Ambient Sites: 38

No. Ambient Sampling Records: 131

75th %ile: 755

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90th %ile: 3100

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 7.80 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway in the Hocking River watershed. Monitoring in support of TMDL development was conducted in the Federal Creek assessment unit in 2004. Significant streams sampled in this assessment unit included Federal Creek, Sharps Fork, and McDougall Branch. Limited follow-up monitoring at sites in Federal Creek was conducted in 2006. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²):** 109.7
 05030204 100 Hocking River (downstream Athens/RM 33.1 to mouth); excluding Federal
 Creek and Hocking R. mainstem

Integrated Report Assessment Category: 5 **Priority Points: 4**
Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 2004
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	6 Site(s)	6 Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	3 Site(s)	75.0	16.7	8.3			
20-50 mi ²	Site(s)	Site(s)				75	17	8
Principal Streams								
50-500 mi ²	Site(s)	Miles						

High Magnitude Causes

Siltation
 Salinity/TDS/Chlorides
 Organic Enrichment/DO
 Flow Alteration
 Nutrients

High Magnitude Sources

Natural
 Removal of Riparian Vegetation - Agriculture
 Acid Mine Drainage
 Upstream Impoundment
 Hydromodification - Development

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: No (1) Cause: Geometric Mean: 156
 No. of Ambient Sites: 11 No. of Ambient Sampling Records: 53 75th %ile: 290
 No. of NPDES MOR Sites: 0 No. of NPDES MOR Records: 0 90th %ile: 662
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: No (1)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 161.0 Lake Acres Impaired:

WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway in the Hocking River watershed. Monitoring in support of TMDL development was conducted in 2004. Significant streams sampled in this assessment unit included Strouds Run, Jordan Run, Willow Creek, and Fourmile Creek.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 187.6

05040001 020

Chippewa Creek

Integrated Report Assessment Category: 5

Priority Points: 8

Next Scheduled Monitoring: 2017

Aquatic Life Use Assessment

Subcategories of ALU: WWH, MWH-C

Sampling Year(s): 2004

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	6 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	13 Site(s)	6 Site(s)	40.7	32.7	26.6			
20-50 mi ²	4 Site(s)	2 Site(s)				64	23	13
Principal Streams								
50-500 mi ²	2 Site(s)							
	14.5 Miles	12.5 Miles	86.2	13.8	0.00			

High Magnitude Causes

Direct Habitat Alterations
Flow Alteration
Siltation
Organic Enrichment/DO
Nutrients
Cause Unknown

High Magnitude Sources

Nonirrigated Crop Production
Pasture Land
Land Development/Suburbanization
Upstream Impoundment
Major Municipal Point Source
Minor Municipal Point Source
Sludge
Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 710

No. Ambient Sites: 32

No. Ambient Sampling Records: 118

75th %ile: 1900

No. of NPDES MOR Sites: 9

No. of NPDES MOR Records: 254

90th %ile: 4154

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 12.30 Stream Miles Impaired: 12.30 Pollutants (Waterbody): PCBs,

Lake Acres Monitored: 0.0 Lake Acres Impaired: Hexachlorobenzene (Chippewa Creek)

WAU Comments

Intensive chemical, physical, and biological sampling was conducted in the assessment unit in 2004 as part of monitoring in the Tuscarawas River watershed to develop TMDLs for pollutants causing beneficial use impairments. The 2006 Integrated Report assessment of available fish tissue data from Chippewa Creek documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 134.5

05040001 040

Sandy Creek (headwaters to downstream Still Fork)

Integrated Report Assessment Category: 5

Priority Points: 2

Next Scheduled Monitoring: 2012

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 6.83 Stream Miles Impaired: 5.63 Pollutants (Waterbody): PCBs (Sandy Creek)

Lake Acres Monitored: 41.0 Lake Acres Impaired:

WAU Comments

No recent biological community and water quality data were available for this assessment unit to determine status of the aquatic life uses. As such, this assessment unit was listed as Category 3 (unassessed) in the 2002 Integrated Report. However, the 2004 Integrated Report assessment of fish tissue data documented body burdens of pollutants at levels reflecting a violation(s) of Ohio Water Quality Standards criteria and was thus listed as impaired for fish consumption.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 187.9

05040001 050

Nimishillen Creek

Integrated Report Assessment Category: 5

Priority Points: 6

Next Scheduled Monitoring: 2017

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C,LRW

Sampling Year(s): 1998, 2003-2005

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	5 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	12 Site(s)	2 Site(s)	8.3	29.2	62.5			
20-50 mi ²	12 Site(s)	1 Site(s)				4	39	57
Principal Streams								
50-500 mi ²	7 Site(s)							
	14.7 Miles	0.0 Miles	0.00	49.0	51.0			

High Magnitude Causes

High Magnitude Sources

Nutrients
Nitrates
Ammonia
Other Flow Regime Alterations
Sulfates
pH
Temperature, Water
Oxygen, Dissolved
Organic Enrichment (Sewage) Biological Indicators

Direct Habitat Alterations
Sedimentation/Siltation
Impairment Unknown

Urban Runoff/Storm Sewers
Municipal (Urbanized High Density Area)
Spills
Industrial Point Sources
Municipal Point Sources
Subsurface (Hardrock) Mining
Agriculture
Channelization
On-Site Treatment Systems (Septic Systems and Similar Decentralized Systems)
Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

No. Ambient Sites: 32

No. of NPDES MOR Sites: 5

Other:

Cause: Pathogens

No. Ambient Sampling Records: 169

No. of NPDES MOR Records: 201

Geometric Mean: 970

75th %ile: 2200

90th %ile: 5621

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Cause:

Nitrate Indicator:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 20.40 Stream Miles Impaired: 15.60 Pollutants (Waterbody): PCBs (Nimishillen Creek, Middle Branch Nimishillen Creek, East Branch Nimishillen Creek, and West Branch Nimishillen Creek)

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Chemical, physical, and biological sampling was conducted in the Nimishillen Creek watershed in 2003, 2004, and 2005 as part of monitoring in the Tuscarawas River basin to develop TMDLs for pollutants causing beneficial use impairments. Significant streams sampled included Nimishillen Creek, Middle Branch Nimishillen Creek, East Branch Nimishillen Creek, and West Branch Nimishillen Creek. 1998 data included in the assessment were restricted to a few sites in the Hurford Run sub-watershed. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 181.1**
 05040001 060 Sandy Creek (downstream Still Fork to mouth); excluding Nimishillen
 Creek
Integrated Report Assessment Category: 5 **Priority Points: 3**
Next Scheduled Monitoring: 2012

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 1996, 1997, 1998,
 Impairment: Yes (5) 2002

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	2 Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	1 Site(s)	29.2	25.0	45.8			
20-50 mi ²	2 Site(s)	0 Site(s)						
						21	39	40
Principal Streams								
50-500 mi ²	8 Site(s)							
	11.3 Miles	1.5 Miles	13.3	53.1	33.6			

High Magnitude Causes

Cause Unknown
 Unknown Toxicity
 Siltation
 Direct Habitat Alterations

High Magnitude Sources

Municipal Point Source
 Source Unknown
 Channelization - Agriculture
 Removal of Riparian Vegetation - Ag.

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: No (1) Cause: Geometric Mean: 106
 No. of Ambient Sites: 1 No. of Ambient Sampling Records: 3 75th %ile: 429
 No. of NPDES MOR Sites: 4 No. of NPDES MOR Records: 72 90th %ile: 1372
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 29.07 Stream Miles Impaired: 29.07 Pollutants (Waterbody): PCBs (Sandy Creek)
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

The upper portion of Sandy Creek was sampled by Ohio EPA Division of Emergency and Remedial Response from 1996 to 1998. Tributaries were sampled in 2002 by Ohio DNR Division of Wildlife.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 141.8

05040001 070

Conotton Creek (headwaters to downstream McGuire Creek)

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2012

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 786

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 1225

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 8

90th %ile: 4150

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 3.12 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A small amount of data were collected in this watershed, but there are not enough sampling locations to do a complete assessment. The last major Ohio EPA survey done within this watershed was in 1982. Only two biological reference sites have been sampled since then.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 144.3

05040001 080

Conotton Creek (downstream McGuire Creek to mouth)

Integrated Report Assessment Category: 2

Priority Points:

Next Scheduled Monitoring: 2012

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1)

Cause:

Geometric Mean: 369

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 1100

No. of NPDES MOR Sites: 3

No. of NPDES MOR Records: 82

90th %ile: 1990

Other:

Public Drinking Water Supply Assessment

Location(s): Indian Fork @RM 3.0 and 3.7 (Atwood Lake) [Atwood Park and Resort]

Impairment: No (1)

Nitrate Indicator: Full Support

Cause:

Pesticide Indicator: Full Support

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 16.88 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 1540.0 Lake Acres Impaired:

WAU Comments

A small amount of data were collected in this watershed, but there are not enough sampling locations to do a complete assessment. The last major Ohio EPA survey done within this watershed was in 1982. Only one biological reference site has been sampled since then.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 113.4**
 05040001 090 Tuscarawas River (downstream Sippo Creek to upstream Sugar Creek);
 excluding Tuscarawas R. mainstem

Integrated Report Assessment Category: 5 **Priority Points: 6**
Next Scheduled Monitoring: 2017

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW Sampling Year(s): 2002, 2003, 2004
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	5 Site(s)	2 Site(s)						
Primary Tributaries								
5-20 mi ²	4 Site(s)	3 Site(s)	57.5	0.0	42.5			
20-50 mi ²	Site(s)	Site(s)				57	0	43
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

Siltation
 Metals
 pH
 Flow Alteration
 Nutrients

High Magnitude Sources

Surface Mining
 Acid Mine Drainage
 Land Development/Suburbanization
 Nonirrigated Crop Production

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 837
 No. of Ambient Sites: 10 No. of Ambient Sampling Records: 40 75th %ile: 2300
 No. of NPDES MOR Sites: 0 No. of NPDES MOR Records: 0 90th %ile: 5060
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological sampling was conducted in the assessment unit in 2003 and 2004 as part of monitoring in the Tuscarawas River watershed to develop TMDLs for pollutants causing beneficial use impairments.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 97.3

05040001 100 Sugar Creek (headwaters to upstream Middle Fork)

Integrated Report Assessment Category: 4A

Priority Points:

Next Scheduled Monitoring: 2017

Aquatic Life Use Assessment

Subcategories of ALU: WWH
Impairment: Yes (4A-TMDL)

Sampling Year(s): 1998

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	7 Site(s)	4 Site(s)	53.5	7.2	39.3			
20-50 mi ²	2 Site(s)	1 Site(s)						
						27	3	70
Principal Streams								
50-500 mi ²	3 Site(s)							
	15.0 Miles	0.0 Miles	0.00	0.00	100			

High Magnitude Causes

Nutrients
Siltation
Organic Enrichment/DO
Direct Habitat Alterations
Natural Limits (Wetlands)

High Magnitude Sources

Nonirrigated Crop Production
Pasture Land
Feedlots (Confined Animal Feeding Oper.)
Animal Holding/Management Areas
Onsite Wastewater Systems (Septic Tanks)
Channelization - Agriculture
Removal of Riparian Vegetation - Ag.
Streambank Destabilization - Ag.
Natural Conditions (Flow or Habitat)

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (4A-TMDL)

Cause: Pathogens

Geometric Mean: 1406

No. Ambient Sites: 10

No. Ambient Sampling Records: 61

75th %ile: 2750

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 29

90th %ile: 10010

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

TMDLs for pollutants impairing beneficial uses in the Sugar Creek watershed were approved by U.S. EPA on November 20, 2002 (aquatic life) and May 8, 2007 (recreation). Chemical, physical, and biological monitoring in support of the TMDLs was conducted in 1998 and 2005. See <http://www.epa.state.oh.us/dsw/tmdl/SugarCreekTMDL.html> for more information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 137.7

05040001 110

South Fork Sugar Creek

Integrated Report Assessment Category: 4A

Priority Points:

Next Scheduled Monitoring: 2017

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 1998

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	14 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	15 Site(s)	2 Site(s)	3.4	47.6	49.0			
20-50 mi ²	4 Site(s)	0 Site(s)						
Principal Streams								
50-500 mi ²	4 Site(s)					2	37	61
	13.5 Miles	0.0 Miles	0.00	25.9	74.1			

High Magnitude Causes

High Magnitude Sources

Cause Unknown
Iron
Unionized Ammonia
Nutrients
pH
Siltation
Organic Enrichment/DO
Flow Alteration

Direct Habitat Alterations
Natural Limits (Wetlands)

Minor Industrial Point Source
Nonirrigated Crop Production
Pasture Land
Surface Mining
Industrial Land Treatment
Channelization - Agriculture
Flow Regulation/ Modification - Ag.
Removal of Riparian Vegetation - Ag.

Streambank Destabilization - Ag.
Natural Conditions (Flow or Habitat)
Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (4A-TMDL)

No. Ambient Sites: 14

No. of NPDES MOR Sites: 3

Other:

Cause: Pathogens

No. Ambient Sampling Records: 84

No. of NPDES MOR Records: 49

Geometric Mean: 3721

75th %ile: 7800

90th %ile: 14960

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Cause:

Nitrate Indicator:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 2.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

TMDLs for pollutants impairing beneficial uses in the Sugar Creek watershed were approved by U.S. EPA on November 20, 2002 (aquatic life) and May 8, 2007 (recreation). Chemical, physical, and biological monitoring in support of the TMDLs was conducted in 1998 and 2005. See <http://www.epa.state.oh.us/dsw/tmdl/SugarCreekTMDL.html> for more information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 121.3
 05040001 120 Sugar Creek (upstream Middle Fork to mouth); excluding South Fork

Integrated Report Assessment Category: 4A **Priority Points:**
Next Scheduled Monitoring: 2017

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 1998
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	7 Site(s)	3 Site(s)						
Primary Tributaries								
5-20 mi ²	9 Site(s)	4 Site(s)	46.8	27.8	25.4			
20-50 mi ²	2 Site(s)	1 Site(s)						
						28	37	35
Principal Streams								
50-500 mi ²	8 Site(s)							
	19.5 Miles	2.0 Miles	10.3	46.1	43.6			

High Magnitude Causes

Unknown Toxicity
 Metals
 pH
 Siltation
 Direct Habitat Alterations
 Natural Limits (Wetlands)

High Magnitude Sources

Major Industrial Point Source
 Nonirrigated Crop Production
 Pasture Land
 Surface Mining
 Landfills
 Channelization - Agriculture
 Flow Reg./Mod. - Ag.
 Removal of Riparian Vegetation - Ag.
 Streambank Destabilization - Ag.
 Natural Conditions (Flow or Habitat)

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (4A-TMDL) Cause: Pathogens Geometric Mean: 1178
 No. of Ambient Sites: 13 No. of Ambient Sampling Records: 91 75th %ile: 2800
 No. of NPDES MOR Sites: 3 No. of NPDES MOR Records: 64 90th %ile: 6440
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
 Stream Miles Monitored: 0.40 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 420.0 Lake Acres Impaired:

WAU Comments

TMDLs for pollutants impairing beneficial uses in the Sugar Creek watershed were approved by U.S. EPA on November 20, 2002 (aquatic life) and May 8, 2007 (recreation). Chemical, physical, and biological monitoring in support of the TMDLs was conducted in 1998 and 2005. See <http://www.epa.state.oh.us/dsw/tmdl/SugarCreekTMDL.html> for more information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 100.1
 05040001 130 Tuscarawas River (downstream Sugar Cr. to upstream Stillwater Cr.);
 excluding Tuscarawas R. mainstem

Integrated Report Assessment Category: 5 **Priority Points: 8**
Next Scheduled Monitoring: 2017

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C,LRW Sampling Year(s): 2003, 2004
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	7 Site(s)	2 Site(s)	40.5	3.5	56.0			
20-50 mi ²	2 Site(s)	1 Site(s)						
						41	3	56
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

Siltation
 Metals
 Organic Enrichment/DO
 Direct Habitat Alterations
 Flow Alteration
 pH

High Magnitude Sources

Surface Mining
 Onsite Wastewater Systems (Septic Tanks)
 Land Development/Suburbanization
 Nonirrigated Crop Production
 Pasture Land
 Acid Mine Drainage

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 1806
 No. of Ambient Sites: 13 No. of Ambient Sampling Records: 55 75th %ile: 5950
 No. of NPDES MOR Sites: 0 No. of NPDES MOR Records: 0 90th %ile: 22800
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological sampling was conducted in the assessment unit in 2003 and 2004 as part of monitoring in the Tuscarawas River watershed to develop TMDLs for pollutants causing beneficial use impairments.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 122.1

05040001 140

Stillwater Creek (headwaters to downstream Boggs Fork)

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2012

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data			% Attainment			WAU Score		
	Data Available	No. Attaining		Full	Partial	Non	Full	Partial	Non
Secondary Tributaries									
< 5 mi ²	Site(s)	Site(s)							
Primary Tributaries									
5-20 mi ²	Site(s)	Site(s)							
20-50 mi ²	Site(s)	Site(s)							
Principal Streams									
50-500 mi ²	Site(s)								
	Miles	Miles							
<u>High Magnitude Causes</u>					<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 2310.0 Lake Acres Impaired:

WAU Comments

A small amount of data were collected in this watershed, but there are not enough sampling locations to do a complete assessment. The only data are from two small streams in a reclaimed mining area owned by Ohio Department of Natural Resources, sampled in 2000.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 159.1
 05040001 150 Stillwater Creek (downstream Boggs Fork to downstream Brushy Fork)

Integrated Report Assessment Category: 5 **Priority Points: 1**
Next Scheduled Monitoring: 2012

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LWH Sampling Year(s): 1994, 1998
 Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	2 Site(s)	16.6	16.7	66.7			
20-50 mi ²	1 Site(s)	0 Site(s)				17	16	67
Principal Streams								
50-500 mi ²	Site(s)	Miles						

High Magnitude Causes

Siltation
 Direct Habitat Alterations

High Magnitude Sources

Nonirrigated Crop Production
 Range Grazing - Riparian
 Pasture Land
 Channelization - Agriculture
 Surface Mining
 Flow Regulation/Modification

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3) Cause:
 No. of Ambient Sites: No. of Ambient Sampling Records: Geometric Mean:
 No. of NPDES MOR Sites: No. of NPDES MOR Records: 75th %ile:
 Other: 90th %ile:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 1800.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1994 and 1998 from this assessment unit were used in the 2004 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use. The 1994 data have exceeded the ten-year threshold and are now considered historical. There is not enough 1998 data to provide an adequate assessment. However, while reflecting the current status that insufficient data are available to assess beneficial use status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the U.S. EPA.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 111.0

05040001 160

Little Stillwater Creek

Integrated Report Assessment Category: 5

Priority Points: 1

Next Scheduled Monitoring: 2012

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 2002, 2003

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	6 Site(s)	2 Site(s)						
Primary Tributaries								
5-20 mi ²	1 Site(s)	0 Site(s)	8.3	0.0	91.7			
20-50 mi ²	1 Site(s)	0 Site(s)				4	50	46
Principal Streams								
50-500 mi ²	1 Site(s)							
	2.0 Miles	0.0 Miles	0.00	100	0.00			

High Magnitude Causes

High Magnitude Sources

Cause Unknown

Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Data were collected by ODNR in 2003 from several small tributaries to Little Stillwater Creek and were limited to fish community samples.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 124.7**
 05040001 180 Tuscarawas River (downstream Stillwater Cr. to upstream Evans Cr.);
 excluding Tuscarawas R. mainstem
Integrated Report Assessment Category: 5 **Priority Points: 8**
Next Scheduled Monitoring: 2017

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C Sampling Year(s): 2003
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	3 Site(s)						
Primary Tributaries								
5-20 mi ²	7 Site(s)	2 Site(s)	82.1	10.7	7.2			
20-50 mi ²	1 Site(s)	1 Site(s)				82	11	7
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

Organic Enrichment/DO
 Direct Habitat Alterations
 Siltation
 Metals

High Magnitude Sources

Onsite Wastewater Systems (Septic Tanks)
 Nonirrigated Crop Production
 Pasture Land
 Surface Mining

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 2060
 No. Ambient Sites: 17 No. Ambient Sampling Records: 71 75th %ile: 3800
 No. of NPDES MOR Sites: 0 No. of NPDES MOR Records: 0 90th %ile: 26000
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological sampling was conducted in the assessment unit in 2003 as part of monitoring in the Tuscarawas River watershed to develop TMDLs for pollutants causing beneficial use impairments.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 116.4**
 05040001 190 Tuscarawas River (upstream Evans Creek to mouth); excluding
 Tuscarawas R. mainstem

Integrated Report Assessment Category: 5 **Priority Points: 9**
Next Scheduled Monitoring: 2017

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 2003
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	3 Site(s)	75.0	16.7	8.3			
20-50 mi ²	3 Site(s)	3 Site(s)				75	17	8
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

Cause Unknown
 Unionized Ammonia
 Nutrients

High Magnitude Sources

Source Unknown
 Manure Lagoons
 Nonirrigated Crop Production
 Pasture Land

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 3073
 No. Ambient Sites: 10 No. Ambient Sampling Records: 50 75th %ile: 4750
 No. of NPDES MOR Sites: 0 No. of NPDES MOR Records: 0 90th %ile: 60000
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological sampling was conducted in the assessment unit in 2003 as part of monitoring in the Tuscarawas River watershed to develop TMDLs for pollutants causing beneficial use impairments.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 161.4
05040002 010 Black Fork Mohican River (headwaters to downstream Whetstone Creek)

Integrated Report Assessment Category: 5 **Priority Points: 7**
Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 1998
Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)	50.0	50.0	0.0			
20-50 mi ²	4 Site(s)	2 Site(s)				42	46	12
Principal Streams								
50-500 mi ²	5 Site(s)							
	12.0 Miles	4.0 Miles	33.3	41.7	25.0			

High Magnitude Causes

Unknown Toxicity
Nutrients
Siltation
Direct Habitat Alterations

High Magnitude Sources

Major Industrial Point Source
Urban Runoff/Storm Sewers (NPS)
Channelization - Agriculture
Channelization - Development
Removal of Riparian Vegetation - Dev.
Contaminated Sediments

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (5-Historical) Cause: Pathogens Geometric Mean: 392
No. of Ambient Sites: 0 No. of Ambient Sampling Records: 0 75th %ile: 970
No. of NPDES MOR Sites: 2 No. of NPDES MOR Records: 168 90th %ile: 4560
Other:

Public Drinking Water Supply Assessment

Location(s): Black Fork River @RMs 50.82, 53.88 and 54 and Marsh Run Creek @RM 0.05 [Shelby]

Impairment: Unknown (3-Insufficient Data) Nitrate Indicator: Insufficient Data
Cause: Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
Stream Miles Monitored: 18.60 Stream Miles Impaired: Pollutants (Waterbody):
Lake Acres Monitored: 1379.0 Lake Acres Impaired:

WAU Comments

Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 139.7**
 05040002 020 Black Fork Mohican River (downstream Whetstone Creek to downstream
 Rocky Fork)
Integrated Report Assessment Category: 5 **Priority Points: 6**
Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 1993, 1994, 1998,
 Impairment: Yes (5) 2002

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	9 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	10 Site(s)	4 Site(s)	10.0	25.6	64.4			
20-50 mi ²	4 Site(s)	0 Site(s)				5	63	32
Principal Streams								
50-500 mi ²	2 Site(s)							
	3.6 Miles	0.0 Miles	0.00	100	0.00			

High Magnitude Causes

Priority Organics
 Metals
 Nutrients
 Organic Enrichment/DO
 Direct Habitat Alterations

High Magnitude Sources

Major Industrial Point Source
 Major Municipal Point Source
 Domestic Wastewater Lagoon
 Urban Runoff/Storm Sewer (NPS)
 Onsite Wastewater Systems (Septic Tanks)
 Hydromodification - Development
 Channelization - Development

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5-Historical) Cause: Pathogens Geometric Mean: 681
 No. of Ambient Sites: 0 No. of Ambient Sampling Records: 0 75th %ile: 1500
 No. of NPDES MOR Sites: 2 No. of NPDES MOR Records: 78 90th %ile: 4000
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 14.30 Stream Miles Impaired: 14.30 Pollutants (Waterbody): PCBs (Rocky Fork
 Lake Acres Monitored: 0.0 Lake Acres Impaired: Mohican River)

WAU Comments

The 2006 Integrated Report assessment of available fish tissue data from Rocky Fork Mohican River documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 112.1

05040002 030

Clear Fork Mohican River (headwaters to downstream Cedar Fork)

Integrated Report Assessment Category: 5

Priority Points: 8

Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: CWH,WWH
Impairment: Yes (5)

Sampling Year(s): 1998, 1999, 2004

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	1 Site(s)	1 Site(s)	80.0	10.0	10.0			
20-50 mi ²	5 Site(s)	3 Site(s)						
						78	17	5
Principal Streams								
50-500 mi ²	4 Site(s)							
	6.6 Miles	5.0 Miles	75.8	24.2	0.00			

High Magnitude Causes

High Magnitude Sources

Siltation

Channelization-Development

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (5-Historical)

Cause: Pathogens

Geometric Mean: 597

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 1300

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 19

90th %ile: 2860

Other:

Public Drinking Water Supply Assessment

Location(s): Clear Fork River @RM 30.6 (Clear Fork Reservoir) [Mansfield]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data, Watch List

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 9.15 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 1010.0 Lake Acres Impaired:

WAU Comments

Most monitoring in this assessment unit was conducted during 1998 and 1999 and focused on the Clear Fork mainstem and its principal tributary Cedar Fork. 2004 sampling involved a site assessment of United Technologies in Lexington. A report on the findings of both biological and water quality surveys can be found at: www.epa.state.oh.us/dsw/document_index/psdindx.html. Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 105.3

05040002 040

Clear Fork Mohican River (downstream Cedar Fork to mouth)

Integrated Report Assessment Category: 2

Priority Points:

Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: WWH
Impairment: No (1)

Sampling Year(s): 1998

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	2 Site(s)	100.0	0.0	0.0			
20-50 mi ²	Site(s)	Site(s)				100	0	0
Principal Streams								
50-500 mi ²	5 Site(s) 16.7 Miles	16.7 Miles	100	0.00	0.00			
<u>High Magnitude Causes</u>			<u>High Magnitude Sources</u>					

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: No (1-Historical)
No. Ambient Sites: 0
No. of NPDES MOR Sites: 2
Other:

Cause:
No. Ambient Sampling Records: 0
No. of NPDES MOR Records: 77

Geometric Mean: 276
75th %ile: 300
90th %ile: 400

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
Stream Miles Monitored: 21.45 Stream Miles Impaired: Pollutants (Waterbody):
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Monitoring in this assessment unit was conducted during 1998 and focused primarily on the Clear Fork mainstem downstream from Cedar Fork. A report on the findings of the biological and water quality survey can be found at: www.epa.state.oh.us/dsw/document_index/psdindx.html. Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 161.5

05040002 050

Jerome Fork Mohican River

Integrated Report Assessment Category: 5

Priority Points: 6

Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW

Sampling Year(s): 1998

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	4 Site(s)	4 Site(s)	100.0	0.0	0.0			
20-50 mi ²	3 Site(s)	3 Site(s)				88	12	0
Principal Streams								
50-500 mi ²	7 Site(s)							
	12.3 Miles	9.4 Miles	76.4	23.6	0.00			

High Magnitude Causes

High Magnitude Sources

Nutrients

Major Municipal Point Source

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5-Historical)

Cause: Pathogens

Geometric Mean: 947

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 2700

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 56

90th %ile: 6050

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 2.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 105.3

05040002 060

Muddy Fork Mohican River

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 416

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 1200

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 20

90th %ile: 2750

Other:

Public Drinking Water Supply Assessment

Location(s): Muddy Fork (Cinnamon Lake -impounded) [Cinnamon Lake]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 7.40 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 79.8

05040002 070

Lake Fork Mohican River

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 138.8

05040002 080

Mohican River; Black Fork Mohican R. (downstream Rocky Fork to mouth); excluding Mohican R. mainstem

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: WWH
Impairment: Unknown (3)

Sampling Year(s):

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: No (1-Historical)
No. Ambient Sites: 0
No. of NPDES MOR Sites: 1
Other:

Cause:
No. Ambient Sampling Records: 0
No. of NPDES MOR Records: 20

Geometric Mean: 973
75th %ile: 422
90th %ile: 554

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 100.5

05040003 010

Kokosing River (headwaters to upstream North Branch)

Integrated Report Assessment Category: 2

Priority Points:

Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: WWH
Impairment: No (1)

Sampling Year(s): 1998, 2002

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	1 Site(s)	1 Site(s)	100.0	0.0	0.0			
20-50 mi ²	2 Site(s)	2 Site(s)				100	0	0
Principal Streams								
50-500 mi ²	2 Site(s)							
	11.9 Miles	11.9 Miles	100	0.00	0.00			

High Magnitude Causes

High Magnitude Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 668

No. Ambient Sites: 1

No. Ambient Sampling Records: 4

75th %ile: 830

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90th %ile: 974

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 10.84 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 97.9

05040003 020

North Branch Kokosing River

Integrated Report Assessment Category: 2

Priority Points:

Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: WWH
Impairment: No (1)

Sampling Year(s): 1998

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	2 Site(s)	100.0	0.0	0.0			
20-50 mi ²	1 Site(s)	1 Site(s)				100	0	0
Principal Streams								
50-500 mi ²	3 Site(s) 13.5 Miles	3 Site(s) 13.5 Miles	100	0.00	0.00			
<u>High Magnitude Causes</u>			<u>High Magnitude Sources</u>					

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 83

No. of Ambient Sites: 1

No. of Ambient Sampling Records: 4

75th %ile: 185

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 20

90th %ile: 202

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 179.9**
 05040003 030 Kokosing River (downstream North Branch to upstream Jelloway Creek)

Integrated Report Assessment Category: 5 **Priority Points: 2**
Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: EWH, WWH Sampling Year(s): 1997, 1998, 2002
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	1 Site(s)	1 Site(s)	100.0	0.0	0.0			
20-50 mi ²	2 Site(s)	2 Site(s)				81	7	12
Principal Streams								
50-500 mi ²	6 Site(s)							
	18.3 Miles	11.4 Miles	62.2	14.2	23.6			

High Magnitude Causes

Cause Unknown
 Organic Enrichment/DO

High Magnitude Sources

Natural
 Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: No (1) Cause: Geometric Mean: 339
 No. of Ambient Sites: 7 No. of Ambient Sampling Records: 43 75th %ile: 545
 No. of NPDES MOR Sites: 2 No. of NPDES MOR Records: 73 90th %ile: 1450
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
 Stream Miles Monitored: 18.28 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 106.3

05040003 040

Kokosing River (upstream Jelloway Creek to mouth)

Integrated Report Assessment Category: 5

Priority Points: 3

Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: EWH

Sampling Year(s): 1998, 2002

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	1 Site(s)	62.5	12.5	25.0			
20-50 mi ²	2 Site(s)	2 Site(s)				64	13	23
Principal Streams								
50-500 mi ²	6 Site(s) 15.8 Miles	10.4 Miles	65.7	12.6	21.7			

High Magnitude Causes

High Magnitude Sources

Unknown Cause
Flow Alteration

Unknown Source
Pasture Land
Other Urban Runoff
Upstream Impoundment

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1)

Cause:

Geometric Mean: 319

No. Ambient Sites: 5

No. Ambient Sampling Records: 20

75th %ile: 735

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 36

90th %ile: 1334

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 12.88 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 138.6

05040003 050

Killbuck Creek (headwaters to upstream Apple Creek)

Integrated Report Assessment Category: 5

Priority Points: 7

Next Scheduled Monitoring: 2009

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 1993, 2001, 2002

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	2 Site(s)						
Primary Tributaries								
5-20 mi ²	3 Site(s)	2 Site(s)	50.0	33.3	16.7			
20-50 mi ²	3 Site(s)	1 Site(s)						
						74	18	8
Principal Streams								
50-500 mi ²	6 Site(s)							
	11.8 Miles	11.4 Miles	97.0	3.00	0.00			

High Magnitude Causes

High Magnitude Sources

Organic Enrichment/DO
Direct Habitat Alterations

Nonirrigated Crop Production
Feedlots (Confined Animal Feeding Oper.)
Channelization - Agriculture
Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 379

No. Ambient Sites: 6

No. Ambient Sampling Records: 22

75th %ile: 599

No. of NPDES MOR Sites: 4

No. of NPDES MOR Records: 100

90th %ile: 2180

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 10.80 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Ohio EPA continues to monitor biological reference sites in this assessment unit. Several previously unassessed streams were sampled by ODNR Division of Wildlife in 2001. Data were used as a supplement to Ohio EPA data in determining aquatic life use attainment.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 171.1
05040003 060 Killbuck Creek (upstream Apple Creek to downstream Salt Creek)

Integrated Report Assessment Category: 5 **Priority Points: 6**
Next Scheduled Monitoring: 2009

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 1993, 2001
Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	4 Site(s)	83.3	0.0	16.7			
20-50 mi ²	2 Site(s)	2 Site(s)				57	12	31
Principal Streams								
50-500 mi ²	7 Site(s)							
	15.2 Miles	4.6 Miles	30.3	25.0	44.7			

High Magnitude Causes

Organic Enrichment/DO
Direct Habitat Alterations

High Magnitude Sources

Channelization - Agriculture
Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (5) Cause: Pathogens Geometric Mean: 551
No. of Ambient Sites: 3 No. of Ambient Sampling Records: 6 75th %ile: 1456
No. of NPDES MOR Sites: 3 No. of NPDES MOR Records: 51 90th %ile: 2804
Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)
Stream Miles Monitored: 12.22 Stream Miles Impaired: Pollutants (Waterbody):
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1993 and 2001 from this assessment unit were used in the 2004 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life and recreation beneficial uses. The 1993 data have exceeded the ten-year threshold and are now considered historical. There is not enough 2001 data to provide an adequate aquatic life assessment. However, while reflecting the current status that insufficient data are available to assess aquatic life use status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments (aquatic life and recreation) are completed and approved by the U.S. EPA.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 151.9

05040003 070

Killbuck Creek (downstream Salt Creek to downstream Black Creek)

Integrated Report Assessment Category: 5

Priority Points: 5

Next Scheduled Monitoring: 2009

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 1993, 2001

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	4 Site(s)	3 Site(s)						
Primary Tributaries								
5-20 mi ²	5 Site(s)	5 Site(s)	93.8	0.0	6.2			
20-50 mi ²	1 Site(s)	1 Site(s)				97	0	3
Principal Streams								
50-500 mi ²	1 Site(s) 6.3 Miles	6.3 Miles	100	0.00	0.00			

High Magnitude Causes

High Magnitude Sources

Cause Unknown

Flow Alteration

Natural

Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 748

No. Ambient Sites: 5

No. Ambient Sampling Records: 16

75th %ile: 2425

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 48

90th %ile: 9560

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 1.98 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Several previously unassessed streams in this watershed were sampled by ODNR Division of Wildlife in 2001. Data were used as a supplement to Ohio EPA data in determining aquatic life use attainment status.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 146.9

05040003 080

Killbuck Creek (downstream Black Creek to mouth)

Integrated Report Assessment Category: 5

Priority Points: 7

Next Scheduled Monitoring: 2009

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH
Impairment: Yes (5)

Sampling Year(s): 1993, 1994, 2001

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	5 Site(s)	3 Site(s)						
Primary Tributaries								
5-20 mi ²	5 Site(s)	5 Site(s)	65.0	25.0	10.0			
20-50 mi ²	2 Site(s)	1 Site(s)						
						75	20	5
Principal Streams								
50-500 mi ²	2 Site(s) 7.0 Miles	6.0 Miles	85.7	14.3	0.00			

High Magnitude Causes

Cause Unknown
Organic Enrichment/DO

High Magnitude Sources

Onsite Wastewater Systems (Septic Tanks)
Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 697

No. Ambient Sites: 4

No. Ambient Sampling Records: 25

75th %ile: 1800

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 56

90th %ile: 4000

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Several previously unassessed streams in this watershed were sampled by ODNR Division of Wildlife in 2001. Data were used as a supplement to Ohio EPA data in determining aquatic life use attainment status.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²): 118.1**
 05040004 020 Wakatomika Creek (headwaters to downstream Brushy Fork)

Integrated Report Assessment Category: 5 **Priority Points: 2**
Next Scheduled Monitoring: 2018

Aquatic Life Use Assessment

Subcategories of ALU: EWH,CWH,WWH Sampling Year(s): 1997, 1998, 2003
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	6 Site(s)	5 Site(s)						
Primary Tributaries								
5-20 mi ²	11 Site(s)	10 Site(s)	83.5	14.2	2.3			
20-50 mi ²	5 Site(s)	4 Site(s)				92	7	1
Principal Streams								
50-500 mi ²	1 Site(s) 6.5 Miles	6.5 Miles	100	0.00	0.00			

High Magnitude Causes

Siltation
 Direct Habitat Alterations

High Magnitude Sources

Pasture Land
 Channelization-Agriculture
 Removal of Riparian Vegetation-Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact Cause: Pathogens Geometric Mean: 1724
 Impairment: Yes (4A-TMDL) No. of Ambient Sampling Records: 277 75th %ile: 3500
 No. of Ambient Sites: 29 No. of NPDES MOR Records: 0 90th %ile: 17000
 No. of NPDES MOR Sites: 0
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5-Historical Data)
 Stream Miles Monitored: 7.52 Stream Miles Impaired: 7.52 Pollutants (Waterbody): PCBs (Wakatomika Creek)
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Wakatomika Creek watershed were approved by U.S. EPA on September 28, 2006. Chemical, physical and biological monitoring in support of the TMDL development was conducted in 2003. The 2006 Integrated Report assessment of available fish tissue data from Wakatomika Creek documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. While some of the fish tissue data used in the 2006 Integrated Report assessment are now historical, the assessment unit will remain Category 5 until TMDLs have been developed for the pollutant(s) impairing fish consumption. See <http://www.epa.state.oh.us/dsw/tmdl/WakatomikaCreekTMDL.html> for more information.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²):** 116.1
 05040004 030 Wakatomika Creek (downstream Brushy Fork to mouth)

Integrated Report Assessment Category: 5 **Priority Points: 2**
Next Scheduled Monitoring: 2018

Aquatic Life Use Assessment

Subcategories of ALU: EWH,CWH,WWH Sampling Year(s): 1997, 1998, 2003
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	8 Site(s)	3 Site(s)						
Primary Tributaries								
5-20 mi ²	9 Site(s)	6 Site(s)	76.1	20.8	3.1			
20-50 mi ²	2 Site(s)	2 Site(s)				72	26	2
Principal Streams								
50-500 mi ²	9 Site(s)							
	21.3 Miles	14.6 Miles	72.4	26.1	1.50			

High Magnitude Causes

Siltation
 Flow Alteration
 Nutrients
 Direct Habitat Alterations
 Salinity/TDS/Chlorides

High Magnitude Sources

Highway/Road/Bridge/Sewer Line Construction
 Highway Maintenance and Runoff
 Nonirrigated Crop Production
 Channelization-Agriculture
 Removal of Riparian Vegetation-Agriculture
 Pasture Land
 Surface Mining

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (4A-TMDL) Cause: Pathogens Geometric Mean: 656
 No. of Ambient Sites: 26 No. of Ambient Sampling Records: 90 75th %ile: 908
 No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 10 90th %ile: 2810
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5-Historical Data)
 Stream Miles Monitored: 20.08 Stream Miles Impaired: 18.38 Pollutants (Waterbody): PCBs (Wakatomika Creek)
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Wakatomika Creek watershed were approved by U.S. EPA on September 28, 2006. Chemical, physical and biological monitoring in support of the TMDL development was conducted in 2003. The 2006 Integrated Report assessment of available fish tissue data from Wakatomika Creek documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. While some of the fish tissue data used in the 2006 Integrated Report assessment are now historical, the assessment unit will remain Category 5 until TMDLs have been developed for the pollutant(s) impairing fish consumption. See <http://www.epa.state.oh.us/dsw/tmdl/WakatomikaCreekTMDL.html> for more information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 193.9

05040004 040

Jonathan Creek

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2008

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH,LRW,LWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): Frazier's Run; Kent Run @RM 1.3 [Maysville]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Virtually no biological sampling has been done in the Moxahala Creek watershed due to severe mining impacts and lack of WWTPs in the basin. Only one biological reference site on Jonathan Creek has been sampled recently. Fish tissue sampling was conducted in Moxahala Creek in 2000. Comprehensive chemical, physical, and biological monitoring is scheduled in this assessment unit in 2008 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 108.4

05040004 050

Moxahala Creek (excluding Jonathan Creek)

Integrated Report Assessment Category: 5

Priority Points: 1

Next Scheduled Monitoring: 2008

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW,LWH

Sampling Year(s): 1997, 1998, 1999

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	3 Site(s)	0 Site(s)	25.0	16.7	58.3			
20-50 mi ²	Site(s)	Site(s)				25	17	58
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

pH
Siltation
Flow Alteration
Direct Habitat Alterations

Surface Mining
Subsurface Mining
Channelization - Development
Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 14

No. of Ambient Sites: 0

No. of Ambient Sampling Records: 0

75th %ile: 100

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 20

90th %ile: 100

Other:

Public Drinking Water Supply Assessment

Location(s): Dry Run @RM 2.23 (Resv 1 and 2), Black Fork @RM 4.69 (Resv. 3,4,5) [Crooksville]

Impairment: No (1)

Nitrate Indicator: Full Support

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 2.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Comprehensive chemical, physical, and biological monitoring is scheduled in this assessment unit in 2008 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 144.8**
 05040004 060 Salt Creek

Integrated Report Assessment Category: 5 **Priority Points: 3**
Next Scheduled Monitoring: 2008

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 1996, 1997, 2002
 Impairment: No (1)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	6 Site(s)	100.0	0.0	0.0			
20-50 mi ²	2 Site(s)	2 Site(s)				100	0	0
Principal Streams								
50-500 mi ²	1 Site(s)							
	4.1 Miles	4.1 Miles	100	0.00	0.00			

High Magnitude Causes

High Magnitude Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 790
 No. of Ambient Sites: 29 No. of Ambient Sampling Records: 157 75th %ile: 1550
 No. of NPDES MOR Sites: 0 No. of NPDES MOR Records: 0 90th %ile: 3580
 Other:

Public Drinking Water Supply Assessment

Location(s): Manns Fork Salt Creek @RM 6.77 (Cutler Lake) [ODNR-Blue Rock S.P.]

Impairment: No (1) Nitrate Indicator: Full Support
 Cause: Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
 Stream Miles Monitored: 2.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Comprehensive chemical, physical, and biological monitoring is scheduled in this assessment unit in 2008 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 142.2

05040004 080

Meigs Creek

Integrated Report Assessment Category: 5

Priority Points: 4

Next Scheduled Monitoring: 2013

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 1989

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)	0.0	50.0	50.0			
20-50 mi ²	2 Site(s)	0 Site(s)				0	25	75
Principal Streams								
50-500 mi ²	1 Site(s)							
	8.1 Miles	0.0 Miles	0.00	0.00	100			

High Magnitude Causes

High Magnitude Sources

Siltation

Surface Mining

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 643

No. Ambient Sites: 27

No. Ambient Sampling Records: 38

75th %ile: 1600

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90th %ile: 2000

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 2.60 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 154.3

05040004 090

Wolf Creek; West Branch Wolf Creek;

Integrated Report Assessment Category: 5

Priority Points: 3

Next Scheduled Monitoring: 2013

Aquatic Life Use Assessment

Subcategories of ALU: EWH

Sampling Year(s): 1999, 2002

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	7 Site(s)	3 Site(s)	71.4	0.0	28.6			
20-50 mi ²	Site(s)	Site(s)				58	14	28
Principal Streams								
50-500 mi ²	4 Site(s)							
	7.2 Miles	3.2 Miles	44.4	27.8	27.8			

High Magnitude Causes

High Magnitude Sources

Nutrients
Pathogens

Pasture Land

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Biological references sites continue to be monitored within this assessment unit. Several new tributaries had fish sampling done in 2002, resulting in a more comprehensive assessment of the watershed than in previous assessment cycles.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 79.6
05040004 100 South Branch Wolf Creek

Integrated Report Assessment Category: 5 **Priority Points: 1**
Next Scheduled Monitoring: 2013

Aquatic Life Use Assessment

Subcategories of ALU: EWH Sampling Year(s): 1999, 2002
Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	3 Site(s)	2 Site(s)	58.3	25.0	16.7			
20-50 mi ²	2 Site(s)	1 Site(s)				29	13	58
Principal Streams								
50-500 mi ²	2 Site(s) 7.2 Miles	0.0 Miles	0.00	0.00	100			

High Magnitude Causes

High Magnitude Sources

Siltation
Flow Alteration

Channelization - Agriculture
Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Unknown (3) Cause: Geometric Mean:
No. of Ambient Sites: No. of Ambient Sampling Records: 75th %ile:
No. of NPDES MOR Sites: No. of NPDES MOR Records: 90th %ile:
Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)
Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Biological references sites continue to be monitored within this assessment unit. Several new tributaries had fish sampling done in 2002, resulting in a more comprehensive assessment of the watershed than in previous assessment cycles.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 150.5

05040005 010

Seneca Fork

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2013

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 3550.0 Lake Acres Impaired:

WAU Comments

Biological monitoring of Seneca Fork has not been done since 1984. Fish tissue sampling was done in 1993 and 1994.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 163.4**
 05040005 020 Wills Creek (headwaters to upstream Leatherwood Creek); excluding
 Seneca Fork

Integrated Report Assessment Category: 5 **Priority Points: 6**
Next Scheduled Monitoring: 2013

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW,LWH Sampling Year(s): 1994, 1999
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	8 Site(s)	0 Site(s)	0.0	37.5	62.5			
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	7 Site(s)					0	39	61
	15.2 Miles	0.0 Miles	0.00	41.4	58.6			

High Magnitude Causes

High Magnitude Sources

Metals
 Unionized Ammonia
 Siltation
 Direct Habitat Alterations

Surface Mining
 Onsite Wastewater Systems (Septic Tanks)
 Hazardous Waste
 Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5-Historical) Cause: Pathogens Geometric Mean: 1651
 No. of Ambient Sites: 0 No. of Ambient Sampling Records: 0 75th %ile: 3325
 No. of NPDES MOR Sites: 2 No. of NPDES MOR Records: 16 90th %ile: 14350
 Other:

Public Drinking Water Supply Assessment

Location(s): Wills Creek (Cambridge Reservoir) [Cambridge]

Impairment: Unknown (3-Insufficient Data) Nitrate Indicator: Insufficient Data
 Cause: Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
 Stream Miles Monitored: 6.20 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Only modified mine drainage reference sites were sampled in 1994 and 1999. Mining impacts are so severe (sedimentation) within the assessment unit that these sites represent the prevailing aquatic life condition. Additionally, current data indicate a historical impairment of the designated recreation use.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 91.6

05040005 030

Leatherwood Creek

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2013

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 159.3

05040005 040

Salt Fork

Integrated Report Assessment Category: 5

Priority Points: 2

Next Scheduled Monitoring: 2013

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 1994, 1998

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	4 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	3 Site(s)	1 Site(s)	14.6	79.2	6.2			
20-50 mi ²	2 Site(s)	0 Site(s)				15	79	6
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

Siltation
Direct Habitat Alterations

Pasture Land
Range Grazing - Riparian
Range Grazing - Upland
Channelization - Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): E. Branch Salt Fork Lake [ODNR-Salt Fork S.P.]

Impairment: No (1)

Nitrate Indicator: Full Support

Cause:

Pesticide Indicator: Full Support

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 2952.0 Lake Acres Impaired:

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 111.4**
 05040006 010 North Fork Licking River (headwaters to downstream Sycamore Creek)

Integrated Report Assessment Category: 5 **Priority Points: 5**
Next Scheduled Monitoring: 2008

Aquatic Life Use Assessment

Subcategories of ALU: WWH, LRW Sampling Year(s): 1993, 1999, 2000, 2001
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	5 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	8 Site(s)	4 Site(s)	62.5	14.4	23.1			
20-50 mi ²	5 Site(s)	5 Site(s)				81	7	12
Principal Streams								
50-500 mi ²	1 Site(s) 2.0 Miles	2.0 Miles	100	0.00	0.00			

High Magnitude Causes

Nutrients
 Siltation
 Direct Habitat Alterations

High Magnitude Sources

Nonirrigated Crop Production
 Confined Animal Feeding Operation (NPS)
 Channelization - Agriculture
 Removal of Riparian Vegetation - Ag.
 Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact Cause: Pathogens Geometric Mean: 667
 Impairment: Yes (5-Historical) No. Ambient Sampling Records: 0 75th %ile: 2000
 No. Ambient Sites: 0 No. of NPDES MOR Records: 66 90th %ile: 2300
 No. of NPDES MOR Sites: 2
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
 Stream Miles Monitored: 11.22 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Most of the recent data (1999-2001) are from Otter Fork, related to a large confined animal feeding operation (CAFO). Two biological reference sites have also been sampled. Comprehensive chemical, physical, and biological monitoring is scheduled in this assessment unit in 2008 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 129.0

05040006 020

North Fork Licking River (downstream Sycamore Creek to mouth)

Integrated Report Assessment Category: 2

Priority Points:

Next Scheduled Monitoring: 2008

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 227

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 619

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 20

90th %ile: 1223

Other:

Public Drinking Water Supply Assessment

Location(s): North Fork Licking River @ RM 3.0 [Newark]

Impairment: No (1)

Nitrate Indicator: Full Support

Cause:

Pesticide Indicator: Full Support

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 20.28 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A small amount of data were collected in this watershed, but there are not enough sampling locations to do a complete assessment. Only biological reference sites have been sampled in this watershed since 1993. The lower portion of the North Fork mainstem was sampled in 1993. Comprehensive chemical, physical, and biological monitoring is scheduled in this assessment unit in 2008 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 101.7

05040006 030

Raccoon Creek

Integrated Report Assessment Category: 5

Priority Points: 4

Next Scheduled Monitoring: 2008

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW-S, MWH-C

Sampling Year(s): 1993, 1996, 2000,

Impairment: Yes (5)

2001

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	9 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	10 Site(s)	7 Site(s)	42.5	35.6	21.9			
20-50 mi ²	2 Site(s)	1 Site(s)				52	37	11
Principal Streams								
50-500 mi ²	2 Site(s)							
	3.2 Miles	2.0 Miles	62.5	37.5	0.00			

High Magnitude Causes

Nutrients
Siltation
Organic Enrichment/DO
Flow Alteration
Direct Habitat Alterations

High Magnitude Sources

Nonirrigated Crop Production
Confined Animal Feeding Operation (NPS)
Land Development/Suburbanization
Channelization - Agriculture
Removal of Riparian Vegetation - Ag.
Spills
Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1-Historical)

Cause:

Geometric Mean: 441

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 950

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 34

90th %ile: 1770

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 2.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

All of the sampling done from 1998-2001 was related to spills and manure spreading associated with a large confined animal feeding operation (CAFO). Sampling was done to monitor the recovery of Raccoon Creek and Lobdell Creek after major fish kills occurred in 1999. Comprehensive chemical, physical, and biological monitoring is scheduled in this assessment unit in 2008 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 184.9

05040006 040

South Fork Licking River (excluding Raccoon Creek)

Integrated Report Assessment Category: 5

Priority Points: 5

Next Scheduled Monitoring: 2008

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 1993, 1999

Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	5 Site(s)	4 Site(s)	90.0	0.0	10.0			
20-50 mi ²	3 Site(s)	3 Site(s)				95	0	5
Principal Streams								
50-500 mi ²	9 Site(s)							
	22.8 Miles	22.8 Miles	100	0.00	0.00			

High Magnitude Causes

Priority Organics

High Magnitude Sources

Contaminated Sediments

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 695

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 2100

No. of NPDES MOR Sites: 6

No. of NPDES MOR Records: 184

90th %ile: 4400

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 21.10 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 3136.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1993 and 1999 from this assessment unit were used in the 2002 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life and recreation beneficial uses. The 1993 data have exceeded the ten-year threshold and are now considered historical. There is not enough 1999 data to provide an adequate aquatic life assessment. However, while reflecting the current status that insufficient data are available to assess aquatic life use status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments (aquatic life and recreation) are completed and approved by the U.S. EPA. Comprehensive chemical, physical, and biological monitoring is scheduled in this assessment unit in 2008 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 159.7**
 05060001 010 Scioto River (headwaters to downstream Taylor Creek)

Integrated Report Assessment Category: 5 **Priority Points: 6**
Next Scheduled Monitoring: 2009

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C Sampling Year(s): 1995
 Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	8 Site(s)	4 Site(s)	41.7	39.6	18.7			
20-50 mi ²	3 Site(s)	1 Site(s)				38	53	9
Principal Streams								
50-500 mi ²	4 Site(s)							
	24.9 Miles	8.6 Miles	34.6	65.4	0.00			

High Magnitude Causes

Direct Habitat Alterations

High Magnitude Sources

Channelization - Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 648
 No. of Ambient Sites: 7 No. of Ambient Sampling Records: 18 75th %ile: 3200
 No. of NPDES MOR Sites: 2 No. of NPDES MOR Records: 37 90th %ile: 6900
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
 Cause:

Nitrate Indicator:
 Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1995 were used in the 2002 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use. These data have since exceeded the ten-year threshold and are now considered historical. However, while reflecting the current status that no aquatic life data are available to assess beneficial use status, the assessment unit continues to have a recreation use impairment. As such, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments (aquatic life and recreation) are completed and approved by the U.S. EPA.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 105.3

05060001 020

Rush Creek

Integrated Report Assessment Category: 5

Priority Points: 3

Next Scheduled Monitoring: 2009

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW
Impairment: Unknown (3)

Sampling Year(s):

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (5-Historical)
No. Ambient Sites: 0
No. of NPDES MOR Sites: 1
Other:

Cause: Pathogens
No. Ambient Sampling Records: 0
No. of NPDES MOR Records: 13

Geometric Mean: 805
75th %ile: 1700
90th %ile: 3340

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11

WAU Description

WAU Size (mi²): 112.6

05060001 040

Little Scioto River

Integrated Report Assessment Category: 5

Priority Points: 4

Next Scheduled Monitoring: 2009

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C,LRW

Sampling Year(s): 1998, 1999

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	4 Site(s)	0 Site(s)	37.5	25.0	37.5			
20-50 mi ²	2 Site(s)	1 Site(s)				19	21	60
Principal Streams								
50-500 mi ²	2 Site(s) 11.6 Miles	0.0 Miles	0.00	17.2	82.8			

High Magnitude Causes

High Magnitude Sources

Priority Organics
Metals
Nutrients
Siltation
Organic Enrichment/DO
Flow Alteration
Direct Habitat Alterations
Oil and Grease

Combined Sewer Overflow
Nonirrigated Crop Production
Onsite Wastewater Systems (Septic Tanks)
Channelization - Agriculture
Channelization - Development
Removal of Riparian Vegetation - Ag.
Contaminated Sediments
Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 498

No. Ambient Sites: 3

No. Ambient Sampling Records: 6

75th %ile: 1025

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 202

90th %ile: 3290

Other: A "Dermal Contact Advisory" is in effect for the Little Scioto River due to PAH contamination. The area under the advisory is from St. Rt. 739 near Marion to Holland Rd. near Marion (Marion County).

Public Drinking Water Supply Assessment

Location(s): Little Scioto River @RM 7.1 [Marion-Ohio American Water]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 12.10 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A USEPA funded project to remediate contaminated sediments in the Little Scioto River is underway. Future monitoring within the watershed will be conducted within the normal rotating basin schedule after the cessation of the project and when sufficient recovery time has elapsed.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²): 107.7**
 05060001 060 Scioto River (upstream Bokes Creek to upstream Mill Creek); excluding
 Scioto R. mainstem

Integrated Report Assessment Category: 5 **Priority Points: 3**
Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW Sampling Year(s): 1999
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	15 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	4 Site(s)	0 Site(s)	18.3	33.3	48.4			
20-50 mi ²	3 Site(s)	1 Site(s)				9	61	30
Principal Streams								
50-500 mi ²	4 Site(s)							
	18.0 Miles	0.0 Miles	0.00	88.9	11.1			

High Magnitude Causes

Unknown Toxicity
 Unionized Ammonia
 Nutrients
 Siltation
 Organic Enrichment/DO
 Salinity/TDS/Chlorides
 Direct Habitat Alterations

High Magnitude Sources

Minor Industrial Point Source
 Nonirrigated Crop Production
 Pasture Land
 Range Land
 Feedlots (Confined Animals Feeding Oper.) Spills
 Animal Holding/ Management Areas
 Onsite Wastewater Systems (Septic Tanks)
 Septage Disposal
 Channelization - Agriculture
 Dredging - Agriculture
 Removal of Riparian Veg. - Ag
 Bank Destabilization - Ag.

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5-Historical) Cause: Pathogens Geometric Mean:
 No. of Ambient Sites: 0 No. of Ambient Sampling Records: 0 75th %ile:
 No. of NPDES MOR Sites: 0 No. of NPDES MOR Records: 0 90th %ile:
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

TMDLs for the aquatic life use impairment documented in the Bokes Creek watershed were approved by the U.S. EPA on September 27, 2002. Monitoring in support of TMDL development was conducted in 1999. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. The assessment unit remains in Category 5 due to the historical recreation use impairment.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 179.3
05060001 070 Mill Creek

Integrated Report Assessment Category: 5 **Priority Points: 3**
Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C,LRW Sampling Year(s): 1995, 2000, 2001
Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	9 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	4 Site(s)	2 Site(s)	45.5	0.0	54.5			
20-50 mi ²	5 Site(s)	3 Site(s)						
						48	19	33
Principal Streams								
50-500 mi ²	9 Site(s)							
	39.4 Miles	20.2 Miles	51.3	37.0	11.7			

High Magnitude Causes

Unknown Toxicity
Pesticides
Metals
Unionized Ammonia
Organic Enrichment/DO
Flow Alteration
Direct Habitat Alterations

High Magnitude Sources

Minor Industrial Point Source Source Unknown
Major Municipal Point Source
Industrial Land Treatment
Onsite Wastewater Systems (Septic Tanks)
Hazardous Waste
Channelization - Agriculture
Spills
Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (5) Cause: Pathogens Geometric Mean: 821
No. of Ambient Sites: 1 No. of Ambient Sampling Records: 24 75th %ile: 1942
No. of NPDES MOR Sites: 2 No. of NPDES MOR Records: 74 90th %ile: 5400
Other:

Public Drinking Water Supply Assessment

Location(s): Mill Creek @RM 19.45 [Marysville]

Impairment: Unknown (3-Insufficient Data) Nitrate Indicator: Insufficient Data
Cause: Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)
Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

TMDLs for pollutants impairing the aquatic life beneficial use in the Mill Creek watershed were approved by the U.S. EPA on September 2, 2003. Monitoring in support of the TMDL was conducted in 1995, 2000, and 2001. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. The assessment unit remains in Category 5 due to the recreation use impairment.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 114.5

05060001 100

Whetstone Creek

Integrated Report Assessment Category: 5

Priority Points: 2

Next Scheduled Monitoring: 2018

Aquatic Life Use Assessment

Subcategories of ALU: EWH,CWH,WWH

Sampling Year(s): 2003, 2004

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	9 Site(s)	6 Site(s)	41.6	52.8	5.6			
20-50 mi ²	8 Site(s)	4 Site(s)				21	76	3
Principal Streams								
50-500 mi ²	2 Site(s) 13.5 Miles	0.0 Miles	0.00	100	0.00			

High Magnitude Causes

Nutrients
Thermal Modifications
Siltation
Direct Habitat Alterations
Flow Alteration

High Magnitude Sources

Upstream Impoundment
Minor Municipal Point Source
Removal of Riparian Vegetation-Development
Nonirrigated Crop Production
Streambank Modification/Destabilization-Agriculture
Flow Regulation/Modification
Onsite Wastewater Systems (Septic Tanks)

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (4A-TMDL)

Cause: Pathogens

Geometric Mean: 1023

No. Ambient Sites: 26

No. Ambient Sampling Records: 207

75th %ile: 3150

No. of NPDES MOR Sites: 3

No. of NPDES MOR Records: 64

90th %ile: 11600

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 23.00 Stream Miles Impaired: 23.00 Pollutants (Waterbody): PCBs (Whetstone

Lake Acres Monitored: 0.0 Lake Acres Impaired: Creek)

WAU Comments

TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Olentangy River basin were approved by U.S. EPA on September 19, 2007. Chemical, physical, and biological monitoring in support of the TMDL development was conducted in 2003 and 2004. Significant streams sampled in this assessment unit included Whetstone Creek, E. Br. Whetstone Creek, Sams Creek, Big Run, Shaw Creek, Mitchell Run, and Claypole Run. For additional information, see <http://www.epa.state.oh.us/dsw/tmdl/OlentangyRiverTMDL.html>. The 2006 Integrated Report assessment of fish tissue data documented body burdens of pollutants at levels reflecting a violation(s) of Ohio Water Quality Standards criteria which resulted in listing as impaired for fish consumption. As such, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the U.S. EPA.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 113.0
05060001 120 Olentangy River (downstream Delaware Run to mouth)

Integrated Report Assessment Category: 5 **Priority Points: 2**
Next Scheduled Monitoring: 2018

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH,MWH-I Sampling Year(s): 1999, 2003, 2004, 2006
Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	11 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	1 Site(s)	0 Site(s)	0.0	0.0	100			
20-50 mi ²	Site(s)	Site(s)				39	11	50
Principal Streams								
50-500 mi ²	13 Site(s)							
	25.7 Miles	20.1 Miles	78.2	21.8	0.00			

High Magnitude Causes

Nutrients
Siltation
Flow Alteration

High Magnitude Sources

Urban Runoff/Storm Sewers (NPS)
Flow Regulation/Modification
Combined Sewer Overflow
Onsite Wastewater Systems (Septic Tanks)
Sanitary Sewer Overflow

Recreation Use Assessment

Subcategory of Use: Primary Contact Cause: Pathogens Geometric Mean: 440
Impairment: Yes (4A-TMDL) No. of Ambient Sampling Records: 148 75th %ile: 930
No. of Ambient Sites: 18 No. of NPDES MOR Records: 100 90th %ile: 2907
No. of NPDES MOR Sites: 2
Other:

Public Drinking Water Supply Assessment

Location(s): Olentangy River @RM 18.19 [Del-Co]

Impairment: Unknown (3-Insufficient Data) Nitrate Indicator: Insufficient Data
Cause: Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
Stream Miles Monitored: 25.71 Stream Miles Impaired: 25.71 Pollutants (Waterbody): PCBs (Olentangy River)
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Olentangy River basin were approved by U.S. EPA on September 19, 2007. Chemical, physical, and biological monitoring in support of the TMDL development was conducted in 2003 and 2004. Significant streams sampled in this assessment unit were limited to the Olentangy River but numerous small tributary streams were also assessed. For additional information, see <http://www.epa.state.oh.us/dsw/tmdl/OlentangyRiverTMDL.html>. The 2004 Integrated Report assessment of fish tissue data documented body burdens of pollutants at levels reflecting a violation(s) of Ohio Water Quality Standards criteria which resulted in listing as impaired for fish consumption. As such, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the U.S. EPA. Status of the Olentangy mainstem in the vicinity of Delaware was updated based on sites sampled in 2006 which documented recovery of aquatic communities in the River St. dam pool reach after removal of the dam in fall, 2005. The mainstem within Columbus was updated with data collected from dam pools in 1999 which had not been used in the 2006 Integrated Report assessment.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11

WAU Description

WAU Size (mi²): 189.6

05060001 130

Big Walnut Creek (headwaters to Hoover Dam)

Integrated Report Assessment Category: 4A

Priority Points:

Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 2000

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	16 Site(s)	5 Site(s)						
Primary Tributaries								
5-20 mi ²	15 Site(s)	7 Site(s)	36.2	8.0	55.8			
20-50 mi ²	3 Site(s)	1 Site(s)				68	4	28
Principal Streams								
50-500 mi ²	3 Site(s) 8.4 Miles	8.4 Miles	100	0.00	0.00			

High Magnitude Causes

High Magnitude Sources

Cause Unknown
 Unionized Ammonia
 Nutrients
 Siltation
 Organic Enrichment/DO
 Flow Alteration
 Direct Habitat Alterations

Suspended Solids

Nonirrigated Crop Production
 Land Development/Suburbanization
 Urban Runoff/Storm Sewers (NPS)
 Onsite Wastewater Systems (Septic Tanks)
 Removal of Riparian Vegetation
 Channelization - Agriculture
 Source Unknown
 Range Grazing - Riparian

Septage Disposal

Dam Construction

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (4A-TMDL)

Cause: Pathogens

Geometric Mean: 1407

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 3000

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 44

90th %ile: 5880

Other:

Public Drinking Water Supply Assessment

Location(s): Hoover Reservoir, Duncan Run @RM 0.68 [Lake of the Woods]

Impairment: No (1)

Nitrate Indicator: Full Support

Cause:

Pesticide Indicator: Full Support

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Big Walnut Creek basin was approved by U.S. EPA on September 26, 2005. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDL was conducted in 2000. The 2000 Big Walnut Creek basin report (EAS/2003-11-10) is available at http://www.epa.state.oh.us/dsw/document_index/psdindx.html.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11	WAU Description	WAU Size (mi²): 145.7
05060001 140	Big Walnut Creek (downstream Hoover Dam to upstream Alum Creek); Blacklick Creek	
Integrated Report Assessment Category: 4A		Priority Points:
Next Scheduled Monitoring: 2020		

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH,MWH-C,LRW Sampling Year(s): 2000
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	13 Site(s)	2 Site(s)						
Primary Tributaries								
5-20 mi ²	7 Site(s)	2 Site(s)	46.7	16.3	37.0			
20-50 mi ²	7 Site(s)	5 Site(s)						
						67	15	18
Principal Streams								
50-500 mi ²	7 Site(s)							
	24.3 Miles	21.2 Miles	87.1	12.9	0.00			

High Magnitude Causes

Cause Unknown Organic Enrichment/ DO
 Flow Alterations
 Metals
 Direct Habitat Alterations
 Unionized Ammonia
 Nutrients
 Siltation
 Thermal Modifications

High Magnitude Sources

Industrial Site Runoff Source Unknown
 Minor Municipal Point Source Contaminated Sediment
 Land Development/Suburbanization
 Urban Runoff/Storm Sewers (NPS)
 Onsite Wastewater Systems (Septic Tanks)
 Channelization - Development
 Upstream Impoundment
 Removal of Riparian Vegetation - Dev.

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (4A-TMDL) Cause: Pathogens Geometric Mean: 592
 No. of Ambient Sites: 5 No. of Ambient Sampling Records: 20 75th %ile: 1158
 No. of NPDES MOR Sites: 4 No. of NPDES MOR Records: 288 90th %ile: 2930
 Other:

Public Drinking Water Supply Assessment

Location(s): Big Walnut Creek @RM 32.64 [Columbus]

Impairment: No (1) Nitrate Indicator: Full Support, Watch List
 Cause: Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Big Walnut Creek basin was approved by U.S. EPA on September 26, 2005. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDL was conducted in 2000. The 2000 Big Walnut Creek basin report (EAS/2003-11-10) is available at http://www.epa.state.oh.us/dsw/document_index/psdindx.html.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 121.8

05060001 150

Alum Creek (headwaters to Alum Creek Dam)

Integrated Report Assessment Category: 4A

Priority Points:

Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 2000

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	8 Site(s)	2 Site(s)	37.5	43.8	18.7			
20-50 mi ²	2 Site(s)	1 Site(s)				69	22	9
Principal Streams								
50-500 mi ²	2 Site(s) 1.6 Miles	1.6 Miles	100	0.00	0.00			

High Magnitude Causes

Cause Unknown
Nutrients
Flow Alteration
Direct Habitat Alterations

High Magnitude Sources

Nonirrigated Crop Production
Channelization - Agriculture
Source Unknown
Removal of Riparian Vegetation - Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (4A-TMDL)

Cause: Pathogens

Geometric Mean: 187

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 420

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 20

90th %ile: 644

Other:

Public Drinking Water Supply Assessment

Location(s): Alum Creek Reservoir and Alum Creek @RM 26.74 [Del-Co]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data, Watch list

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: No (1)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 3387.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Big Walnut Creek basin was approved by U.S. EPA on September 26, 2005. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDL was conducted in 2000. The 2000 Big Walnut Creek basin report (EAS/2003-11-10) is available at http://www.epa.state.oh.us/dsw/document_index/psdindx.html.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 99.7
 05060001 160 Big Walnut Creek (Alum Creek to mouth); Alum Creek (downstream Alum
 Creek Dam to mouth)
Integrated Report Assessment Category: 4A **Priority Points:**
Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH,LRW Sampling Year(s): 2000
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	1 Site(s)	0 Site(s)	0.0	100	0.0			
20-50 mi ²	1 Site(s)	1 Site(s)				44	56	0
Principal Streams								
50-500 mi ²	9 Site(s)							
	18.3 Miles	8.0 Miles	43.5	56.5	0.00			

High Magnitude Causes

Siltation
 Organic Enrichment/DO
 Flow Alteration
 Direct Habitat Alterations

High Magnitude Sources

Land Development/Suburbanization
 Urban Runoff/Storm Sewers (NPS)
 Channelization - Development
 Impoundment

Recreation Use Assessment

Subcategory of Use: Primary Contact Cause: Pathogens Geometric Mean: 357
 Impairment: Yes (4A-TMDL) No. Ambient Sampling Records: 0 75th %ile: 550
 No. Ambient Sites: 0 No. of NPDES MOR Records: 105 90th %ile: 1152
 No. of NPDES MOR Sites: 2
 Other:

Public Drinking Water Supply Assessment

Location(s): Alum Creek @RM 21.20 (@lowhead dam) [Westerville]

Impairment: Unknown (3-Insufficient Data) Nitrate Indicator: Insufficient Data
 Cause: Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
 Stream Miles Monitored: 35.22 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Big Walnut Creek basin was approved by U.S. EPA on September 26, 2005. Monitoring in support of the TMDL was conducted in 2000. The 2000 Big Walnut Creek basin report (EAS/2003-11-10) is available at http://www.epa.state.oh.us/dsw/document_index/psdindx.html. See <http://www.epa.state.oh.us/dsw/tmdl/BigWalnutCreekTMDL.html> for more information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 138.0

05060001 170

Walnut Creek (headwaters to downstream Sycamore Creek)

Integrated Report Assessment Category: 5

Priority Points: 8

Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: EWH,CWH,WWH

Sampling Year(s): 2005

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	5 Site(s)	3 Site(s)						
Primary Tributaries								
5-20 mi ²	14 Site(s)	10 Site(s)	70.3	21.1	8.6			
20-50 mi ²	4 Site(s)	3 Site(s)				85	11	4
Principal Streams								
50-500 mi ²	3 Site(s)							
	12.2 Miles	12.2 Miles	100	0.00	0.00			

High Magnitude Causes

Organic Enrichment (Sewage) Biological Indicators
Oxygen, Dissolved
Solids (Suspended/Bedload)
Total Dissolved Solids
Natural Conditions (Flow or Habitat)
Sedimentation/Siltation
Ammonia (Un-ionized)

High Magnitude Sources

On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
Urban Runoff/Storm Sewers
Municipal Point Source Discharges
Drought-related Impacts
Channelization
Nonirrigated Crop Production
Sanitary Sewer Overflows (Collection System Failures)
Grazing in Riparian or Shoreline Zones

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 598

No. Ambient Sites: 27

No. Ambient Sampling Records: 227

75th %ile: 1500

No. of NPDES MOR Sites: 4

No. of NPDES MOR Records: 114

90th %ile: 2900

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 16.22 Stream Miles Impaired: 16.22 Pollutants (Waterbody): PCBs (Walnut Creek)

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Development of TMDLs for pollutants impairing beneficial uses in the Walnut Creek watershed is underway. Biological and water quality monitoring in support of the TMDLs was conducted in 2005. Principal streams sampled in the upper watershed included Walnut Creek, Sycamore Creek, Pleasantville Creek, Poplar Creek, and Pawpaw Creek. A report on the findings of the biological and water quality survey is available (<http://www.epa.state.oh.us/dsw/documents/WalnutCreek2005TSD.pdf>). Check the TMDL web page for updated information on the TMDL progress (<http://www.epa.state.oh.us/dsw/tmdl/index.html>).

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 147.5

05060001 180

Walnut Creek (downstream Sycamore Creek to mouth)

Integrated Report Assessment Category: 5

Priority Points: 7

Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: EWH,CWH,WWH,MWH-C

Sampling Year(s): 2005

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	8 Site(s)	7 Site(s)						
Primary Tributaries								
5-20 mi ²	11 Site(s)	7 Site(s)	87.8	4.5	7.7			
20-50 mi ²	2 Site(s)	2 Site(s)				94	2	4
Principal Streams								
50-500 mi ²	7 Site(s)							
	29.2 Miles	29.2 Miles	100	0.00	0.00			

High Magnitude Causes

Direct Habitat Alterations
 Low Flow Alterations
 Organic Enrichment (Sewage) Biological Indicators
 Sedimentation/Siltation
 Other (Unknown Toxicity)

High Magnitude Sources

Channelization
 Flow Alterations from Water Diversions
 Package Plant or Other Small Flows Discharges
 Grazing in Riparian or Shoreline Zones
 Municipal (Urbanized High Density Area)

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 552

No. Ambient Sites: 28

No. Ambient Sampling Records: 234

75th %ile: 985

No. of NPDES MOR Sites: 3

No. of NPDES MOR Records: 78

90th %ile: 5190

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 27.88 Stream Miles Impaired: 27.88 Pollutants (Waterbody): PCBs (Walnut Creek)

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Development of TMDLs for pollutants impairing beneficial uses in the Walnut Creek watershed is underway. Biological and water quality monitoring in support of the TMDLs was conducted in 2005. Principal streams sampled in the lower watershed included Walnut Creek, George Creek, Little Walnut Creek, and Turkey Run. A report on the findings of the biological and water quality survey is available (<http://www.epa.state.oh.us/dsw/documents/WalnutCreek2005TSD.pdf>). Check the TMDL web page for updated information on the TMDL progress (<http://www.epa.state.oh.us/dsw/tmdl/index.html>).

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11

WAU Description

WAU Size (mi²): 176.1

05060001 190

Big Darby Creek (headwaters to downstream Sugar Run)

Integrated Report Assessment Category: 5

Priority Points: 2

Next Scheduled Monitoring: 2021

Aquatic Life Use Assessment

Subcategories of ALU: EWH,CWH,WWH,MWH,LRW
Impairment: Yes (4A-TMDL)

Sampling Year(s): 2001, 2002

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	16 Site(s)	13 Site(s)						
Primary Tributaries								
5-20 mi ²	16 Site(s)	10 Site(s)	61.0	32.8	6.2			
20-50 mi ²	2 Site(s)	1 Site(s)						
						53	44	3
Principal Streams								
50-500 mi ²	10 Site(s)							
	20.6 Miles	9.4 Miles	45.4	54.6	0.00			

High Magnitude Causes

Direct Habitat Alterations
Siltation
Flow Alteration
Nutrients
Metals
Organic Enrichment/DO

High Magnitude Sources

Channelization-Agriculture
Removal of Riparian Vegetation-Agriculture
Highway/Road/Bridge/Sewer Line Construction
Channelization-Development
Spills
Septage Disposal
Minor Municipal Point Source
Major Industrial Point Source

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (4A-TMDL)
No. Ambient Sites: 0
No. of NPDES MOR Sites: 3
Other:

Cause: Pathogens
No. Ambient Sampling Records: 0
No. of NPDES MOR Records: 61

Geometric Mean: 244
75th %ile: 740
90th %ile: 1490

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 22.96 Stream Miles Impaired: 22.96 Pollutants (Waterbody): PCBs (Big Darby Creek)
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Big Darby Creek basin were approved by U.S. EPA on May 9, 2006. Chemical, physical, and biological monitoring in support of the TMDL development was conducted in 2001 and 2002. A report on the findings of the biological and water quality survey can be found at: www.epa.state.oh.us/dsw/document_index/psdindx.html. The 2006 Integrated Report assessment of available fish tissue data from Big Darby Creek documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. The assessment unit will remain Category 5 until TMDLs are developed for all pollutants impairing all beneficial uses. See <http://www.epa.state.oh.us/dsw/tmdl/BigDarbyCreekTMDL.html> for more information.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²):** 77.0
 05060001 200 Big Darby Creek (downstream Sugar Run to upstream Little Darby Creek)

Integrated Report Assessment Category: 5 **Priority Points: 2**
Next Scheduled Monitoring: 2021

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH Sampling Year(s): 2001, 2002
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	2 Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	1 Site(s)	50.0	25.0	25.0			
20-50 mi ²	Site(s)	Site(s)				60	28	12
Principal Streams								
50-500 mi ²	4 Site(s)							
	16.8 Miles	11.6 Miles	69.3	30.7	0.00			

High Magnitude Causes

Nutrients
 Organic Enrichment/DO
 Direct Habitat Alterations
 Siltation

High Magnitude Sources

Minor Municipal Point Source
 Package Plants (Small Flows)
 Spills
 Nonirrigated Crop Production
 Channelization-Agriculture
 Removal of Riparian Vegetation-Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: No (1-Historical) Cause:
 No. of Ambient Sites: 0 No. of Ambient Sampling Records: 0 Geometric Mean: 561
 No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 18 75th %ile: 1212
 Other: 90th %ile: 3890

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 19.54 Stream Miles Impaired: 19.54 Pollutants (Waterbody): PCBs (Big Darby Creek)
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Big Darby Creek basin were approved by U.S. EPA on May 9, 2006. Chemical, physical, and biological monitoring in support of the TMDL development was conducted in 2001 and 2002. A report on the findings of the biological and water quality survey can be found at: www.epa.state.oh.us/dsw/document_index/psdindx.html. The 2006 Integrated Report assessment of available fish tissue data from Big Darby Creek documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. The assessment unit will remain Category 5 until TMDLs are developed for all pollutants impairing all beneficial uses. See <http://www.epa.state.oh.us/dsw/tmdl/BigDarbyCreekTMDL.html> for more information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 178.5

05060001 210

Little Darby Creek

Integrated Report Assessment Category: 5

Priority Points: 2

Next Scheduled Monitoring: 2021

Aquatic Life Use Assessment

Subcategories of ALU: EWH,CWH,WWH

Sampling Year(s): 2001, 2002

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	7 Site(s)	4 Site(s)						
Primary Tributaries								
5-20 mi ²	14 Site(s)	8 Site(s)	68.6	21.4	10.0			
20-50 mi ²	5 Site(s)	4 Site(s)				79	16	5
Principal Streams								
50-500 mi ²	11 Site(s)							
	31.4 Miles	28.1 Miles	89.5	10.5	0.00			

High Magnitude Causes

Unknown Toxicity
Siltation
Nutrients
Organic Enrichment/DO

High Magnitude Sources

Spills
Pasture Land
Channelization-Agriculture
Nonirrigated Crop Production
Minor Municipal Point Source

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (4A-TMDL)

Cause: Pathogens

Geometric Mean: 237

No. Ambient Sites: 1

No. Ambient Sampling Records: 8

75th %ile: 670

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 43

90th %ile: 2560

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 34.70 Stream Miles Impaired: 34.70 Pollutants (Waterbody): PCBs (Little Darby

Lake Acres Monitored: 0.0 Lake Acres Impaired: Creek)

WAU Comments

TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Big Darby Creek basin were approved by U.S. EPA on May 9, 2006. Chemical, physical, and biological monitoring in support of the TMDL development was conducted in 2001 and 2002. A report on the findings of the biological and water quality survey can be found at: www.epa.state.oh.us/dsw/document_index/psdindx.html. The 2006 Integrated Report assessment of available fish tissue data from Little Darby Creek documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. The assessment unit will remain Category 5 until TMDLs are developed for all pollutants impairing all beneficial uses. See <http://www.epa.state.oh.us/dsw/tmdl/BigDarbyCreekTMDL.html> for more information.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²):** 124.0
 05060001 220 Big Darby Creek (downstream Little Darby Creek to mouth)

Integrated Report Assessment Category: 5 **Priority Points: 2**
Next Scheduled Monitoring: 2021

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH,MWH,LRW Sampling Year(s): 2001, 2002
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	11 Site(s)	5 Site(s)						
Primary Tributaries								
5-20 mi ²	5 Site(s)	2 Site(s)	49.9	31.0	19.1			
20-50 mi ²	7 Site(s)	4 Site(s)				75	16	9
Principal Streams								
50-500 mi ²	15 Site(s)							
	34.1 Miles	34.1 Miles	100	0.00	0.00			

High Magnitude Causes

Organic Enrichment/DO
 Nutrients
 Unionized Ammonia
 Siltation
 Chromium
 Nickel
 Zinc

High Magnitude Sources

Groundwater Loadings
 Onsite Wastewater Systems (Septic Tanks)
 Package Plants (Small Flows)
 Nonirrigated Crop Production
 Urban Runoff/Storm Sewers (NPS)
 Land Development/Suburbanization
 Contaminated Sediments

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: No (1) Cause: Geometric Mean: 181
 No. of Ambient Sites: 3 No. of Ambient Sampling Records: 34 75th %ile: 393
 No. of NPDES MOR Sites: 3 No. of NPDES MOR Records: 66 90th %ile: 1685
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 36.20 Stream Miles Impaired: 31.10 Pollutants (Waterbody): PCBs (Big Darby Creek)
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Big Darby Creek basin were approved by U.S. EPA on May 9, 2006. Chemical, physical, and biological monitoring in support of the TMDL development was conducted in 2001 and 2002. A report on the findings of the biological and water quality survey can be found at: www.epa.state.oh.us/dsw/document_index/psdindx.html. The 2006 Integrated Report assessment of available fish tissue data from Big Darby Creek documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. The assessment unit will remain Category 5 until TMDLs are developed for all pollutants impairing all beneficial uses. See <http://www.epa.state.oh.us/dsw/tmdl/BigDarbyCreekTMDL.html> for more information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 146.7**
 05060002 020 Deer Creek (headwaters to upstream Sugar Run)

Integrated Report Assessment Category: 5 **Priority Points: 2**
Next Scheduled Monitoring: 2011

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 1997
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	4 Site(s)	83.3	0.0	16.7			
20-50 mi ²	5 Site(s)	5 Site(s)				92	0	8
Principal Streams								
50-500 mi ²	4 Site(s)							
	16.1 Miles	16.1 Miles	100	0.00	0.00			

High Magnitude Causes

Cause Unknown
 Unionized Ammonia
 Nutrients
 Pathogens

High Magnitude Sources

Major Municipal Point Source
 Package Plants (Small Flows)
 Aquaculture
 Urban Runoff/Storm Sewers (NPS)
 Channelization - Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3-Indeterminate Data) Cause: Geometric Mean: 316
 No. Ambient Sites: 0 No. Ambient Sampling Records: 0 75th %ile: 900
 No. of NPDES MOR Sites: 2 No. of NPDES MOR Records: 79 90th %ile: 1500
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 163.1

05060002 030

Deer Creek (upstream Sugar Run to upstream Dry Run)

Integrated Report Assessment Category: 5

Priority Points: 4

Next Scheduled Monitoring: 2011

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 1997

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	1 Site(s)	1 Site(s)	100.0	0.0	0.0			
20-50 mi ²	1 Site(s)	1 Site(s)						
Principal Streams						77	23	0
50-500 mi ²	5 Site(s)							
	18.9 Miles	10.1 Miles	53.4	46.6	0.00			

High Magnitude Causes

Cause Unknown
Nutrients
Flow Alteration

High Magnitude Sources

Nonirrigated Crop Production
Upstream Impoundment
Flow Reg./Mod. - Development
Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 49

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 185

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 15

90th %ile: 277

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 1277.0 Lake Acres Impaired:

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 102.1

05060002 040

Deer Creek (upstream Dry Run to mouth)

Integrated Report Assessment Category: 5

Priority Points: 4

Next Scheduled Monitoring: 2011

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 1997

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	1 Site(s)	1 Site(s)	50.0	50.0	0.0			
20-50 mi ²	1 Site(s)	0 Site(s)				75	25	0
Principal Streams								
50-500 mi ²	6 Site(s)							
	16.9 Miles	16.9 Miles	100	0.00	0.00			

High Magnitude Causes

High Magnitude Sources

Organic Enrichment/DO

Municipal Point Source

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 185

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 500

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 20

90th %ile: 800

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 174.6

05060002 070

Salt Creek (headwaters to upstream Queer Creek)

Integrated Report Assessment Category: 5

Priority Points: 5

Next Scheduled Monitoring: 2021

Aquatic Life Use Assessment

Subcategories of ALU: EWH,CWH,WWH

Sampling Year(s): 2005

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	9 Site(s)	8 Site(s)						
Primary Tributaries								
5-20 mi ²	12 Site(s)	6 Site(s)	68.1	31.9	0.0			
20-50 mi ²	3 Site(s)	2 Site(s)				81	19	0
Principal Streams								
50-500 mi ²	3 Site(s)							
	9.6 Miles	9.1 Miles	94.8	5.20	0.00			

High Magnitude Causes

High Magnitude Sources

Nutrients
Sedimentation/Siltation

Agriculture
Channelization
Loss of Riparian Habitat
Surface Mining

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1)

Cause:

Geometric Mean: 362

No. Ambient Sites: 29

No. Ambient Sampling Records: 69

75th %ile: 780

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 16

90th %ile: 1660

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 6.90 Stream Miles Impaired: 6.90 Pollutants (Waterbody): PCBs (Salt Creek)

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2005 as part of monitoring in the Salt Creek watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included Salt Creek, Beech Fork, Laurel Run, and Pine Creek. Recent bacteria data indicate that a prior impairment listing for the recreation use is no longer supported and the assessment unit has been delisted for that use. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 109.0

05060002 080

Middle Fork Salt Creek

Integrated Report Assessment Category: 5

Priority Points: 2

Next Scheduled Monitoring: 2021

Aquatic Life Use Assessment

Subcategories of ALU: EWH,CWH,WWH

Sampling Year(s): 2005

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	6 Site(s)	5 Site(s)						
Primary Tributaries								
5-20 mi ²	8 Site(s)	5 Site(s)	86.5	7.3	6.2			
20-50 mi ²	2 Site(s)	2 Site(s)				92	5	3
Principal Streams								
50-500 mi ²	2 Site(s)							
	9.6 Miles	9.4 Miles	97.9	2.10	0.00			

High Magnitude Causes

High Magnitude Sources

Direct Habitat Alterations
Other Flow Regime Alterations
Sedimentation/Siltation
Nutrients
Organic Enrichment (Sewage) Biological Indicators
Natural Conditions (Flow or Habitat)

Dam or Impoundment
Highways, Roads, Bridges, Infrastructure (New Construction)
Channelization
Grazing in Riparian or Shoreline Zones
Unrestricted Cattle Access
Loss of Riparian Habitat
Natural Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1)

Cause:

Geometric Mean: 317

No. of Ambient Sites: 17

No. of Ambient Sampling Records: 37

75th %ile: 600

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90th %ile: 1800

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 2.10 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2005 as part of monitoring in the Salt Creek watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included Middle Fork Salt Creek and Pigeon Creek. For the 2006 Integrated Report, 2005 bacteria data were available and indicated no impairment of the recreation use in this assessment unit. Biological and chemical data for assessment of aquatic life uses were not available for the 2006 report but are included in the 2008 Integrated Report. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 144.4

05060002 130

Sunfish Creek

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2016

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams	Site(s)							
50-500 mi ²	Miles	Miles						
<u>High Magnitude Causes</u>					<u>High Magnitude Sources</u>			

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A small amount of data were collected in this watershed, but there are not enough sampling locations to do a complete assessment. One biological reference site was sampled on Sunfish Creek, as well as one additional site near the mouth.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 113.0

05060002 140

South Fork Scioto Brush Creek

Integrated Report Assessment Category: 5

Priority Points: 3

Next Scheduled Monitoring: 2022

Aquatic Life Use Assessment

Subcategories of ALU: EWH, WWH

Sampling Year(s): 2001, 2002, 2006

Impairment: Yes (4C - Natural or Impoundment)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	25 Site(s)	19 Site(s)						
Primary Tributaries								
5-20 mi ²	10 Site(s)	10 Site(s)	88.0	2.0	10.0			
20-50 mi ²	1 Site(s)	1 Site(s)				97	1	2
Principal Streams								
50-500 mi ²	3 Site(s)							
	9.0 Miles	9.0 Miles	100	0.00	0.00			

High Magnitude Causes

Natural Conditions (Flow or Habitat)

High Magnitude Sources

Natural Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 523

No. Ambient Sites: 21

No. Ambient Sampling Records: 100

75th %ile: 2000

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90th %ile: 6040

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2006 as part of monitoring in the Scioto Brush Creek watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included South Fork Scioto Brush Creek, Mill Creek, Churn Creek, Turkey Creek, and Rocky Fork. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information. Fish data collected at 15 additional small stream sites in 2001 and 2002 were used to supplement the data collected by Ohio EPA during 2006.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 160.2

05060002 150 Scioto Brush Creek (excluding South Fork)

Integrated Report Assessment Category: 5

Priority Points: 5

Next Scheduled Monitoring: 2022

Aquatic Life Use Assessment

Subcategories of ALU: EWH, WWH

Sampling Year(s): 2001, 2002, 2006

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	28 Site(s)	16 Site(s)						
Primary Tributaries								
5-20 mi ²	12 Site(s)	10 Site(s)	86.1	6.0	8.9			
20-50 mi ²	2 Site(s)	2 Site(s)				90	6	4
Principal Streams								
50-500 mi ²	6 Site(s)							
	24.0 Miles	22.4 Miles	93.3	6.70	0.00			

High Magnitude Causes

Natural Conditions (Flow or Habitat)
Impairment Unknown
Direct Habitat Alterations
Nutrient/Eutrophication Biological Indicators
Organic Enrichment (Sewage) Biological Indicators

High Magnitude Sources

Natural Sources
Source Unknown
Unrestricted Cattle Access
On-Site Treatment Systems (Septic Systems and Similar Decentralized Systems)

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 388

No. of Ambient Sites: 37

No. of Ambient Sampling Records: 192

75th %ile: 2000

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90th %ile: 6180

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2006 as part of monitoring in the Scioto Brush Creek watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included Scioto Brush Creek, Rarden Creek, Bear Creek, and McCullough Creek. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information. Fish data collected at 12 additional small stream sites in 2001 and 2002 were used to supplement the data collected by Ohio EPA during 2006.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11

WAU Description

WAU Size (mi²): 119.3

05060003 010

Paint Creek (headwaters to downstream East Fork)

Integrated Report Assessment Category: 5

Priority Points: 7

Next Scheduled Monitoring: 2022

Aquatic Life Use Assessment

Subcategories of ALU: WWH, MWH-C
Impairment: Yes (5)

Sampling Year(s): 2006

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	2 Site(s)						
Primary Tributaries								
5-20 mi ²	1 Site(s)	0 Site(s)	50.0	33.4	16.6			
20-50 mi ²	3 Site(s)	2 Site(s)						
Principal Streams						31	61	8
50-500 mi ²	7 Site(s)							
	16.5 Miles	1.8 Miles	10.9	89.1	0.00			

High Magnitude Causes

Sedimentation/Siltation
Nutrient/Eutrophication Biological Indicators
Nutrients
Direct Habitat Alterations
Other Flow Regime Alterations

High Magnitude Sources

Crop Production with Subsurface Drainage
Unrestricted Cattle Access
Channelization
Urban Runoff/Storm Sewers
Municipal Point Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (5)
No. Ambient Sites: 15
No. of NPDES MOR Sites: 1
Other:

Cause: Pathogens
No. Ambient Sampling Records: 111
No. of NPDES MOR Records: 60

Geometric Mean: 539
75th %ile: 1200
90th %ile: 4200

Public Drinking Water Supply Assessment

Location(s): Paint Creek @RM 71.4 [Washington Court House]

Impairment: Unknown (3-Insufficient Data)
Cause:

Nitrate Indicator: Insufficient Data
Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 16.16 Stream Miles Impaired: 16.16 Pollutants (Waterbody): PCBs (Paint Creek)

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2006 as part of monitoring in the Paint Creek watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included Paint Creek and East Fork Paint Creek. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information. The 2006 Integrated Report assessment of available fish tissue data from Paint Creek documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 81.5
05060003 020 Sugar Creek

Integrated Report Assessment Category: 5 **Priority Points: 4**
Next Scheduled Monitoring: 2022

Aquatic Life Use Assessment

Subcategories of ALU: WWH, MWH-C Sampling Year(s): 2006
Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	1 Site(s)	41.7	33.3	25.0			
20-50 mi ²	3 Site(s)	1 Site(s)				51	37	12
Principal Streams								
50-500 mi ²	3 Site(s)							
	16.4 Miles	9.8 Miles	59.8	40.2	0.00			

High Magnitude Causes

Direct Habitat Alterations
Nutrient/Eutrophication Biological Indicators
Nutrients

High Magnitude Sources

Crop Production with Subsurface Drainage
Channelization
Municipal Point Sources
Unrestricted Cattle Access

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: No (1) Cause: Geometric Mean: 387
No. Ambient Sites: 8 No. Ambient Sampling Records: 60 75th %ile: 680
No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 61 90th %ile: 1960
Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2006 as part of monitoring in the Paint Creek watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included Sugar Creek. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 130.6

05060003 030

Rattlesnake Creek (headwaters to upstream Lees Creek)

Integrated Report Assessment Category: 5

Priority Points: 7

Next Scheduled Monitoring: 2022

Aquatic Life Use Assessment

Subcategories of ALU: WWH, MWH-C

Sampling Year(s): 2006

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	2 Site(s)						
Primary Tributaries								
5-20 mi ²	8 Site(s)	4 Site(s)	50.0	31.3	18.7			
20-50 mi ²	4 Site(s)	1 Site(s)				41	50	9
Principal Streams								
50-500 mi ²	3 Site(s)							
	18.8 Miles	6.1 Miles	32.4	67.6	0.00			

High Magnitude Causes

Direct Habitat Alterations
Sedimentation/Siltation
Ammonia (Total)
Organic Enrichment (Sewage) Biological Indicators

High Magnitude Sources

Crop Production with Subsurface Drainage
Channelization
Sanitary Sewer Overflows (Collection System Failures)
Municipal Point Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 550

No. Ambient Sites: 15

No. Ambient Sampling Records: 104

75th %ile: 1130

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 40

90th %ile: 3300

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2006 as part of monitoring in the Paint Creek watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included Rattlesnake Creek, West Branch Rattlesnake Creek, and Wilson Creek. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 148.3

05060003 040

Rattlesnake Creek (upstream Lees Creek to mouth)

Integrated Report Assessment Category: 5

Priority Points: 7

Next Scheduled Monitoring: 2022

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 2006

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	6 Site(s)	3 Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	6 Site(s)	87.5	4.2	8.3			
20-50 mi ²	3 Site(s)	3 Site(s)						
						94	2	4
Principal Streams								
50-500 mi ²	2 Site(s)							
	9.1 Miles	9.1 Miles	100	0.00	0.00			

High Magnitude Causes

Organic Enrichment (Sewage) Biological Indicators
Nutrient/Eutrophication Biological Indicators
Direct Habitat Alterations
Ammonia (Total)
Sedimentation/Siltation

High Magnitude Sources

Crop Production with Subsurface Drainage
Unrestricted Cattle Access
Channelization
Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 1847

No. Ambient Sites: 5

No. Ambient Sampling Records: 27

75th %ile: 10500

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 20

90th %ile: 38400

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2006 as part of monitoring in the Paint Creek watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included Rattlesnake Creek, Hardin Creek, Lees Creek, and Middle Fork Lees Creek. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 144.0

05060003 060

Rocky Fork Paint Creek

Integrated Report Assessment Category: 5

Priority Points: 6

Next Scheduled Monitoring: 2022

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 2006

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	7 Site(s)	6 Site(s)						
Primary Tributaries								
5-20 mi ²	3 Site(s)	3 Site(s)	79.8	20.2	0.0			
20-50 mi ²	6 Site(s)	4 Site(s)				61	10	29
Principal Streams								
50-500 mi ²	2 Site(s)							
	9.2 Miles	3.8 Miles	41.3	0.00	58.7			

High Magnitude Causes

High Magnitude Sources

Nutrient/Eutrophication Biological Indicators
Oxygen, Dissolved
Organic Enrichment (Sewage) Biological Indicators

Upstream Impoundments
Municipal Point Sources
Urban Runoff/Storm Sewers

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 961

No. Ambient Sites: 9

No. Ambient Sampling Records: 46

75th %ile: 2500

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 72

90th %ile: 10600

Other:

Public Drinking Water Supply Assessment

Location(s): Clear Creek (Rocky Fork) @RM 7.4 [Hillsboro]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: No (1)

Stream Miles Monitored: 1.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 2080.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2006 as part of monitoring in the Paint Creek watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included Rocky Fork Paint Creek and Clear Creek. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 120.5

05060003 080

North Fork Paint Creek (headwaters to downstream Compton Creek)

Integrated Report Assessment Category: 2

Priority Points:

Next Scheduled Monitoring: 2022

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH
Impairment: No (1)

Sampling Year(s): 2006

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	6 Site(s)	100.0	0.0	0.0			
20-50 mi ²	2 Site(s)	2 Site(s)				100	0	0
Principal Streams								
50-500 mi ²	2 Site(s) 6.1 Miles	2 Site(s) 6.1 Miles	100	0.00	0.00			
<u>High Magnitude Causes</u>			<u>High Magnitude Sources</u>					

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: No (1)
No. Ambient Sites: 10
No. of NPDES MOR Sites: 2
Other:

Cause:
No. Ambient Sampling Records: 77
No. of NPDES MOR Records: 37

Geometric Mean: 448
75th %ile: 735
90th %ile: 2000

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 2.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2006 as part of monitoring in the Paint Creek watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included North Fork Paint Creek and Compton Creek. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 114.0

05060003 090

North Fork Paint Creek (downstream Compton Creek to mouth)

Integrated Report Assessment Category: 5

Priority Points: 2

Next Scheduled Monitoring: 2022

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 2006

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	4 Site(s)	3 Site(s)	87.5	0.0	12.5			
20-50 mi ²	1 Site(s)	1 Site(s)				94	0	6
Principal Streams								
50-500 mi ²	6 Site(s)							
	24.6 Miles	24.6 Miles	100	0.00	0.00			

High Magnitude Causes

Organic Enrichment (Sewage) Biological Indicators
Sedimentation/Siltation
Natural Conditions (Flow or Habitat)

High Magnitude Sources

On-Site Treatment Systems (Septic Systems and Other Decentralized Systems)
Natural Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1)

Cause:

Geometric Mean: 252

No. Ambient Sites: 11

No. Ambient Sampling Records: 81

75th %ile: 490

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 77

90th %ile: 1930

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 26.70 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2006 as part of monitoring in the Paint Creek watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included North Fork Paint Creek and Little Creek. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 67.3
 05060003 100 Paint Creek (downstream Lower Twin Creek to mouth); excluding North
 Fork and Paint Creek mainstem

Integrated Report Assessment Category: 5 **Priority Points: 5**
Next Scheduled Monitoring: 2022

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 2006
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	5 Site(s)	4 Site(s)	90.0	0.0	10.0			
20-50 mi ²	Site(s)	Site(s)				90	0	10
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

Organic Enrichment (Sewage) Biological Indicators
 Sedimentation/Siltation
 Direct Habitat Alterations

High Magnitude Sources

On-Site Treatment Systems (Septic Systems and Other Decentralized
 Systems)
 Channelization

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 529
 No. Ambient Sites: 6 No. Ambient Sampling Records: 38 75th %ile: 2800
 No. of NPDES MOR Sites: 0 No. of NPDES MOR Records: 0 90th %ile: 6640
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2006 as part of monitoring in the Paint Creek watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled were all small tributaries to the lower mainstem of Paint Creek and included Black Run, Owl Creek, Plug Run, and Ralston Run. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 100.0
 05080001 010 Great Miami River (headwaters to upstream Cherokee Mans Run)

Integrated Report Assessment Category: 5 **Priority Points: 2**
Next Scheduled Monitoring: 2008

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH Sampling Year(s): 1994, 1999
 Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	2 Site(s)						
Primary Tributaries								
5-20 mi ²	9 Site(s)	4 Site(s)	77.8	5.6	16.6			
20-50 mi ²	1 Site(s)	1 Site(s)				39	53	8
Principal Streams								
50-500 mi ²	1 Site(s)							
	1.0 Miles	0.0 Miles	0.00	100	0.00			

High Magnitude Causes

Direct Habitat Alterations

High Magnitude Sources

Removal of Riparian Vegetation - Ag.

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3) Cause: Geometric Mean:
 No. of Ambient Sites: No. of Ambient Sampling Records: 75th %ile:
 No. of NPDES MOR Sites: No. of NPDES MOR Records: 90th %ile:
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: No (1)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 5104.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1994 and 1999 from this assessment unit were used in the 2004 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use. The 1994 data have exceeded the ten-year threshold and are now considered historical. There is not enough 1999 data to provide an adequate aquatic life assessment. However, while reflecting the current status that insufficient data are available to assess aquatic life use status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the U.S. EPA. Additionally, the 2004 Integrated Report erroneously listed this assessment unit as impaired for fish consumption. Data triggering the impairment were collected in assessment units located farther downstream. All fish tissue data collected from Indian Lake in this assessment unit indicated no fish consumption concerns. Comprehensive chemical, physical, and biological monitoring is scheduled in this assessment unit in 2008 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 88.5

05080001 020

Muchinippi Creek

Integrated Report Assessment Category: 5

Priority Points: 8

Next Scheduled Monitoring: 2008

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C

Sampling Year(s): 1994,1999

Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	2 Site(s)	100.0	0.0	0.0			
20-50 mi ²	1 Site(s)	1 Site(s)				50	50	0
Principal Streams								
50-500 mi ²	2 Site(s)							
	4.8 Miles	0.0 Miles	0.00	100	0.00			

High Magnitude Causes

High Magnitude Sources

Siltation
Direct Habitat Alterations

Nonirrigated Crop Production
Channelization - Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5-Historical)

Cause: Pathogens

Geometric Mean: 661

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 3775

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 34

90th %ile: 6960

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 2.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1994 and 1999 from this assessment unit were used in the 2002 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life and recreation beneficial uses. The 1994 data have exceeded the ten-year threshold and are now considered historical. There is not enough 1999 data to provide an adequate aquatic life assessment. However, while reflecting the current status that insufficient data are available to assess aquatic life and recreation use status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments (aquatic life and recreation) are completed and approved by the U.S. EPA. Comprehensive chemical, physical, and biological monitoring is scheduled in this assessment unit in 2008 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 145.6**
 05080001 040 Great Miami River (downstream Bokengehalas Creek to downstream Plum Creek)
Integrated Report Assessment Category: 5 **Priority Points: 5**
Next Scheduled Monitoring: 2008

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH Sampling Year(s): 1994
 Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries			100.0	0.0	0.0			
5-20 mi ²	2 Site(s)	2 Site(s)						
20-50 mi ²	Site(s)	Site(s)				98	2	0
Principal Streams								
50-500 mi ²	5 Site(s)		96.0	4.00	0.00			
	15.2 Miles	14.6 Miles						

High Magnitude Causes

Flow Alteration

High Magnitude Sources

Upstream Impoundment
 Flow Reg./Mod. - Development

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3-Indeterminate Data) Cause: Geometric Mean: 946
 No. of Ambient Sites: 0 No. of Ambient Sampling Records: 0 75th %ile: 2875
 No. of NPDES MOR Sites: 2 No. of NPDES MOR Records: 28 90th %ile: 10000
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5-Historical Data)
 Stream Miles Monitored: 15.91 Stream Miles Impaired: 13.91 Pollutants (Waterbody): PCBs (Great Miami River)
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Biological, fish tissue, and water quality data collected in 1993 and 1994 from this assessment unit were used in the 2004 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use and fish consumption. These data have exceeded the ten-year threshold and are now considered historical. However, while reflecting the current status that insufficient data are available to assess current aquatic life use and fish consumption status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the U.S. EPA. Comprehensive chemical, physical, and biological monitoring is scheduled in this assessment unit in 2008 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 147.4

05080001 050

Loramie Creek (headwaters to downstream Mile Creek)

Integrated Report Assessment Category: 5

Priority Points: 4

Next Scheduled Monitoring: 2008

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C

Sampling Year(s): 1994, 1999

Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	0 Site(s)	0.0	0.0	100			
20-50 mi ²	1 Site(s)	0 Site(s)						
						0	17	83
Principal Streams								
50-500 mi ²	2 Site(s)							
	3.0 Miles	0.0 Miles	0.00	33.3	66.7			

High Magnitude Causes

Siltation
Flow Alteration
Direct Habitat Alterations

High Magnitude Sources

Nonirrigated Crop Production
Channelization - Agriculture
Flow Reg./Mod. - Agriculture
Removal of Riparian Vegetation - Ag.
Streambank Destabilization - Ag.

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 451

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 1110

No. of NPDES MOR Sites: 3

No. of NPDES MOR Records: 89

90th %ile: 2596

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 1.34 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1994 and 1999 from this assessment unit were used in the 2002 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use. The 1994 data have exceeded the ten-year threshold and are now considered historical. There is not enough 1999 data to provide an adequate aquatic life assessment. However, while reflecting the current status that insufficient data are available to assess aquatic life use status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments (aquatic life and recreation) are completed and approved by the U.S. EPA. Comprehensive chemical, physical, and biological monitoring is scheduled in this assessment unit in 2008 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 117.6**
 05080001 060 Loramie Creek (downstream Mile Creek to mouth)

Integrated Report Assessment Category: 5 **Priority Points: 1**
Next Scheduled Monitoring: 2008

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C Sampling Year(s): 1994, 1999
 Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	1 Site(s)	0 Site(s)	0.0	0.0	100			
20-50 mi ²	Site(s)	Site(s)						
Principal Streams						11	9	80
50-500 mi ²	4 Site(s)							
	19.5 Miles	4.1 Miles	21.0	17.4	61.6			

High Magnitude Causes

Siltation
 Flow Alteration
 Direct Habitat Alterations

High Magnitude Sources

Nonirrigated Crop Production
 Channelization - Agriculture
 Streambank Destabilization - Ag.

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3) Cause:
 No. of Ambient Sites: No. of Ambient Sampling Records: Geometric Mean:
 No. of NPDES MOR Sites: No. of NPDES MOR Records: 75th %ile:
 Other: 90th %ile:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)
 Stream Miles Monitored: 19.46 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1994 and 1999 from this assessment unit were used in the 2002 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use. The 1994 data have exceeded the ten-year threshold and are now considered historical. There is not enough 1999 data to provide an adequate aquatic life assessment. However, while reflecting the current status that insufficient data are available to assess aquatic life use status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the U.S. EPA. Comprehensive chemical, physical, and biological monitoring is scheduled in this assessment unit in 2008 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 115.0

05080001 090

Stillwater River (headwaters to upstream Swamp Creek)

Integrated Report Assessment Category: 4A

Priority Points:

Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH,MWH-C

Sampling Year(s): 1999

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	14 Site(s)	5 Site(s)						
Primary Tributaries								
5-20 mi ²	11 Site(s)	5 Site(s)	56.1	9.1	34.8			
20-50 mi ²	3 Site(s)	2 Site(s)				63	14	23
Principal Streams								
50-500 mi ²	6 Site(s)							
	21.8 Miles	15.1 Miles	69.3	18.4	12.3			

High Magnitude Causes

High Magnitude Sources

Nutrients
Organic Enrichment/DO
Direct Habitat Alterations

Nonirrigated Crop Production
Confined Animal Feeding Oper. (NPS)
Onsite Wastewater Systems (Septic Tanks)
Channelization - Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1-Historical)

Cause:

Geometric Mean: 502

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 720

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 17

90th %ile: 866

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: No (1)

Stream Miles Monitored: 5.32 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing aquatic life uses in the Stillwater River basin was approved by U.S. EPA on June 15, 2004. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDL was conducted in 1999. A report on the findings of the biological and water quality survey can be found at www.epa.state.oh.us/dsw/document_index/psdindx.html.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 121.4
 05080001 100 Stillwater River (upstream Swamp Creek to upstream Greenville Creek)

Integrated Report Assessment Category: 5 **Priority Points: 3**
Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH,MWH-C Sampling Year(s): 1999
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	8 Site(s)	3 Site(s)						
Primary Tributaries								
5-20 mi ²	13 Site(s)	5 Site(s)	19.3	52.5	28.2			
20-50 mi ²	3 Site(s)	0 Site(s)				41	40	19
Principal Streams								
50-500 mi ²	7 Site(s)							
	27.3 Miles	17.3 Miles	63.4	27.5	9.10			

High Magnitude Causes

Other Inorganics
 Nutrients
 Siltation
 Organic Enrichment/DO
 Direct Habitat Alterations

High Magnitude Sources

Combined Sewer Overflows
 Nonirrigated Crop Productions
 Confined Animals Feeding Oper. (NPS)
 Septage Disposal
 Channelization - Agriculture
 Spills

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5-Historical) Cause: Pathogens Geometric Mean: 597
 No. of Ambient Sites: 0 No. of Ambient Sampling Records: 0 75th %ile: 1400
 No. of NPDES MOR Sites: 2 No. of NPDES MOR Records: 33 90th %ile: 3780
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: No (1)
 Stream Miles Monitored: 13.50 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing aquatic life uses in the Stillwater River basin was approved by U.S. EPA on June 15, 2004. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDL was conducted in 1999. A report on the findings of the biological and water quality survey can be found at www.epa.state.oh.us/dsw/document_index/psdindx.html. As this assessment unit continues to have a historical recreation beneficial use impairment, it will remain Category 5 until TMDLs are developed for all pollutants impairing all beneficial uses.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 70.1

05080001 110

Greenville Creek (headwaters to downstream West Branch)

Integrated Report Assessment Category: 5

Priority Points: 3

Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 1999

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	8 Site(s)	6 Site(s)	87.5	6.3	6.2			
20-50 mi ²	2 Site(s)	2 Site(s)				94	3	3
Principal Streams								
50-500 mi ²	3 Site(s)							
	16.2 Miles	16.2 Miles	100	0.00	0.00			

High Magnitude Causes

High Magnitude Sources

Organic Enrichment/DO
Direct Habitat Alterations

Channelization - Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5-Historical)

Cause: Pathogens

Geometric Mean: 208

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 900

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 23

90th %ile: 1640

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing aquatic life uses in the Stillwater River basin was approved by U.S. EPA on June 15, 2004. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDL was conducted in 1999. A report on the findings of the biological and water quality survey can be found at www.epa.state.oh.us/dsw/document_index/psdindx.html. As this assessment unit continues to have a historical recreation beneficial use impairment, it will remain Category 5 until TMDLs are developed for all pollutants impairing all beneficial uses.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 97.6

05080001 120

Greenville Creek (downstream West Branch to mouth)

Integrated Report Assessment Category: 5

Priority Points: 3

Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 1999

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	8 Site(s)	5 Site(s)						
Primary Tributaries								
5-20 mi ²	8 Site(s)	8 Site(s)	100.0	0.0	0.0			
20-50 mi ²	2 Site(s)	2 Site(s)				75	18	7
Principal Streams								
50-500 mi ²	11 Site(s)							
	24.3 Miles	12.1 Miles	49.8	35.8	14.4			

High Magnitude Causes

Organic Enrichment/DO

High Magnitude Sources

Major Municipal Point Source
Onsite Wastewater System (Septic Tanks)
Channelization - Development

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5-Historical)

Cause: Pathogens

Geometric Mean: 546

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 918

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 62

90th %ile: 1297

Other:

Public Drinking Water Supply Assessment

Location(s): Greenville Creek @RM 22.3 and Mud Creek @RM 0.88 [Greenville]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing aquatic life uses in the Stillwater River basin was approved by U.S. EPA on June 15, 2004. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDL was conducted in 1999. A report on the findings of the biological and water quality survey can be found at www.epa.state.oh.us/dsw/document_index/psdindx.html. As this assessment unit continues to have a historical recreation beneficial use impairment, it will remain Category 5 until TMDLs are developed for all pollutants impairing all beneficial uses.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 148.0**
 05080001 140 Stillwater River (upstream Ludlow Creek to mouth); excluding Stillwater
 R. mainstem

Integrated Report Assessment Category: 5 **Priority Points: 3**
Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH Sampling Year(s): 1999
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	4 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	4 Site(s)	83.3	8.3	8.4			
20-50 mi ²	5 Site(s)	5 Site(s)				83	8	9
Principal Streams								
50-500 mi ²	10 Site(s)							
	0.0 Miles	0.0 Miles	0.00	0.00	0.00			

High Magnitude Causes

Unionized Ammonia
 Nutrients
 Organic Enrichment/DO
 Direct Habitat Alterations

High Magnitude Sources

Major Industrial Point Source Spills
 Nonirrigated Crop Production
 Urban Runoff/Storm Sewers (NPS)
 Onsite Wastewater Systems (Septic Tanks)
 Septage Disposal
 Channelization - Agriculture
 Channelization - Development

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5-Historical) Cause: Pathogens Geometric Mean:
 No. of Ambient Sites: 0 No. of Ambient Sampling Records: 0 75th %ile:
 No. of NPDES MOR Sites: 0 No. of NPDES MOR Records: 0 90th %ile:
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing aquatic life uses in the Stillwater River basin was approved by U.S. EPA on June 15, 2004. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDL was conducted in 1999. A report on the findings of the biological and water quality survey can be found at www.epa.state.oh.us/dsw/document_index/psdindx.html. As this assessment unit continues to have a historical recreation beneficial use impairment, it will remain Category 5 until TMDLs are developed for all pollutants impairing all beneficial uses.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 134.7

05080001 150

Mad River (headwaters to downstream Kings Creek)

Integrated Report Assessment Category: 5

Priority Points: 8

Next Scheduled Monitoring: 2018

Aquatic Life Use Assessment

Subcategories of ALU: CWH

Sampling Year(s): 2003

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	2 Site(s)						
Primary Tributaries								
5-20 mi ²	12 Site(s)	11 Site(s)	88.0	12.0	0.0			
20-50 mi ²	5 Site(s)	4 Site(s)				94	6	0
Principal Streams								
50-500 mi ²	4 Site(s)							
	7.9 Miles	7.9 Miles	100	0.00	0.00			

High Magnitude Causes

High Magnitude Sources

Direct Habitat Alterations

Channelization - Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 628

No. Ambient Sites: 7

No. Ambient Sampling Records: 30

75th %ile: 925

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 14

90th %ile: 2110

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 8.18 Stream Miles Impaired: 7.08 Pollutants (Waterbody): PCBs (Mad River)

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway. Biological and water quality monitoring in support of the TMDLs was conducted in 2003. Principal streams sampled included the Mad River, Macochee Creek, and Kings Creek. The 2006 Integrated Report assessment of available fish tissue data from the Mad River documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. A report on the findings of the biological and water quality survey can be found at: www.epa.state.oh.us/dsw/document_index/psdindx.html.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 153.5**
 05080001 160 Mad River (downstream Kings Creek to downstream Chapman Creek)

Integrated Report Assessment Category: 5 **Priority Points: 7**
Next Scheduled Monitoring: 2018

Aquatic Life Use Assessment

Subcategories of ALU: CWH,WWH Sampling Year(s): 2003
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	8 Site(s)	5 Site(s)						
Primary Tributaries								
5-20 mi ²	14 Site(s)	11 Site(s)	72.8	17.9	9.3			
20-50 mi ²	4 Site(s)	3 Site(s)				86	9	5
Principal Streams								
50-500 mi ²	4 Site(s)							
	11.2 Miles	11.2 Miles	100	0.00	0.00			

High Magnitude Causes

Organic Enrichment/DO
 Nutrients
 Metals
 Priority Organics
 Direct Habitat Alterations
 Siltation

High Magnitude Sources

Minor Municipal Point Source
 Channelization - Development
 Sanitary Overflows
 Urban Runoff/Storm Sewers (NPS)
 Contaminated Sediments
 Channelization - Agriculture
 Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 193
 No. Ambient Sites: 8 No. Ambient Sampling Records: 45 75th %ile: 713
 No. of NPDES MOR Sites: 2 No. of NPDES MOR Records: 77 90th %ile: 3070
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 11.24 Stream Miles Impaired: 11.24 Pollutants (Waterbody): PCBs (Mad River)
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway. Biological and water quality monitoring in support of the TMDLs was conducted in 2003. Principal streams sampled included the Mad River, Muddy Creek, Nettle Creek, and Chapman Creek. A report on the findings of the biological and water quality survey can be found at: www.epa.state.oh.us/dsw/document_index/psdindx.html.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 140.6

05080001 170

Buck Creek

Integrated Report Assessment Category: 5

Priority Points: 7

Next Scheduled Monitoring: 2018

Aquatic Life Use Assessment

Subcategories of ALU: CWH,WWH

Sampling Year(s): 2003

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	5 Site(s)	5 Site(s)	100.0	0.0	0.0			
20-50 mi ²	4 Site(s)	4 Site(s)				80	20	0
Principal Streams								
50-500 mi ²	2 Site(s)							
	8.8 Miles	5.2 Miles	49.3	50.7	0.00			

High Magnitude Causes

High Magnitude Sources

Direct Habitat Alterations

Upstream Impoundment

Flow Alteration

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 591

No. Ambient Sites: 3

No. Ambient Sampling Records: 15

75th %ile: 3850

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90th %ile: 17880

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 4.60 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 2220.0 Lake Acres Impaired:

WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway. Biological and water quality monitoring in support of the TMDLs was conducted in 2003. Principal streams sampled included Buck Creek, East Fork Buck Creek, and Beaver Creek. A report on the findings of the biological and water quality survey can be found at: www.epa.state.oh.us/dsw/document_index/psdindx.html.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 100.4
 05080001 190 Mad River (upstream Mud Creek to mouth); excluding Mad R. mainstem

Integrated Report Assessment Category: 5 **Priority Points: 10**
Next Scheduled Monitoring: 2018

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C Sampling Year(s): 2003
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	10 Site(s)	6 Site(s)	67.5	17.5	15.0			
20-50 mi ²	4 Site(s)	3 Site(s)				68	17	15
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

Organic Enrichment/DO
 Direct Habitat Alterations
 Flow Alteration

High Magnitude Sources

Package Plants (Small Flows)
 Landfills
 Urban Runoff/Storm Sewers (NPS)
 Flow Regulation/Modification - Development

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 1422
 No. Ambient Sites: 3 No. Ambient Sampling Records: 15 75th %ile: 6675
 No. of NPDES MOR Sites: 0 No. of NPDES MOR Records: 0 90th %ile: 20700
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody): PCBs (Eastwood Lake)
 Lake Acres Monitored: 170.0 Lake Acres Impaired: 170.0

WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway. Biological and water quality monitoring in support of the TMDLs was conducted in 2003. Principal streams sampled included Mud Creek and Mud Run. A report on the findings of the biological and water quality survey can be found at: www.epa.state.oh.us/dsw/document_index/psdindx.html.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 143.4

05080001 200

Great Miami River (upstream Honey Creek to upstream Mad River);
excluding GMR mainstem

Integrated Report Assessment Category: 2

Priority Points:

Next Scheduled Monitoring: 2009

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH,LRW
Impairment: Unknown (3)

Sampling Year(s):

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams	Site(s)							
50-500 mi ²	Miles	Miles						
<u>High Magnitude Causes</u>					<u>High Magnitude Sources</u>			

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: No (1)
No. Ambient Sites: 9
No. of NPDES MOR Sites: 1
Other:

Cause:
No. Ambient Sampling Records: 16
No. of NPDES MOR Records: 84

Geometric Mean: 377
75th %ile: 754
90th %ile: 1303

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
Stream Miles Monitored: 2.00 Stream Miles Impaired: Pollutants (Waterbody):
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11

WAU Description

WAU Size (mi²): 157.3

05080002 030

Twin Creek (headwaters to upstream Bantas Fork)

Integrated Report Assessment Category: 5

Priority Points: 6

Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH, MWH-C

Sampling Year(s): 2005

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	13 Site(s)	5 Site(s)	69.3	30.7	0.0			
20-50 mi ²	3 Site(s)	3 Site(s)				81	19	0
Principal Streams								
50-500 mi ²	6 Site(s)							
	11.4 Miles	10.5 Miles	92.1	7.90	0.00			

High Magnitude Causes

Phosphorus (Total)
Excess Algal Growth
Sedimentation/Siltation
Ammonia (Total)
Oxygen, Dissolved
Natural Conditions (Flow or Habitat)

High Magnitude Sources

Municipal Point Source Discharges
Runoff from Forest/Grassland/Parkland
Channelization
Crop Production with Subsurface Drainage
Loss of Riparian Habitat
Sewage Discharges in Unsewered Areas
Animal Feeding Operations (NPS)
Agriculture
On-Site Treatment Systems (Septic Systems and Similar Decentralized Systems)
Natural Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

No. Ambient Sites: 11

No. of NPDES MOR Sites: 4

Other:

Cause: Pathogens

No. Ambient Sampling Records: 75

No. of NPDES MOR Records: 80

Geometric Mean: 447

75th %ile: 1040

90th %ile: 4560

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Cause:

Nitrate Indicator:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5-Historical Data)

Stream Miles Monitored: 11.18 Stream Miles Impaired: 11.18 Pollutants (Waterbody): PCBs

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the Twin Creek basin in 2005. Principal streams sampled included Twin Creek, Millers Fork, Swamp Creek, and Price Creek. For the 2006 Integrated Report, 2005 bacteria data were available which resulted in an impaired recreation use assessment. 2005 biological and chemical data for assessment of aquatic life uses were not available for the 2006 Integrated Report but are the basis for the TMDL and are included in the 2008 Integrated Report. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information on the Twin Creek TMDL report and its assessment of pollutants impairing beneficial uses.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 159.0

05080002 040

Twin Creek (upstream Bantas Fork to mouth)

Integrated Report Assessment Category: 5

Priority Points: 8

Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 2005

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	4 Site(s)	2 Site(s)						
Primary Tributaries								
5-20 mi ²	9 Site(s)	6 Site(s)	66.7	33.3	0.0			
20-50 mi ²	4 Site(s)	3 Site(s)				83	17	0
Principal Streams								
50-500 mi ²	8 Site(s)							
	24.3 Miles	24.3 Miles	100	0.00	0.00			

High Magnitude Causes

Oxygen, Dissolved
Sedimentation/Siltation
Ammonia (Total)
Chemical Oxygen Demand (COD)
Phosphorus (Total)
Natural Conditions (Flow or Habitat)

High Magnitude Sources

Channelization
Loss of Riparian Habitat
Package Plant or Other Permitted Small flow Discharges
Crop Production with Subsurface Drainage
Natural Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 383

No. Ambient Sites: 10

No. Ambient Sampling Records: 44

75th %ile: 803

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 18

90th %ile: 3100

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5-Historical Data)

Stream Miles Monitored: 24.32 Stream Miles Impaired: 24.32 Pollutants (Waterbody): PCBs

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the Twin Creek basin in 2005. Principal streams sampled included Twin Creek, Bantas Fork, Aukerman Creek, Tom's Run, and Little Twin Creek. For the 2006 Integrated Report, 2005 bacteria data were available which resulted in an impaired recreation use assessment. 2005 biological and chemical data for assessment of aquatic life uses were not available for the 2006 Integrated Report but are the basis for the TMDL and are included in the 2008 Integrated Report. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information on the Twin Creek TMDL report and its assessment of pollutants impairing beneficial uses.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 137.2

05080002 060

Sevenmile Creek

Integrated Report Assessment Category: 1

Priority Points:

Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 2002

Impairment: No (1)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	2 Site(s)						
Primary Tributaries								
5-20 mi ²	7 Site(s)	7 Site(s)	100.0	0.0	0.0			
20-50 mi ²	5 Site(s)	5 Site(s)				100	0	0
Principal Streams								
50-500 mi ²	6 Site(s)							
	20.7 Miles	20.7 Miles	100	0.00	0.00			

High Magnitude Causes

High Magnitude Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1)

Cause:

Geometric Mean: 314

No. Ambient Sites: 34

No. Ambient Sampling Records: 169

75th %ile: 650

No. of NPDES MOR Sites: 4

No. of NPDES MOR Records: 114

90th %ile: 1692

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: No (1)

Stream Miles Monitored: 13.20 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 54.0 Lake Acres Impaired:

WAU Comments

Biological and water quality monitoring was conducted in the Sevenmile Creek watershed in 2002. Full attainment of designated or recommended aquatic life uses was met at all sampling locations in Sevenmile Creek and seven tributaries (Big Cave Run, Rush Run, Paint Creek, Beasley Run, Pottenger Run, Rocky Run, and Periwinkle Run). However, an assessment of available bacteria data indicated an impairment of the Primary Contact Recreation use in the watershed which resulted in the Category 5 listing. Additional, more conclusive bacteria monitoring in 2004 indicated no recreation use impairment.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11

WAU Description

WAU Size (mi²): 160.6

05080002 070 Fourmile Creek (excluding Sevenmile Creek)

Integrated Report Assessment Category: 5

Priority Points: 7

Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH
Impairment: Yes (5)

Sampling Year(s): 2005

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	7 Site(s)	4 Site(s)						
Primary Tributaries								
5-20 mi ²	8 Site(s)	5 Site(s)	79.9	20.1	0.0			
20-50 mi ²	2 Site(s)	2 Site(s)				79	21	0
Principal Streams								
50-500 mi ²	8 Site(s)							
	22.0 Miles	17.2 Miles	78.2	21.8	0.00			

High Magnitude Causes

High Magnitude Sources

Phosphorus (Total)
Sedimentation/Siltation
Ammonia (Total)
Alterations in Stream-Side or Littoral Vegetative Covers
Oxygen, Dissolved
Barium
Copper
Iron
Other Flow Regime Alterations
Natural Conditions (Flow or Habitat)

Municipal Point Source Discharges
Channelization
Unrestricted Cattle Access
Loss of Riparian Habitat
Municipal (Urbanized High Density Area)
Urban Runoff/Storm Sewers
Natural Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 235

No. Ambient Sites: 15

No. Ambient Sampling Records: 70

75th %ile: 380

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 79

90th %ile: 1700

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: No (1)

Stream Miles Monitored: 19.30 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological sampling was conducted in the assessment unit in 2005 as part of monitoring in the Fourmile Creek watershed to develop TMDLs for pollutants causing beneficial use impairments. Significant streams within the study area included Fourmile Creek, Little Fourmile Creek, and East Fork Fourmile Creek. Available 2005 bacteria data were included in the 2006 Integrated Report and indicated one stream with an impairment of the recreation beneficial use. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 71.9

05080002 080

Indian Creek

Integrated Report Assessment Category: 2

Priority Points:

Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 2005

Impairment: Yes (4C - Natural or Impoundment)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	1 Site(s)	0 Site(s)	58.3	33.3	8.4			
20-50 mi ²	1 Site(s)	1 Site(s)				79	17	4
Principal Streams								
50-500 mi ²	5 Site(s) 19.5 Miles	19.5 Miles	100	0.00	0.00			

High Magnitude Causes

High Magnitude Sources

Natural Conditions (Flow or Habitat)

Natural Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1)

Cause:

Geometric Mean: 261

No. Ambient Sites: 5

No. Ambient Sampling Records: 24

75th %ile: 548

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 20

90th %ile: 1040

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 13.50 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological sampling was conducted in the assessment unit in 2005 as part of monitoring in the Indian Creek watershed to develop TMDLs for pollutants causing beneficial use impairments. Significant streams within the study area included Indian Creek. Available 2005 bacteria data were included in the 2006 Integrated Report and indicated no impairment of the recreation beneficial use. All aquatic life use impairment was due to naturally occurring intermittent or very low stream flow conditions. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 70.6

05080003 070

East Fork Whitewater River

Integrated Report Assessment Category: 5

Priority Points: 3

Next Scheduled Monitoring: 2015

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5-Historical)

Cause: Pathogens

Geometric Mean: 608

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 2350

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 28

90th %ile: 3190

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

This short segment in Ohio has not been sampled since 1982. Sampling at one biological reference site on Welker Lateral (headwaters of East Fork), has been attempted several times in the last few years, but has been dry. Available bacteria data, now considered historical, indicated an impairment of the Primary Contact Recreation use in the assessment unit which resulted in the Category 5 listing.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 135.5

05090101 020

Raccoon Creek (headwaters to upstream Hewett Fork)

Integrated Report Assessment Category: 5

Priority Points: 1

Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH,LRW

Sampling Year(s): 1995, 1996, 2000,

Impairment: Yes (5)

2002

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	8 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	5 Site(s)	1 Site(s)	8.1	27.9	64.0			
20-50 mi ²	3 Site(s)	0 Site(s)						
						28	40	32
Principal Streams								
50-500 mi ²	4 Site(s)							
	22.4 Miles	10.5 Miles	46.9	53.1	0.00			

High Magnitude Causes

High Magnitude Sources

Metals
Zinc
Iron
Aluminum
Other Metals
pH
Siltation
Direct Habitat Alterations

Nonirrigated Crop Production
Surface Mining
Acid Mine Drainage
Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. of Ambient Sites:

No. of Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 127.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for mine drainage pollutants impairing aquatic life uses was approved by the U.S. EPA on March 20, 2003. Monitoring in support of TMDL development was conducted in 1995, 1996, and 2000. Supplemental data used in the 2004 assessment cycle were collected by the Center for Applied Bioassessment & Criteria (CABB) in 2002. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. A watershed action plan for this assessment unit has been endorsed by the Ohio EPA and Ohio DNR. Because other causes of aquatic life use impairment have been identified (siltation and direct habitat alterations), additional TMDL work will be needed to remove Raccoon Creek from its Category 5 listing.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²):** 155.0
 05090101 030 Raccoon Creek (upstream Hewett Fork to downstream Elk Fork)

Integrated Report Assessment Category: 5 **Priority Points: 4**
Next Scheduled Monitoring: 2019

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW Sampling Year(s): 1995, 2000, 2002
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	25 Site(s)	9 Site(s)						
Primary Tributaries								
5-20 mi ²	12 Site(s)	4 Site(s)	29.8	51.9	18.3			
20-50 mi ²	4 Site(s)	1 Site(s)						
Principal Streams						41	50	9
50-500 mi ²	4 Site(s)							
	25.9 Miles	13.7 Miles	52.9	47.1	0.00			

High Magnitude Causes

Cause Unknown Salinity /TDS/ Chlorides
 Metals Oil and Grease
 Zinc
 Iron
 Other Metals
 Nutrients
 pH
 Siltation

High Magnitude Sources

Minor Industrial Point Source
 Surface Mining
 Subsurface Mining
 Petroleum Activities
 Acid Mine Drainage
 Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3-Indeterminate Data) Cause: Geometric Mean: 407
 No. of Ambient Sites: 1 No. of Ambient Sampling Records: 10 75th %ile: 1500
 No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 19 90th %ile: 2740
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for mine drainage pollutants impairing aquatic life uses was approved by the U.S. EPA on March 20, 2003. Monitoring in support of TMDL development was conducted in 1995, 1996, and 2000. Supplemental data used in the 2004 assessment cycle were collected by the Center for Applied Bioassessment & Criteria (CABB) in 2002. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. A watershed action plan for this assessment unit has been endorsed by the Ohio EPA and Ohio DNR. Because other causes of aquatic life use impairment have been identified (siltation and direct habitat alterations), additional TMDL work will be needed to remove Raccoon Creek from its Category 5 listing.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²):** 95.0
 05090101 040 Raccoon Creek (downstream Elk Fork to upstream Little Raccoon Creek)

Integrated Report Assessment Category: 5 **Priority Points: 2**
Next Scheduled Monitoring: 2014

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH,LRW Sampling Year(s): 1995, 1998, 2002
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	15 Site(s)	5 Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	2 Site(s)	33.3	18.4	48.3			
20-50 mi ²	Site(s)	Site(s)						
						27	49	24
Principal Streams								
50-500 mi ²	3 Site(s)							
	28.8 Miles	5.9 Miles	20.5	79.5	0.00			

High Magnitude Causes

Metals
 Zinc
 Iron
 Other Metals
 pH
 Siltation
 Flow Alteration
 Natural Limits (Wetlands)

High Magnitude Sources

Nonirrigated Crop Production
 Mining
 Acid Mine Drainage
 Natural
 Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3) Cause:
 No. of Ambient Sites: No. of Ambient Sampling Records: Geometric Mean:
 No. of NPDES MOR Sites: No. of NPDES MOR Records: 75th %ile:
 Other: 90th %ile:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
 Stream Miles Monitored: 2.65 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for mine drainage pollutants impairing aquatic life uses was approved by the U.S. EPA on March 20, 2003. Monitoring in support of TMDL development was conducted in 1995, 1996, and 2000. Supplemental data used in the 2004 assessment cycle were collected by the Center for Applied Bioassessment & Criteria (CABB) in 2002. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. A watershed action plan for this assessment unit has been endorsed by the Ohio EPA and Ohio DNR. Because other causes of aquatic life use impairment have been identified (siltation and direct habitat alterations), additional TMDL work will be needed to remove Raccoon Creek from its Category 5 listing.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 154.6

05090101 050

Little Raccoon Creek

Integrated Report Assessment Category: 5

Priority Points: 1

Next Scheduled Monitoring: 2014

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH,LRW

Sampling Year(s): 1995, 1999

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	8 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	4 Site(s)	0 Site(s)	0.0	6.3	93.7			
20-50 mi ²	Site(s)	Site(s)						
Principal Streams						0	53	47
50-500 mi ²	Site(s) Miles	Miles						

High Magnitude Causes

Metals
Nickel
Iron
Aluminum
Other Metals
Nutrients
pH
Siltation

Organic Enrichment/ DO
Salinity/TDS/Chlorides
Thermal Modifications
Direct Habitat Alterations

High Magnitude Sources

Minor Industrial Point Source
Major Municipal Point Source
Nonirrigated Crop Production
Pasture Land
Confined Animal Feeding Operations (NPS)
Mine Tailings
Acid Mine Drainage
Removal of Riparian Vegetation - Ag.
Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1)

Cause:

Geometric Mean: 409

No. Ambient Sites: 1

No. Ambient Sampling Records: 20

75th %ile: 766

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 266

90th %ile: 1884

Other:

Public Drinking Water Supply Assessment

Location(s): Little Raccoon Creek @RM 30, Lake Rupert, Alma Lake [Wellston]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 27.60 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 388.0 Lake Acres Impaired:

WAU Comments

A watershed action plan for this assessment unit has been endorsed by the Ohio EPA and Ohio DNR.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 140.8**
 05090101 060 Raccoon Creek (downstream Little Raccoon Creek to mouth); excluding
 Raccoon Creek mainstem

Integrated Report Assessment Category: 5 **Priority Points: 4**
Next Scheduled Monitoring: 2014

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 1999
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	4 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	3 Site(s)	37.5	8.3	54.2			
20-50 mi ²	Site(s)	Site(s)				38	8	54
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

Cause Unknown
 Metals
 Nutrients
 Flow Alteration

High Magnitude Sources

Minor Industrial Point Source
 Nonirrigated Crop Production
 Animal Holding/Management Areas
 Natural
 Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact Cause: Pathogens Geometric Mean: 402
 Impairment: Yes (5) No. Ambient Sampling Records: 0 75th %ile: 580
 No. Ambient Sites: 0 No. of NPDES MOR Records: 17 90th %ile: 3178
 No. of NPDES MOR Sites: 1
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 204.0 Lake Acres Impaired:

WAU Comments

A watershed action plan for this assessment unit has been endorsed by the Ohio EPA and Ohio DNR.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 139.0
 05090101 070 Ohio River tributaries (downstream Raccoon Creek to upstream Symmes
 Creek)
Integrated Report Assessment Category: 3 **Priority Points:**
Next Scheduled Monitoring: 2014

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s):
 Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3) Cause:
 No. Ambient Sites: No. Ambient Sampling Records: Geometric Mean:
 No. of NPDES MOR Sites: No. of NPDES MOR Records: 75th %ile:
 Other: 90th %ile:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
 Stream Miles Monitored: 9.80 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 119.1

05090101 080

Symmes Creek (headwaters to downstream Black Fork)

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2014

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 982

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 2000

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 18

90th %ile: 3350

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A small amount of data were collected in this watershed, but there are not enough sampling locations to do a complete assessment. Very little data have been collected throughout the Symmes Creek watershed.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 184.2

05090103 020

Pine Creek

Integrated Report Assessment Category: 5

Priority Points: 5

Next Scheduled Monitoring: 2009

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 1996, 1997

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	6 Site(s)	4 Site(s)						
Primary Tributaries								
5-20 mi ²	1 Site(s)	0 Site(s)	36.6	20.0	43.4			
20-50 mi ²	5 Site(s)	2 Site(s)				68	10	22
Principal Streams								
50-500 mi ²	2 Site(s) 4.0 Miles	4.0 Miles	100	0.00	0.00			

High Magnitude Causes

High Magnitude Sources

Metals
pH
Siltation
Salinity/TDS/Chlorides

Surface Mining
Mine Tailings
Acid Mine Drainage

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 303

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 749

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 50

90th %ile: 1150

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5-Historical Data)

Stream Miles Monitored: 24.40 Stream Miles Impaired: 24.40 Pollutants (Waterbody): PCBs (Pine Creek)

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Impairment of the aquatic life use in the Pine Creek watershed is based on a limited amount of data collected in 1996 and 1997 in response to an investigation of a severe acid mine drainage seep. The 2006 Integrated Report assessment of available fish tissue data from Pine Creek documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption. While the data used to assess fish consumption status are now considered historical, the assessment unit will remain Category 5 until TMDLs are developed for all pollutants impairing all beneficial uses.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 107.8

05090103 030

Little Scioto River (headwaters to upstream Rocky Fork)

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2009

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s):

Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 136.9**
 05090201 010 Ohio River tributaries (downstream 8-digit divide to upstream Ohio Brush
 Creek)
Integrated Report Assessment Category: 5 **Priority Points: 4**
Next Scheduled Monitoring: 2011

Aquatic Life Use Assessment

Subcategories of ALU: CWH,EWH,WWH Sampling Year(s): 1997, 1999, 2000
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries			75.0	25.0	0.0			
5-20 mi ²	5 Site(s)	5 Site(s)						
20-50 mi ²	2 Site(s)	1 Site(s)				75	25	0
Principal Streams	Site(s)							
50-500 mi ²	Miles	Miles						

High Magnitude Causes

Siltation

High Magnitude Sources

Land Development/Suburbanization

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3) Cause:
 No. of Ambient Sites: No. of Ambient Sampling Records: Geometric Mean:
 No. of NPDES MOR Sites: No. of NPDES MOR Records: 75th %ile:
 Other: 90th %ile:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
 Cause:

Nitrate Indicator:
 Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Aquatic life use impairment in this watershed was restricted to one sampling location in Turkey Creek, related to siltation from a temporary construction project in 1999. Sampling one year after the event (2000) revealed fish IBI scores exceeding the ecoregional biocriterion but MLwb scores falling just below expectations. Because the impact was of a transient nature and total recovery and full aquatic life use attainment in Turkey Creek were anticipated, the assessment unit was listed as Category 4B in the 2002 and 2004 Integrated Reports. After conferral with U.S. EPA Region 5, it was reassessed as Category 5 in the 2006 report. The watershed is next scheduled for extensive monitoring in 2011.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 130.0

05090201 030

Ohio Brush Creek (headwaters to downstream Baker Fork)

Integrated Report Assessment Category: 5

Priority Points: 3

Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 1997, 2001

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	2 Site(s)	87.5	12.5	0.0			
20-50 mi ²	4 Site(s)	3 Site(s)				88	12	0
Principal Streams								
50-500 mi ²	Site(s)	Miles						

High Magnitude Causes

High Magnitude Sources

Nutrients

Nonirrigated Crop Production

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 154

No. Ambient Sites: 1

No. Ambient Sampling Records: 4

75th %ile: 2131

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90th %ile: 5653

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 134.1

05090201 040

West Fork Ohio Brush Creek

Integrated Report Assessment Category: 5

Priority Points: 7

Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH
Impairment: Yes (5)

Sampling Year(s): 2001

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	5 Site(s)	4 Site(s)	90.0	0.0	10.0			
20-50 mi ²	3 Site(s)	3 Site(s)				95	0	5
Principal Streams								
50-500 mi ²	8 Site(s)							
	9.0 Miles	9.0 Miles	100	0.00	0.00			

High Magnitude Causes

Cause Unknown
Flow Alteration

High Magnitude Sources

Natural
Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (5-Historical)

Cause: Pathogens

Geometric Mean: 1433

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 5725

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 22

90th %ile: 7470

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:
Cause:

Nitrate Indicator:
Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 67.9
 05090201 060 Ohio River tributaries (downstream Ohio Brush Creek to upstream Eagle
 Creek)
Integrated Report Assessment Category: 5 **Priority Points: 2**
Next Scheduled Monitoring: 2011

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH Sampling Year(s):
 Impairment: Unknown (3)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						
<u>High Magnitude Causes</u>				<u>High Magnitude Sources</u>				

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3) Cause:
 No. of Ambient Sites: No. of Ambient Sampling Records: Geometric Mean:
 No. of NPDES MOR Sites: No. of NPDES MOR Records: 75th %ile:
 Other: 90th %ile:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 1.30 Stream Miles Impaired: 1.30 Pollutants (Waterbody): PCBs (Little Threemile
 Lake Acres Monitored: 0.0 Lake Acres Impaired: Creek)

WAU Comments

An error in the assessment of available data resulted in this assessment unit being listed as Category 5 for aquatic life in the 2002 Integrated Report. Based on a reevaluation of available data for the 2004 Integrated Report, it was determined that not enough data were present to do an aquatic life use assessment which resulted in the Category 3 listing. The 2006 Integrated Report assessment of fish tissue data from Little Threemile Creek documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 151.7

05090201 070

Eagle Creek

Integrated Report Assessment Category: 5

Priority Points: 3

Next Scheduled Monitoring: 2011

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 1997

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	2 Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)	100.0	0.0	0.0			
20-50 mi ²	1 Site(s)	1 Site(s)				88	12	0
Principal Streams								
50-500 mi ²	4 Site(s) 12.5 Miles	9.5 Miles	75.9	24.1	0.00			

High Magnitude Causes

High Magnitude Sources

Cause Unknown
Nutrients

Nonirrigated Crop Production
Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Cause:

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75th %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 93.6
 05090201 080 Ohio River tributaries (downstream Eagle Creek to upstream Whiteoak
 Creek)
Integrated Report Assessment Category: 5 **Priority Points: 3**
Next Scheduled Monitoring: 2011

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH Sampling Year(s): 1997
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	0 Site(s)	0.0	50.0	50.0			
20-50 mi ²	1 Site(s)	0 Site(s)				0	75	25
Principal Streams								
50-500 mi ²	1 Site(s) 2.0 Miles	0.0 Miles	0.00	100	0.00			

High Magnitude Causes

Cause Unknown
 Flow Alteration

High Magnitude Sources

Land Development/Suburbanization
 Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3) Cause: Geometric Mean:
 No. of Ambient Sites: No. of Ambient Sampling Records: 75th %ile:
 No. of NPDES MOR Sites: No. of NPDES MOR Records: 90th %ile:
 Other:

Public Drinking Water Supply Assessment

Location(s): Sycamore Run @RM 0.97 (Reservoir), and Straight Creek (Lake Waynoka) [Waynoka Regional]

Impairment: Unknown (3-Insufficient Data) Nitrate Indicator: Insufficient Data
 Cause: Pesticide Indicator: Insufficient Data, Watch List

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
 Stream Miles Monitored: 2.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 147.4

05090201 090

East Fork White Oak Creek; North Fork White Oak Creek

Integrated Report Assessment Category: 5

Priority Points: 5

Next Scheduled Monitoring: 2022

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 2006

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	8 Site(s)	3 Site(s)						
Primary Tributaries								
5-20 mi ²	11 Site(s)	7 Site(s)	75.3	15.3	9.4			
20-50 mi ²	3 Site(s)	3 Site(s)						
						88	7	5
Principal Streams								
50-500 mi ²	3 Site(s)							
	12.1 Miles	12.1 Miles	100	0.00	0.00			

High Magnitude Causes

High Magnitude Sources

Low Flow Alterations
Sedimentation/Siltation
Nutrient/Eutrophication Biological Indicators
Direct Habitat Alterations
Oxygen, Dissolved
Ammonia (Total)
Phosphorus (Total)

Unrestricted Cattle Access
Manure Runoff
Crop Production (Crop Land or Dry Land)
Urban Runoff/Storm Sewers
Channelization
Loss of Riparian Habitat
On-Site Treatment Systems (Septic Systems or Similar Decentralized Systems)

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 618

No. Ambient Sites: 10

No. Ambient Sampling Records: 50

75th %ile: 1400

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 15

90th %ile: 9320

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2006 as part of monitoring in the White Oak Creek watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included East Fork White Oak Creek, North Fork White Oak Creek, Little North Fork White Oak Creek, and Flat Run. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 87.9

05090201 100

White Oak Creek (North Fork/East Fork to mouth)

Integrated Report Assessment Category: 5

Priority Points: 8

Next Scheduled Monitoring: 2022

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 2006

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	4 Site(s)	1 Site(s)	31.3	0.0	68.7			
20-50 mi ²	2 Site(s)	1 Site(s)				48	18	34
Principal Streams								
50-500 mi ²	7 Site(s)							
	29.3 Miles	19.1 Miles	65.2	34.8	0.00			

High Magnitude Causes

Nutrient/Eutrophication Biological Indicators
Low Flow Alterations
Sedimentation/Siltation
Phosphorus (Total)
Oxygen, Dissolved

High Magnitude Sources

Upstream Source
Crop Production (Crop Land or Dry Land)
Sanitary Sewer Overflows (Collection System Failures)
Upstream Impoundments
Municipal Point Source Discharges

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1)

Cause:

Geometric Mean: 224

No. Ambient Sites: 6

No. Ambient Sampling Records: 27

75th %ile: 615

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 33

90th %ile: 1689

Other:

Public Drinking Water Supply Assessment

Location(s): Sterling Run @RM 6.47 [Mt. Orab]

Impairment: Yes (5)

Nitrate Indicator: Insufficient Data

Cause: Atrazine

Pesticide Indicator: Impaired

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 20.60 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the assessment unit in 2006 as part of monitoring in the White Oak Creek watershed to develop TMDLs for pollutants causing beneficial use impairments. Principal streams sampled included White Oak Creek and Sterling Run. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 129.6

05090202 010

Little Miami River (headwaters to upstream Massies Creek)

Integrated Report Assessment Category: 5

Priority Points: 2

Next Scheduled Monitoring: 2017

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 1998

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	8 Site(s)	5 Site(s)	74.0	9.4	16.6			
20-50 mi ²	3 Site(s)	3 Site(s)						
						37	32	31
Principal Streams								
50-500 mi ²	4 Site(s)							
	14.4 Miles	0.0 Miles	0.00	54.2	45.8			

High Magnitude Causes

High Magnitude Sources

Metals
 Unionized Ammonia
 Nutrients
 Organic Enrichment/DO
 Flow Alteration
 Direct Habitat Alterations
 Pathogens

Minor Municipal Point Source
 Nonirrigated Crop Production
 Range Grazing - Riparian Manure Lagoons
 Channelization - Agriculture
 Removal of Riparian Vegetation - Ag.
 Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1)

Cause:

Geometric Mean: 375

No. of Ambient Sites: 3

No. of Ambient Sampling Records: 28

75th %ile: 689

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 35

90th %ile: 1654

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 1.65 Stream Miles Impaired: 1.65 Pollutants (Waterbody): PCBs (Little Miami

Lake Acres Monitored: 0.0 Lake Acres Impaired: River)

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life) in the upper Little Miami watershed (to and including the Caesar Creek watershed) was approved by U.S. EPA on July 2, 2002. Monitoring in support of these TMDLs was conducted in 1998. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. The 2006 Integrated Report assessment of fish tissue data from the Little Miami River documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²): 165.5**
 05090202 020 Little Miami River (upstream Massies Creek to downstream Beaver
 Creek)
Integrated Report Assessment Category: 5 **Priority Points: 8**
Next Scheduled Monitoring: 2017

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH Sampling Year(s): 1998
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	11 Site(s)	6 Site(s)	47.6	21.4	31.0			
20-50 mi ²	7 Site(s)	3 Site(s)				59	19	22
Principal Streams								
50-500 mi ²	2 Site(s) 16.9 Miles	12.0 Miles	71.0	16.0	13.0			

High Magnitude Causes

Cause Unknown Oil and Grease
 Unknown Toxicity Natural Limits (Wetlands)
 Metals
 Unionized Ammonia
 Nutrients
 Siltation
 Direct Habitat Alterations

High Magnitude Sources

Major Industrial Point Source Spills
 Major Municipal Point Source
 Nonirrigated Crop Production
 Pasture Land
 Urban Runoff/Storm Sewers (NPS)
 Onsite Wastewater Systems (Septic Tanks)
 Channelization - Agriculture
 Channelization - Development

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 372
 No. of Ambient Sites: 9 No. of Ambient Sampling Records: 51 75th %ile: 553
 No. of NPDES MOR Sites: 4 No. of NPDES MOR Records: 326 90th %ile: 2007
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 11.61 Stream Miles Impaired: 8.71 Pollutants (Waterbody): PCBs (Little Miami
 Lake Acres Monitored: 0.0 Lake Acres Impaired: River)

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life) in the upper Little Miami watershed (to and including the Caesar Creek watershed) was approved by U.S. EPA on July 2, 2002. Monitoring in support of these TMDLs was conducted in 1998. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. The 2006 Integrated Report assessment of fish tissue data from the Little Miami River documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption in addition to the recreation beneficial use impairment.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 119.2**
 05090202 030 Little Miami River (downstream Beaver Creek to upstream Caesar Creek)

Integrated Report Assessment Category: 5 **Priority Points: 2**
Next Scheduled Monitoring: 2017

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH Sampling Year(s): 1998
 Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	3 Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	5 Site(s)	95.8	0.0	4.2			
20-50 mi ²	1 Site(s)	1 Site(s)						
						63	35	2
Principal Streams								
50-500 mi ²	10 Site(s)							
	21.8 Miles	6.4 Miles	29.4	70.6	0.00			

High Magnitude Causes

Unionized Ammonia
 Chlorine
 Nutrients
 Organic Enrichment/DO
 Flow Alteration
 Suspended Solids

High Magnitude Sources

Major Municipal Point Source
 Minor Municipal Point Source
 Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: No (1) Cause: Geometric Mean: 310
 No. of Ambient Sites: 3 No. of Ambient Sampling Records: 11 75th %ile: 486
 No. of NPDES MOR Sites: 3 No. of NPDES MOR Records: 139 90th %ile: 1098
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)
 Stream Miles Monitored: 21.82 Stream Miles Impaired: 21.82 Pollutants (Waterbody): PCBs (Little Miami River)
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life) in the upper Little Miami watershed (to and including the Caesar Creek watershed) was approved by U.S. EPA on July 2, 2002. Monitoring in support of these TMDLs was conducted in 1998. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. The 2006 Integrated Report assessment of fish tissue data from the Little Miami River documented body burdens of one or more pollutants at levels exceeding the threshold level upon which Ohio Water Quality Standards human health criteria are based which resulted in listing as impaired for fish consumption in addition to the recreation beneficial use impairment.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 94.8

05090202 040

Anderson Fork Caesar Creek

Integrated Report Assessment Category: 4A

Priority Points:

Next Scheduled Monitoring: 2017

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 1998

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	4 Site(s)	3 Site(s)	62.5	12.5	25.0			
20-50 mi ²	2 Site(s)	1 Site(s)						
						31	56	13
Principal Streams								
50-500 mi ²	2 Site(s)							
	11.0 Miles	0.0 Miles	0.00	100	0.00			

High Magnitude Causes

High Magnitude Sources

Cause Unknown

Siltation

Nonirrigated Crop Production

Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: No (1-Historical)

Cause:

Geometric Mean: 307

No. Ambient Sites: 1

No. Ambient Sampling Records: 3

75th %ile: 375

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90th %ile: 408

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)

Stream Miles Monitored: 2.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life) in the upper Little Miami watershed (to and including the Caesar Creek watershed) was approved by U.S. EPA on July 2, 2002. Monitoring in support of these TMDLs was conducted in 1998. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 147.9

05090202 050

Caesar Creek (excluding Anderson Fork)

Integrated Report Assessment Category: 5

Priority Points: 7

Next Scheduled Monitoring: 2017

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 1998

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	1 Site(s)	75.0	25.0	0.0			
20-50 mi ²	1 Site(s)	1 Site(s)						
						77	17	6
Principal Streams								
50-500 mi ²	3 Site(s)							
	22.6 Miles	18.0 Miles	79.7	9.20	11.1			

High Magnitude Causes

Cause Unknown
Nutrients
Siltation
Organic Enrichment/DO

High Magnitude Sources

Nonirrigated Crop Production
Feedlots (Confined Animal Feeding Oper.)
Land Development/Suburbanization
Onsite Wastewater Systems (Septic Tanks)
Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5-Historical)

Cause: Pathogens

Geometric Mean: 752

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 1663

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 42

90th %ile: 2180

Other:

Public Drinking Water Supply Assessment

Location(s): Caesar Creek Lake [Wilmington]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: No (1)

Stream Miles Monitored: 16.90 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 2830.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses (aquatic life) in the upper Little Miami watershed (to and including the Caesar Creek watershed) was approved by U.S. EPA on July 2, 2002. Monitoring in support of these TMDLs was conducted in 1998. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. The assessment unit remains in Category 5 due to a historical recreation use impairment.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 116.8

05090202 060

Little Miami River (downstream Caesar Creek to downstream Turtle Creek); excluding LMR mainstem

Integrated Report Assessment Category: 3

Priority Points:

Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH
Impairment: Unknown (3)

Sampling Year(s): 1998

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	Site(s)	Site(s)						
Primary Tributaries								
5-20 mi ²	Site(s)	Site(s)						
20-50 mi ²	Site(s)	Site(s)						
Principal Streams	Site(s)							
50-500 mi ²	Miles	Miles						
<u>High Magnitude Causes</u>					<u>High Magnitude Sources</u>			

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Unknown (3)

No. Ambient Sites:

No. of NPDES MOR Sites:

Other:

Cause:

No. Ambient Sampling Records:

No. of NPDES MOR Records:

Geometric Mean:

75th %ile:

90th %ile:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Cause:

Nitrate Indicator:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 147.0

05090202 070

Todd Fork (headwaters to upstream East Fork Todd Fork)

Integrated Report Assessment Category: 5

Priority Points: 3

Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH
Impairment: Yes (5)

Sampling Year(s): 1998

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	4 Site(s)	1 Site(s)	31.3	12.5	56.2			
20-50 mi ²	4 Site(s)	2 Site(s)				62	8	30
Principal Streams								
50-500 mi ²	4 Site(s) 21.5 Miles	19.8 Miles	92.1	4.20	3.70			

High Magnitude Causes

Unknown Toxicity
Unionized Ammonia
Organic Enrichment/DO
Flow Alteration
Direct Habitat Alterations

High Magnitude Sources

Major Municipal Point Source
Minor Municipal Point Source
Urban Runoff/Storm Sewers (NPS)
Channelization - Development
Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 1188

No. of Ambient Sites: 0 No. of Ambient Sampling Records: 0

75th %ile: 2250

No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 60

90th %ile: 5360

Other:

Public Drinking Water Supply Assessment

Location(s): Cowan Creek @RM 11.7 [Wilmington]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data

Cause:

Pesticide Indicator: Insufficient Data

Fish Tissue Assessment

Waters Sampled: Yes Impairment: No (1)

Stream Miles Monitored: 23.03 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 688.0 Lake Acres Impaired:

WAU Comments

Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 114.6

05090202 080

Todd Fork (upstream East Fork Todd Fork to mouth)

Integrated Report Assessment Category: 5

Priority Points: 4

Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 1998

Impairment: Yes (5)

Stream Size Category	Data Available	Raw Data		% Attainment			WAU Score		
		No.	Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries									
< 5 mi ²		Site(s)	Site(s)						
Primary Tributaries									
5-20 mi ²		Site(s)	Site(s)						
20-50 mi ²		Site(s)	Site(s)						
Principal Streams									
50-500 mi ²	3 Site(s)	14.1 Miles	11.5 Miles	81.5	18.5	0.00	82	18	0

High Magnitude Causes

High Magnitude Sources

Nutrients

Municipal Point Sources

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data) Cause:

Geometric Mean: 1809

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile: 2388

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 18

90th %ile: 29640

Other:

Public Drinking Water Supply Assessment

Location(s): Whitacre Run @RM 1.4 [Blanchester]

Impairment: Unknown (3-Insufficient Data)

Nitrate Indicator: Insufficient Data

Cause:

Pesticide Indicator: Insufficient Data, Watch List

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

This assessment unit was listed as Category 4B in the 2002 and 2004 Integrated Reports but, after conferral with U.S. EPA Region 5, it was reassessed as Category 5 in the 2006 report. Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 110.3**
 05090202 090 Little Miami River (downstream Turtle Creek to downstream O'Bannon
 Creek); excluding LMR mainstem

Integrated Report Assessment Category: 5 **Priority Points: 6**
Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 1993, 1998, 2002
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	8 Site(s)	3 Site(s)	34.4	42.7	22.9			
20-50 mi ²	2 Site(s)	1 Site(s)				67	21	12
Principal Streams								
50-500 mi ²	2 Site(s) 1.3 Miles	1.3 Miles	100	0.00	0.00			

High Magnitude Causes

Nutrients
 Organic Enrichment/DO
 Flow Alteration

High Magnitude Sources

Major Municipal Point Source
 Upstream Impoundment
 Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 285
 No. of Ambient Sites: 0 No. of Ambient Sampling Records: 0 75th %ile: 578
 No. of NPDES MOR Sites: 3 No. of NPDES MOR Records: 134 90th %ile: 3740
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
 Stream Miles Monitored: 1.30 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Ohio EPA conducted fish, macroinvertebrate, and water chemistry sampling on streams which had point source issues. Supplemental fish sampling was done in 2002 by ODNR Division of Wildlife on several other small streams within the assessment unit. Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 140.8
05090202 100 East Fork Little Miami River (headwaters to upstream Solomon Run)

Integrated Report Assessment Category: 5 **Priority Points: 6**
Next Scheduled Monitoring: 2012

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH Sampling Year(s): 1998
Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	3 Site(s)	0 Site(s)	16.7	58.3	25.0			
20-50 mi ²	3 Site(s)	1 Site(s)				33	54	13
Principal Streams								
50-500 mi ²	2 Site(s) 4.0 Miles	2.0 Miles	50.0	50.0	0.00			

High Magnitude Causes

Cause Unknown
Nutrients
Siltation

High Magnitude Sources

Nonirrigated Crop Production
Surface Mining
Source Unknown

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (5) Cause: Pathogens Geometric Mean: 722
No. of Ambient Sites: 3 No. of Ambient Sampling Records: 12 75th %ile: 1555
No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 18 90th %ile: 6067
Other:

Public Drinking Water Supply Assessment

Location(s): West Branch of the East Fork LMR @RM 4.6 [Blanchester]

Impairment: Unknown (3-Insufficient Data) Nitrate Indicator: Insufficient Data
Cause: Pesticide Indicator: Insufficient Data, Watch List

Fish Tissue Assessment

Waters Sampled: Yes Impairment: No (1)
Stream Miles Monitored: 18.80 Stream Miles Impaired: Pollutants (Waterbody):
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A watershed action plan for this assessment unit has been endorsed by the Ohio EPA and Ohio DNR.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 123.1**
 05090202 120 East Fork Little Miami River (upstream Cloverlick Creek to upstream Stonelick Creek)
Integrated Report Assessment Category: 5 **Priority Points: 2**
Next Scheduled Monitoring: 2012

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH Sampling Year(s): 1997, 1998
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	6 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	2 Site(s)	8.4	8.3	83.3			
20-50 mi ²	1 Site(s)	0 Site(s)						
Principal Streams						12	21	67
50-500 mi ²	10 Site(s)							
	11.9 Miles	1.8 Miles	15.1	33.6	51.3			

High Magnitude Causes

Nutrients
 Siltation
 Organic Enrichment/DO
 Flow Alteration
 Direct Habitat Alterations

High Magnitude Sources

Municipal Point Sources
 Land Development/Suburbanization
 Urban Runoff/Storm Sewers (NPS)
 Onsite Wastewater Systems (Septic Tanks)
 Channelization - Development
 Flow Reg/Mod. - Dev.

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: No (1) Cause: Geometric Mean: 231
 No. of Ambient Sites: 1 No. of Ambient Sampling Records: 4 75th %ile: 340
 No. of NPDES MOR Sites: 2 No. of NPDES MOR Records: 73 90th %ile: 880
 Other:

Public Drinking Water Supply Assessment

Location(s): Harsha Lake - Impounded E. Fork LMR [Clermont County]

Impairment: No (1) Nitrate Indicator: Full Support
 Cause: Pesticide Indicator: Full Support, Watch List

Fish Tissue Assessment

Waters Sampled: Yes Impairment: No (1)
 Stream Miles Monitored: 18.06 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A watershed action plan for this assessment unit has been endorsed by the Ohio EPA and Ohio DNR.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11 **WAU Description** **WAU Size (mi²):** 119.2
 05090202 130 East Fork Little Miami River (upstream Stonelick Creek to mouth)

Integrated Report Assessment Category: 5 **Priority Points: 6**
Next Scheduled Monitoring: 2012

Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH Sampling Year(s): 1997, 1998
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	5 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	6 Site(s)	1 Site(s)	9.2	72.5	18.3			
20-50 mi ²	1 Site(s)	0 Site(s)						
						15	76	9
Principal Streams								
50-500 mi ²	9 Site(s)							
	8.8 Miles	1.9 Miles	21.6	78.4	0.00			

High Magnitude Causes

Cause Unknown
 Nutrients
 Siltation
 Organic Enrichment/DO
 Flow Alteration
 Direct Habitat Alterations

High Magnitude Sources

Major Municipal Point Source Streambank Destabilization - Dev.
 Combined Sewer Overflows Source Unknown
 Sanitary Sewer Overflows
 Nonirrigated Crop Production
 Sewer Line Construction
 Urban Runoff/Storm Sewer (NPS)
 Dredging - Development
 Dam Construction - Agriculture

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Yes (5) Cause: Pathogens Geometric Mean: 444
 No. of Ambient Sites: 1 No. of Ambient Sampling Records: 4 75th %ile: 760
 No. of NPDES MOR Sites: 2 No. of NPDES MOR Records: 91 90th %ile: 3220
 Other:

Public Drinking Water Supply Assessment

Location(s): Stonelick Creek @RM 23.4 [Blanchester]

Impairment: Unknown (3-Insufficient Data) Nitrate Indicator: Insufficient Data
 Cause: Pesticide Indicator: Insufficient Data, Watch List

Fish Tissue Assessment

Waters Sampled: Yes Impairment: No (1)
 Stream Miles Monitored: 5.99 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A watershed action plan for this assessment unit has been endorsed by the Ohio EPA and Ohio DNR.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²): 112.4**
 05090202 140 Little Miami River (downstream O'Bannon Creek to mouth); excluding
 East Fork LMR and LMR mainstem

Integrated Report Assessment Category: 5 **Priority Points: 1**
Next Scheduled Monitoring: 2007

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW Sampling Year(s): 1994, 1998, 2002
 Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	3 Site(s)	0 Site(s)	0.0	50.0	50.0			
20-50 mi ²	2 Site(s)	0 Site(s)						
Principal Streams						0	50	50
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

Unknown Toxicity
 Siltation
 Organic Enrichment/DO
 Flow Alteration
 Direct Habitat Alterations

High Magnitude Sources

Minor Industrial Point Source
 Major Municipal Point Source
 Combined Sewer Overflows
 Sewer Line Construction
 Other Urban Runoff
 Dredging - Development
 Streambank Destabilization - Dev.

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: Unknown (3-Indeterminate Data) Cause: Geometric Mean: 246
 No. of Ambient Sites: 0 No. of Ambient Sampling Records: 0 75th %ile: 400
 No. of NPDES MOR Sites: 1 No. of NPDES MOR Records: 48 90th %ile: 9270
 Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Dry Run, East Branch Polk Run, and an unnamed tributary to Sycamore Creek were included on the 1998 303(d) list based on data collected in 1991. Since these data are no longer current (i.e., more than 10 years old), reassessment of current conditions is warranted. However, recognizing the continued pervasive impacts related to sewer line construction within stream channels, retaining the assessment unit in Category 5 is appropriate. Limited additional data collected in 1994 and 1998 from other Little Miami tributaries were used to supplement the assessment of this AU. Comprehensive chemical, physical, and biological monitoring was conducted in this assessment unit in 2007 to identify pollutants impairing beneficial uses and to support the development of TMDLs for those pollutants.

Ohio EPA 2008 Integrated Report Section M2 Watershed Assessment Unit (WAU) Results

HUC11

WAU Description

WAU Size (mi²): 164.6

05090203 010

Mill Creek

Integrated Report Assessment Category: 5

Priority Points: 6

Next Scheduled Monitoring: 2020

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C,LRW

Sampling Year(s): 1997, 2002, 2003

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	4 Site(s)	2 Site(s)						
Primary Tributaries								
5-20 mi ²	5 Site(s)	2 Site(s)	22.5	10.0	67.5			
20-50 mi ²	7 Site(s)	0 Site(s)				11	5	84
Principal Streams								
50-500 mi ²	6 Site(s)							
	16.3 Miles	0.0 Miles	0.00	0.00	100			

High Magnitude Causes

Cause Unknown
Unknown Toxicity
Unionized Ammonia
Nutrients
Organic Enrichment/DO
Flow Alteration
Direct Habitat Alterations
Oil and Grease

Taste and Odor

High Magnitude Sources

Industrial Point Sources
Major Municipal Point Source
Combined Sewer Overflow
Urban Runoff/Storm Sewers (NPS)
Channelization - Development
Streambank Destabilization - Dev.

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Cause: Pathogens

Geometric Mean: 900

No. of Ambient Sites: 15

No. of Ambient Sampling Records: 81

75th %ile: 2275

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 77

90th %ile: 6870

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5-Historical Data)

Stream Miles Monitored: 20.40 Stream Miles Impaired: 17.90 Pollutants (Waterbody): PCBs (Mill Creek)

Lake Acres Monitored: 183.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for some pollutants (phosphorus and nitrogen) impairing aquatic life uses in the Mill Creek basin was approved by U.S. EPA on April 26, 2005. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. Monitoring in support of the TMDLs was conducted in the watershed in 1997. Follow-up aquatic life monitoring in the upper Mill Creek watershed was conducted between 1999 and 2003. Because many other causes of beneficial use impairment have been identified (organic enrichment, heavy metals, pesticides, priority organic chemicals, contaminated sediments, siltation, low dissolved oxygen, habitat and flow alterations, and pathogens), additional TMDL work (or some other path to attainment of Water Quality Standards) will be needed to remove the Mill Creek assessment unit from its impairment listing for aquatic life, recreation, and fish consumption (the latter impairment historical due to age of data). While a full watershed assessment is not scheduled until 2020, Ohio EPA has committed to limited East Fork sampling at locations in the vicinity of the Butler Co. Upper Mill Creek WWTP in 2012 and 2015.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 48.6
 05090203 020 Ohio River tributaries (downstream Little Miami R. to upstream Great
 Miami R.); excluding Mill Creek

Integrated Report Assessment Category: 5 **Priority Points: 1**
Next Scheduled Monitoring: 2011

Aquatic Life Use Assessment

Subcategories of ALU: WWH,LRW Sampling Year(s): 1991, 1994
 Impairment: Yes (5-Historical)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	1 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	3 Site(s)	1 Site(s)	16.7	0.0	83.3			
20-50 mi ²	Site(s)	Site(s)				17	0	83
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

Unionized Ammonia
 Organic Enrichment/DO
 Flow Alteration
 Direct Habitat Alterations

High Magnitude Sources

Combined Sewer Overflows
 Dredging - Development
 Streambank Destabilization - Dev.
 Natural

Recreation Use Assessment

Subcategory of Use: Primary Contact
 Impairment: No (1) Cause:
 No. of Ambient Sites: 0 No. of Ambient Sampling Records: 0 Geometric Mean: 61
 No. of NPDES MOR Sites: 3 No. of NPDES MOR Records: 505 75th %ile: 147
 Other: 90th %ile: 484

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
 Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
 Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
 Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

Biological and water quality data collected in 1991 and 1994 (Muddy Creek, Wulff Run, and Rapid Run) were used in the 2002 Integrated Report which resulted in a Category 5 (impaired) listing for the aquatic life beneficial use. These data have since exceeded the ten-year threshold and are now considered historical. However, while reflecting the current status that no data are available to assess beneficial use status, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the U.S. EPA.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 115.9

05120101 010

Wabash River (headwaters to upstream Beaver Creek)

Integrated Report Assessment Category: 5

Priority Points: 4

Next Scheduled Monitoring: 2018

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 1999

Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	5 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	7 Site(s)	1 Site(s)	8.6	25.0	66.4			
20-50 mi ²	2 Site(s)	0 Site(s)						
						4	57	39
Principal Streams								
50-500 mi ²	6 Site(s) 20.5 Miles	0.0 Miles	0.00	89.0	11.0			

High Magnitude Causes

Direct Habitat Alterations

High Magnitude Sources

Minor Municipal Point Source
Nonirrigated Crop Production
Confined Animal Feeding Operations (NPS)
Channelization - Agriculture
Removal of Riparian Vegetation - Ag.
Streambank Destabilization - Ag.

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5-Historical)

Cause: Pathogens

Geometric Mean:

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75th %ile:

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90th %ile:

Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment:

Nitrate Indicator:

Cause:

Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Historical Data)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

A report developing TMDLs for some pollutants (nitrates/nitrites, phosphorus, total suspended solids) impairing aquatic life uses in the Wabash River basin was prepared by U.S. EPA on August 27, 2004. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/WabashRiverTMDL.html>. Monitoring in support of the TMDL was conducted in 1999. As this assessment unit continues to have other pollutants impairing aquatic life and recreation beneficial uses, it will remain Category 5 until TMDLs are developed for all pollutants impairing all beneficial uses.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11

WAU Description

WAU Size (mi²): 112.5

05120101 020

Beaver Creek (Grand Lake St. Marys and tributaries)

Integrated Report Assessment Category: 5

Priority Points: 2

Next Scheduled Monitoring: 2018

Aquatic Life Use Assessment

Subcategories of ALU: WWH

Sampling Year(s): 1999

Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	2 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	11 Site(s)	0 Site(s)	0.0	27.3	72.7			
20-50 mi ²	Site(s)	Site(s)				0	27	73
Principal Streams								
50-500 mi ²	Site(s)	Miles						

High Magnitude Causes

Direct Habitat Alterations
Nitrate/Nitrite (Nitrite + Nitrate as N)
Phosphorus (Total)

High Magnitude Sources

Nonirrigated Crop Production
Confined Animal Feeding Operations (NPS)
Channelization - Agriculture
Removal of Riparian Vegetation - Ag.
Streambank Destabilization - Ag.

Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (4A-TMDL)

Cause: Pathogens

Geometric Mean: 3585

No. Ambient Sites: 7

No. Ambient Sampling Records: 57

75th %ile: 10000

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90th %ile: 99999

Other:

Public Drinking Water Supply Assessment

Location(s): Grand Lake St. Marys [Celina]

Impairment: No (1)

Nitrate Indicator: Full Support

Cause:

Pesticide Indicator: Full Support

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody): PCBs (Grand Lake St. Marys)
Lake Acres Monitored: 12700.0 Lake Acres Impaired: 12700.0

WAU Comments

TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Beaver Creek/Grand Lake St. Marys basin were approved by U.S. EPA on September 28, 2007. Chemical, physical, and biological monitoring in support of the TMDL development was conducted in 1999. For additional information, see <http://www.epa.state.oh.us/dsw/tmdl/BeaverCreekWabashTMDL.html>. The 2006 Integrated Report assessment of fish tissue data documented body burdens of pollutants at levels reflecting a violation(s) of Ohio Water Quality Standards criteria which resulted in listing as impaired for fish consumption. As such, the assessment unit will remain Category 5 until TMDLs for all beneficial use impairments are completed and approved by the U.S. EPA.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 58.6
05120101 030 Beaver Creek (downstream Grand Lake St. Marys Dam to mouth)

Integrated Report Assessment Category: 4A **Priority Points:**
Next Scheduled Monitoring: 2018

Aquatic Life Use Assessment

Subcategories of ALU: WWH Sampling Year(s): 1999
Impairment: Yes (4A-TMDL)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	1 Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	1 Site(s)	41.7	25.0	33.3			
20-50 mi ²	Site(s)	Site(s)						
						21	12	67
Principal Streams								
50-500 mi ²	4 Site(s)							
	10.6 Miles	0.0 Miles	0.00	0.00	100			

High Magnitude Causes

Direct Habitat Alterations

High Magnitude Sources

Nonirrigated Crop Production
Confined Animal Feeding Operations (NPS)
Channelization - Agriculture
Removal of Riparian Vegetation - Ag.
Streambank Destabilization - Ag.

Recreation Use Assessment

Subcategory of Use: Primary Contact Cause: Pathogens Geometric Mean: 262
Impairment: Yes (4A-TMDL) No. Ambient Sampling Records: 39 75th %ile: 585
No. Ambient Sites: 4 No. of NPDES MOR Records: 64 90th %ile: 3340
No. of NPDES MOR Sites: 2
Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: Yes Impairment: Unknown (3-Indeterminate Data)
Stream Miles Monitored: 8.20 Stream Miles Impaired: Pollutants (Waterbody):
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

TMDLs for pollutants impairing beneficial uses (aquatic life and recreation) in the Beaver Creek/Grand Lake St. Marys basin were approved by U.S. EPA on September 28, 2007. Chemical, physical, and biological monitoring in support of the TMDL development was conducted in 1999. For additional information, see <http://www.epa.state.oh.us/dsw/tmdl/BeaverCreekWabashTMDL.html>.

**Ohio EPA 2008 Integrated Report Section M2
Watershed Assessment Unit (WAU) Results**

HUC11 **WAU Description** **WAU Size (mi²):** 30.3
05120103 010 Mississinewa River (headwaters to downstream Mud Creek [IN])

Integrated Report Assessment Category: 5 **Priority Points: 7**
Next Scheduled Monitoring: 2018

Aquatic Life Use Assessment

Subcategories of ALU: WWH,MWH-C Sampling Year(s): 1999
Impairment: Yes (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi ²	3 Site(s)	0 Site(s)						
Primary Tributaries								
5-20 mi ²	2 Site(s)	1 Site(s)	62.5	37.5	0.0			
20-50 mi ²	1 Site(s)	1 Site(s)				63	37	0
Principal Streams								
50-500 mi ²	Site(s)							
	Miles	Miles						

High Magnitude Causes

Direct Habitat Alterations

High Magnitude Sources

Nonirrigated Crop Production
Confined Animal Feeding Operations (NPS)
Channelization - Agriculture
Removal of Riparian Vegetation - Ag.
Streambank Destabilization - Ag.

Recreation Use Assessment

Subcategory of Use: Primary Contact
Impairment: Yes (5-Historical) Cause: Pathogens Geometric Mean:
No. Ambient Sites: 0 No. Ambient Sampling Records: 0 75th %ile:
No. of NPDES MOR Sites: 0 No. of NPDES MOR Records: 0 90th %ile:
Other:

Public Drinking Water Supply Assessment

Location(s): No Public Drinking Water Supply Intakes

Impairment: Nitrate Indicator:
Cause: Pesticide Indicator:

Fish Tissue Assessment

Waters Sampled: No Impairment: Unknown (3)
Stream Miles Monitored: 0.00 Stream Miles Impaired: Pollutants (Waterbody):
Lake Acres Monitored: 0.0 Lake Acres Impaired:

WAU Comments

This is a very small watershed within Ohio. Monitoring to characterize physical, chemical, and biological condition was incorporated in the Wabash River basin intensive survey conducted in 1999.