

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 147.0  
 04100001 020              Tenmile Creek; Ottawa River

**Integrated Report Assessment Category: 5**    **Priority Points: 3**  
**Next Scheduled Monitoring: 2016**

## Aquatic Life Use Assessment

Subcategories of ALU:    WWH,MWH-C,LRW    Sampling Year(s): 1993, 1996, 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 <sup>2</sup>	13 Sites	5 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	8 Sites	3 Sites	19.0	16.7	64.3			
20-50 mi <sup>2</sup>	3 Sites	0 Sites						
						9	24	67
Principal Streams								
50-500 mi <sup>2</sup>	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                      Contaminated Sediments  
 Combined Sewer Overflow  
 Nonirrigated Crop Production  
 Land Development/Suburbanization  
 Landfills  
 Flow Reg./Mod. - Development  
 Removal of Riparian Vegetation - Dev  
 Streambank Destabilization - Dev

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Unknown (3-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:                                      No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:                                      No. of NPDES MOR Records:    90<sup>th</sup> %ile:

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.

## 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: 0.0

## 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. Sampling was done in 2002 focusing on the Ottawa River and Sibley Creek in the immediate vicinity of the Dura Landfill.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 26.5  
04100002 030              Bear Creek (River Raisin basin)

**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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use:    Primary Contact  
Impairment:    Unknown (3-Indeterminate Data)    Geometric Mean:  
No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

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

**WAU Comments**

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

**Ohio EPA 2006 Integrated Report Appendix E.2  
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**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>):** 25.2

04100003 010

East Branch St. Joseph River

**Integrated Report Assessment Category: 3**

**Priority Points:**

**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

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

Stream Miles Monitored: 3.60 Stream Miles Impaired: 0.00 Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired: 0.0

**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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 123.5  
 04100003 030              St. Joseph River (East/West Branches to downstream Bear Creek)

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

## 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 <sup>2</sup>	1 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	1 Sites	1 Sites	75.0	25.0	0.0			
20-50 mi <sup>2</sup>	2 Sites	1 Sites						
						38	62	0
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	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)    Geometric Mean:    371  
 No. Ambient Sites:    0    No. Ambient Sampling Records:    0    75<sup>th</sup> %ile:    670  
 No. of NPDES MOR Sites:    3    No. of NPDES MOR Records:    69    90<sup>th</sup> %ile:    1860  
 Other:

## Fish Tissue Assessment

Waters Sampled:    Yes    Impairment:    Yes (5)  
 Stream Miles Monitored:    23.12    Stream Miles Impaired:    23.12    Pollutants (Waterbody):    PCBs (St. Joseph River)  
 Lake Acres Monitored:    94.0    Lake Acres Impaired:    0.0

## 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. 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. 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.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 16.8  
04100003 050              Fish 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): 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 <sup>2</sup>	1 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites	100.0	0.0	0.0			
20-50 mi <sup>2</sup>	Sites	Sites				72	14	14
Principal Streams								
50-500 mi <sup>2</sup>	3 Sites	3 Sites	43.0	28.5	28.5			

High Magnitude Causes

Siltation

High Magnitude Sources

Nonirrigated Crop Production

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

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

**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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 134.3  
 04100004 010              St. Mary's River (headwaters to downstream Sixmile Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 2**  
**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries			0.0	0.0	100			
5-20 mi <sup>2</sup>	1 Sites	0 Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams	6 Sites					0	0	100
50-500 mi <sup>2</sup>	13.0 Miles	0.0 Miles	0.00	0.00	100			

### 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)    Geometric Mean: 454  
 No. Ambient Sites: 0    No. Ambient Sampling Records: 0    75<sup>th</sup> %ile: 745  
 No. of NPDES MOR Sites: 3    No. of NPDES MOR Records: 275    90<sup>th</sup> %ile: 1380  
 Other:

## 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: 0.0

## 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.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 117.0  
 04100004 020              St. Mary's River (downstream Sixmile Creek to downstream Twelvemile Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 2**  
**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 <sup>2</sup>		Sites	Sites					
Primary Tributaries								
5-20 mi <sup>2</sup>		2 Sites	0 Sites	0.0	0.0	100		
20-50 mi <sup>2</sup>		1 Sites	0 Sites					
						0	23	77
Principal Streams								
50-500 mi <sup>2</sup>		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)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

## 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: 0.0

## 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.







## Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	Sites							
Primary Tributaries			0.0	58.4	41.6			
5-20 mi <sup>2</sup>	2 Sites	0 Sites						
20-50 mi <sup>2</sup>	3 Sites	0 Sites						
						50	29	21
Principal Streams								
50-500 mi <sup>2</sup>	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)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

### 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 79.9  
 04100006 030              Tiffin River (downstream Mill Creek to downstream Leatherwood Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 2**  
**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 <sup>2</sup>	1 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	4 Sites	1 Sites	12.5	0.0	87.5			
20-50 mi <sup>2</sup>	Sites	Sites						
						13	0	87
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	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)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

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

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 166.2  
 04100006 040              Tiffin River (downstream Leatherwood Creek to upstream Lick Creek);  
 excluding Tiffin River mainstem

**Integrated Report Assessment Category: 5**    **Priority Points: 7**  
**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 <sup>2</sup>	Sites							
Primary Tributaries		Sites	25.0	16.5	58.5			
5-20 mi <sup>2</sup>	2 Sites	1 Sites						
20-50 mi <sup>2</sup>	6 Sites	0 Sites				24	29	47
Principal Streams								
50-500 mi <sup>2</sup>	3 Sites							
	9.9 Miles	2.2 Miles	22.3	42.5	35.2			

#### High Magnitude Causes

Cause Unknown  
 Siltation  
 Organic Enrichment/DO  
 Direct Habitat Alterations

#### High Magnitude Sources

Major Industrial Point Source  
 Minor Municipal Point Source  
 Nonirrigated Crop Production  
 Flow Regulation/Modification - Ag.  
 Removal of Riparian Vegetation - Ag.  
 Source Unknown

### Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 1231  
 No. Ambient Sites: 1    No. Ambient Sampling Records: 3    75<sup>th</sup> %ile: 2575  
 No. of NPDES MOR Sites: 3    No. of NPDES MOR Records: 91    90<sup>th</sup> %ile: 12100  
 Other:

### Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 16.67    Stream Miles Impaired: 16.67    Pollutants (Waterbody): Mercury, PCBs (Tiffin River)  
 Lake Acres Monitored: 49.0    Lake Acres Impaired: 0.0

### 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 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

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 <sup>2</sup>	3 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	6 Sites	3 Sites	45.0	20.0	35.0			
20-50 mi <sup>2</sup>	5 Sites	2 Sites						
						22	52	26
Principal Streams								
50-500 mi <sup>2</sup>	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)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

Waters Sampled: No Impairment: Unknown (3)

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

Lake Acres Monitored: 0.0 Lake Acres Impaired: 0.0

**WAU Comments**



## Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 148.2  
 04100007 010              Auglaize River (headwaters to downstream Pusheta Creek)

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

### Aquatic Life Use Assessment

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

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	9 Sites	7 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	15 Sites	14 Sites	92.8	5.5	1.7			
20-50 mi <sup>2</sup>	5 Sites	5 Sites						
						94	5	1
Principal Streams								
50-500 mi <sup>2</sup>	5 Sites							
	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 (5-Historical)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

### 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:    0.0

### WAU Comments

A report developing TMDLs for pollutants impairing aquatic life 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 historical impaired recreation use and a current fish consumption problem, 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 99.9  
 04100007 020              Auglaize River (downstream Pusheta Creek to upstream Jennings Creek)

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

## Aquatic Life Use Assessment

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

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	6 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	5 Sites	1 Sites	13.3	60.0	26.7			
20-50 mi <sup>2</sup>	2 Sites	0 Sites						
						57	30	13
Principal Streams								
50-500 mi <sup>2</sup>	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 (5-Historical)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

## 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:    0.0

## WAU Comments

A report developing TMDLs for pollutants impairing aquatic life 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 historical impaired recreation use as well as a current fish consumption 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 134.3  
04100007 030              Ottawa River (headwaters to upstream Little Ottawa River)

**Integrated Report Assessment Category: 5**    **Priority Points: 2**  
**Next Scheduled Monitoring: 2010**

**Aquatic Life Use Assessment**

Subcategories of ALU:    WWH,MWH-C    Sampling Year(s):    1996, 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 <sup>2</sup>	1 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	1 Sites	0 Sites	0.0	0.0	100			
20-50 mi <sup>2</sup>	Sites	Sites						
						15	12	73
Principal Streams								
50-500 mi <sup>2</sup>	19 Sites							
	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)    Geometric Mean:  
No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Yes (5)  
Stream Miles Monitored: 10.80    Stream Miles Impaired: 10.80    Pollutants (Waterbody): PCBs (Ottawa River)  
Lake Acres Monitored: 689.0    Lake Acres Impaired: 0.0

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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)

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

High Magnitude Causes

Unknown Toxicity  
Nutrients  
Organic Enrichment/DO  
Direct Habitat Alterations  
Pathogens

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)    Geometric Mean: 455  
No. Ambient Sites: 0    No. Ambient Sampling Records: 0    75<sup>th</sup> %ile: 1150  
No. of NPDES MOR Sites: 4    No. of NPDES MOR Records: 156    90<sup>th</sup> %ile: 2600  
Other:

**Fish Tissue Assessment**

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

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 124.7**  
 04100007 050              Ottawa River (upstream Sugar Creek to mouth)

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

**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries			0.0	16.7	83.3			
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	6 Sites	0 Sites				35	23	42
Principal Streams	4 Sites							
50-500 mi <sup>2</sup>	11.1 Miles	7.8 Miles	70.3	29.7	0.00			

High Magnitude Causes

Unionized Ammonia  
 Organic Enrichment/DO  
 Direct Habitat Alterations  
 Pathogens

High Magnitude Sources

Combined Sewer Overflows  
 Channelization - Agriculture

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 355  
 No. Ambient Sites: 0    No. Ambient Sampling Records: 0    75<sup>th</sup> %ile: 1625  
 No. of NPDES MOR Sites: 3    No. of NPDES MOR Records: 49    90<sup>th</sup> %ile: 5330  
 Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 8.87    Stream Miles Impaired: 6.57    Pollutants (Waterbody): PCBs (Ottawa River)  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**

## Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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: 2020**

### Aquatic Life Use Assessment

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

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	3 Sites	3 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	9 Sites	7 Sites	61.1	0.0	38.9			
20-50 mi <sup>2</sup>	3 Sites	1 Sites						
						81	0	19
Principal Streams								
50-500 mi <sup>2</sup>	3 Sites							
	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 (5)    Geometric Mean: 853  
 No. Ambient Sites: 13    No. Ambient Sampling Records: 32    75<sup>th</sup> %ile: 1925  
 No. of NPDES MOR Sites: 0    No. of NPDES MOR Records: 0    90<sup>th</sup> %ile: 2480  
 Other:

### 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: 0.0

### WAU Comments

A report developing TMDLs for pollutants impairing aquatic life 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 an impaired recreation use as well as a fish consumption 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 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

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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

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

Stream Miles Monitored: 26.95 Stream Miles Impaired: 0.00 Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired: 0.0

**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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>):** 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	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

Waters Sampled: No      Impairment: Unknown (3)

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

Lake Acres Monitored: 0.0      Lake Acres Impaired: 0.0

**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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 175.0**  
 04100007 090              Little Auglaize River (upstream Dog Creek to mouth; excluding 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	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
 Impairment: Unknown (3-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 7.95    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 120.0    Lake Acres Impaired: 0.0

**WAU Comments**

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

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 130.4  
 04100007 100              Auglaize River (downstream L. Auglaize R. to upstream Flatrock Cr.);  
 excluding Auglaize R. mainstem

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

**Aquatic Life Use Assessment**

Subcategories of ALU:    WWH,MWH-C    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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
 Stream Miles Monitored:    2.00    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
 Lake Acres Monitored:    0.0    Lake Acres Impaired:    0.0

**WAU Comments**

A small amount of data were collected in this watershed, but there are not enough sampling locations to do a complete assessment. Most of the data collected are from one reference site on Blue Creek.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 97.6  
04100007 110              Powell Creek

**Integrated Report Assessment Category: 5**    **Priority Points: 7**  
**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 <sup>2</sup>	2 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	2 Sites	2 Sites	50.0	12.5	37.5			
20-50 mi <sup>2</sup>	4 Sites	1 Sites						
						37	6	57
Principal Streams								
50-500 mi <sup>2</sup>	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)    Geometric Mean: 2655  
No. Ambient Sites: 6    No. Ambient Sampling Records: 6    75<sup>th</sup> %ile: 8063  
No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 20    90<sup>th</sup> %ile: 18070  
Other:

**Fish Tissue Assessment**

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

**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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams						7	68	25
50-500 mi <sup>2</sup>	9 Sites							
	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)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:                      No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

### Fish Tissue Assessment

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
 Stream Miles Monitored:    9.80    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
 Lake Acres Monitored:    67.0    Lake Acres Impaired:    0.0

### 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 140.8  
04100008 010              Blanchard River (headwaters to downstream Potato Run)

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

**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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: Yes (5)    Geometric Mean: 959  
No. Ambient Sites: 26    No. Ambient Sampling Records: 156    75<sup>th</sup> %ile: 2700  
No. of NPDES MOR Sites: 2    No. of NPDES MOR Records: 41    90<sup>th</sup> %ile: 8320  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Yes (5)  
Stream Miles Monitored: 11.43    Stream Miles Impaired: 11.43    Pollutants (Waterbody): PCBs (Blanchard River)  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**

Intensive chemical, physical, and biological monitoring was conducted in the Blanchard River basin in 2005. 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 this report but will be the basis for the TMDL and 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. 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 133.4  
04100008 020              Blanchard River (downstream Potato Run to upstream Eagle Creek)

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

**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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: Yes (5)    Geometric Mean: 215  
No. Ambient Sites: 16    No. Ambient Sampling Records: 104    75<sup>th</sup> %ile: 542  
No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 56    90<sup>th</sup> %ile: 4110  
Other:

**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: 0.0

**WAU Comments**

Intensive chemical, physical, and biological monitoring was conducted in the Blanchard River basin in 2005. 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 this report but will be the basis for the TMDL and 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. 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 115.0  
 04100008 030              Blanchard River (upstream Eagle Creek to upstream Ottawa Creek)

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

## Aquatic Life Use Assessment

Subcategories of ALU:    WWH,LRW    Sampling Year(s):    1996, 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 <sup>2</sup>	1 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	2 Sites	1 Sites	62.5	25.0	0.0			
20-50 mi <sup>2</sup>	2 Sites	1 Sites						
						41	53	6
Principal Streams								
50-500 mi <sup>2</sup>	12.5 Miles	2.5 Miles	19.7	80.3	0.00			

### High Magnitude Causes

Cause Unknown  
 Nutrients  
 Flow Alteration  
 Direct Habitat Alterations

### High Magnitude Sources

Major Municipal Point Source  
 Channelization - Development  
 Dam Construction - Development  
 Source Unknown

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 758  
 No. Ambient Sites: 17    No. Ambient Sampling Records: 131    75<sup>th</sup> %ile: 1800  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 20    90<sup>th</sup> %ile: 4600  
 Other:

## 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: 0.0

## WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the Blanchard River basin in 2005. In addition to an aquatic life use impairment included in the 2002 and 2004 Integrated Reports, bacteria data collected in 2005 resulted in an impaired recreation use assessment. 2005 biological and chemical data for assessment of aquatic life uses were not available for this report but will be the basis for the TMDL and 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. 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 85.6  
04100008 050              Riley Creek

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

**Aquatic Life Use Assessment**

Subcategories of ALU:   WWH    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 <sup>2</sup>	Sites	Sites						
Primary Tributaries			0.0	0.0	100			
5-20 mi <sup>2</sup>	2 Sites	0 Sites						
20-50 mi <sup>2</sup>	2 Sites	0 Sites						
Principal Streams	6 Sites					15	16	69
50-500 mi <sup>2</sup>	15.6 Miles	4.6 Miles	29.5	32.8	37.8			

High Magnitude Causes

Unknown Toxicity  
Unionized Ammonia  
Flow Alteration

High Magnitude Sources

Major Municipal Point Source  
Channelization - Agriculture

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: Yes (5)    Geometric Mean: 686  
No. Ambient Sites: 16    No. Ambient Sampling Records: 110    75<sup>th</sup> %ile: 2200  
No. of NPDES MOR Sites: 2    No. of NPDES MOR Records: 39    90<sup>th</sup> %ile: 7600  
Other:

**Fish Tissue Assessment**

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

**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. Intensive chemical, physical, and biological monitoring was conducted in the Blanchard River basin in 2005. 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 this report but will be the basis for the TMDL and 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 147.3  
 04100008 060              Blanchard River (downstream Riley Creek to mouth); excluding Blanchard  
    R. mainstem

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

**Aquatic Life Use Assessment**

Subcategories of ALU:    WWH,LRW    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 <sup>2</sup>		Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>		Sites						
20-50 mi <sup>2</sup>		Sites						
Principal Streams								
50-500 mi <sup>2</sup>		Sites						
		Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 934  
 No. Ambient Sites: 11    No. Ambient Sampling Records: 64    75<sup>th</sup> %ile: 2413  
 No. of NPDES MOR Sites: 0    No. of NPDES MOR Records: 0    90<sup>th</sup> %ile: 8350  
 Other:

**Fish Tissue Assessment**

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

**WAU Comments**

Intensive chemical, physical, and biological monitoring was conducted in the Blanchard River basin in 2005. 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 this report but will be the basis for the TMDL and 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries			0.0	37.5	62.5			
5-20 mi <sup>2</sup>	4 Sites	0 Sites						
20-50 mi <sup>2</sup>	1 Sites	0 Sites				12	32	56
Principal Streams	3 Sites							
50-500 mi <sup>2</sup>	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)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

Waters Sampled: No      Impairment: Unknown (3)

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

Lake Acres Monitored: 0.0      Lake Acres Impaired: 0.0

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 103.0  
 04100009 030              Maumee R. (downstream S. Turkeyfoot Cr. to upstream Bad Cr.);  
 excluding Maumee R.

**Integrated Report Assessment Category: 5**    **Priority Points: 3**  
**Next Scheduled Monitoring: 2016**

**Aquatic Life Use Assessment**

Subcategories of ALU:    WWH,MWH-C,LRW    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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	3 Sites	1 Sites	66.7	16.7	16.6			
20-50 mi <sup>2</sup>	2 Sites	2 Sites				67	17	16
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

Siltation  
 Flow Alterations  
 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-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

**Fish Tissue Assessment**

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

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries			0.0	0.0	100			
5-20 mi <sup>2</sup>	1 Sites	0 Sites						
20-50 mi <sup>2</sup>	3 Sites	0 Sites						
Principal Streams	3 Sites					0	39	61
50-500 mi <sup>2</sup>	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)    Geometric Mean:  
No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
Stream Miles Monitored:    0.00    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
Lake Acres Monitored:    39.0    Lake Acres Impaired:    0.0

**WAU Comments**



**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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    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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

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

**WAU Comments**

No recent data have been collected in this watershed.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 95.7  
04100009 070              Swan Creek (headwaters to upstream Blue Creek)

**Integrated Report Assessment Category: 3**    **Priority Points:**  
**Next Scheduled Monitoring: 2006**

**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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use:    Primary Contact  
Impairment:    Unknown (3-Indeterminate Data)    Geometric Mean:  
No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

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

**WAU Comments**

The upper portion of Swan Creek was sampled in 1989 but data are considered historical. Another survey of the watershed is needed to reassess the status.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 108.3  
 04100009 080              Swan Creek (upstream Blue Creek to mouth)

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**Next Scheduled Monitoring: 2006**

## Aquatic Life Use Assessment

Subcategories of ALU:    WWH,MWH-C,LRW    Sampling Year(s):    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 <sup>2</sup>	1 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites	0.0	25.0	75.0			
20-50 mi <sup>2</sup>	2 Sites	0 Sites						
						29	33	38
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	8.8 Miles	5.1 Miles	58.0	42.0	0.00			

### High Magnitude Causes

Siltation  
 Direct Habitat Alterations  
 Total Toxics

### High Magnitude Sources

Urban Runoff/Storm Sewers (NPS)

## Recreation Use Assessment

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

## Fish Tissue Assessment

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
 Stream Miles Monitored:    1.70    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
 Lake Acres Monitored:    0.0    Lake Acres Impaired:    0.0

## WAU Comments

Biological and water quality data collected in 1993 were used in the 2004 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.



# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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)

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

### High Magnitude Causes

Unknown Toxicity  
 Nutrients  
 Siltation  
 Flow Alteration  
 Direct Habitat Alterations  
 Oil and Grease

### High Magnitude Sources

Major Industrial Point Source  
 Nonirrigated Crop Production  
 Landfills  
 Channelization - Agriculture  
 Dredging - Agriculture  
 Removal of Riparian Vegetation - Ag.  
 Streambank Destabilization - Ag.  
 Spills

## Recreation Use Assessment

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

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 2.40    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## WAU Comments

Streams within this watershed were sampled as part of the 1992 and 1993 Maumee River Area of Concern assessment project.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 143.1  
 04100010 020              Toussaint Creek

**Integrated Report Assessment Category: 5**    **Priority Points: 8**  
**Next Scheduled Monitoring: 2018**

## Aquatic Life Use Assessment

Subcategories of ALU:    WWH,MWH    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 <sup>2</sup>		Sites	Sites					
Primary Tributaries								
5-20 mi <sup>2</sup>		9 Sites	4 Sites	52.2	0.0	47.8		
20-50 mi <sup>2</sup>		5 Sites	3 Sites					
						49	6	45
Principal Streams								
50-500 mi <sup>2</sup>		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)    Geometric Mean: 396  
 No. Ambient Sites: 19    No. Ambient Sampling Records: 60    75<sup>th</sup> %ile: 1000  
 No. of NPDES MOR Sites: 2    No. of NPDES MOR Records: 21    90<sup>th</sup> %ile: 2200  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 21.90    Stream Miles Impaired: 21.90    Pollutants (Waterbody): PCBs (Toussaint Creek)  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway in the Toussaint Creek watershed. Monitoring in support of TMDL development was conducted in 2003. The 2006 Integrated Report assessment of available 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. 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 168.6**  
 04100010 030              Middle Branch Portage River (headwaters to downstream Rocky Ford  
    Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 2**  
**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 <sup>2</sup>	1 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites	25.0	25.0	50.0			
20-50 mi <sup>2</sup>	4 Sites	1 Sites						
						23	52	25
Principal Streams								
50-500 mi <sup>2</sup>	3 Sites							
	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:    No (1)    Geometric Mean:    178  
 No. Ambient Sites:    2    No. Ambient Sampling Records:    6    75<sup>th</sup> %ile:    750  
 No. of NPDES MOR Sites:    2    No. of NPDES MOR Records:    50    90<sup>th</sup> %ile:    1800  
 Other:

## Fish Tissue Assessment

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
 Stream Miles Monitored:    13.07    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
 Lake Acres Monitored:    55.0    Lake Acres Impaired:    0.0

## 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.



**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 77.2  
 04100010 050              Portage River (downstream South/Middle Branches to downstream North Branch)

**Integrated Report Assessment Category: 5**    **Priority Points: 6**  
**Next Scheduled Monitoring: 2008**

**Aquatic Life Use Assessment**

Subcategories of ALU:    WWH, LRW    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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 577  
 No. Ambient Sites: 0    No. Ambient Sampling Records: 0    75<sup>th</sup> %ile: 1125  
 No. of NPDES MOR Sites: 3    No. of NPDES MOR Records: 164    90<sup>th</sup> %ile: 2500  
 Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 4.40    Stream Miles Impaired: 4.40    Pollutants (Waterbody): PCBs (North Branch Portage River)  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**

No recent biological community and water quality data were available for this assessment unit to determine status of 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. Additionally, available bacteria data indicated an impairment of the Primary Contact Recreation use.

## Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 87.1  
 04100010 060              Portage River (downstream North Branch to downstream Sugar Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 4**  
**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries			50.0	0.0	50.0			
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	2 Sites	1 Sites				73	2	25
Principal Streams	11 Sites							
50-500 mi <sup>2</sup>	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)    Geometric Mean: 240  
 No. Ambient Sites: 2    No. Ambient Sampling Records: 22    75<sup>th</sup> %ile: 578  
 No. of NPDES MOR Sites: 3    No. of NPDES MOR Records: 76    90<sup>th</sup> %ile: 1030  
 Other:

### 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: 0.0

### 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.



**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use:    Primary Contact  
Impairment:    Unknown (3-Indeterminate Data)    Geometric Mean:  
No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
Stream Miles Monitored:    21.30    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
Lake Acres Monitored:    0.0    Lake Acres Impaired:    0.0

**WAU Comments**

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 137.3  
 04100011 020              Sandusky River (headwaters to upstream Broken Sword Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**Next Scheduled Monitoring: 2019**

## Aquatic Life Use Assessment

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

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	10 Sites	4 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	7 Sites	2 Sites	17.2	19.1	63.7			
20-50 mi <sup>2</sup>	3 Sites	0 Sites						
						32	33	35
Principal Streams								
50-500 mi <sup>2</sup>	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  
 Impairment:    Yes (4A)    Geometric Mean:    1569  
 No. Ambient Sites:    19    No. Ambient Sampling Records:    47    75<sup>th</sup> %ile:    7500  
 No. of NPDES MOR Sites:    2    No. of NPDES MOR Records:    240    90<sup>th</sup> %ile:    16900  
 Other:

## 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:    0.0

## 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](http://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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>):** 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)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	4 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	3 Sites	1 Sites	54.2	0.0	45.8			
20-50 mi <sup>2</sup>	3 Sites	2 Sites						
						71	6	23
Principal Streams								
50-500 mi <sup>2</sup>	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: No (1)

Geometric Mean: 502

No. Ambient Sites: 13

No. Ambient Sampling Records: 31

75<sup>th</sup> %ile: 935

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90<sup>th</sup> %ile: 1700

Other:

## Fish Tissue Assessment

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

Stream Miles Monitored: 10.50 Stream Miles Impaired: 0.00 Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired: 0.0

## 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 121.3**  
 04100011 040              Sandusky River (downstream Broken Sword Creek to upstream  
    Tymochtee Creek)

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

## Aquatic Life Use Assessment

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

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	6 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	8 Sites	2 Sites	14.6	7.3	78.1			
20-50 mi <sup>2</sup>	1 Sites	0 Sites						
						52	9	39
Principal Streams								
50-500 mi <sup>2</sup>	5 Sites							
	29.0 Miles	26.0 Miles	89.7	10.3	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: Yes (5)    Geometric Mean: 342  
 No. Ambient Sites: 12    No. Ambient Sampling Records: 37    75<sup>th</sup> %ile: 638  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 49    90<sup>th</sup> %ile: 5350  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 28.75    Stream Miles Impaired: 28.75    Pollutants (Waterbody): PCBs (Sandusky River)  
 Lake Acres Monitored: 297.6    Lake Acres Impaired: 0.0

## 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](http://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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	5 Sites	3 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	9 Sites	4 Sites	26.1	0.0	73.9			
20-50 mi <sup>2</sup>	2 Sites	0 Sites						
						13	20	67
Principal Streams								
50-500 mi <sup>2</sup>	3 Sites							
	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)    Geometric Mean: 755  
 No. Ambient Sites: 16    No. Ambient Sampling Records: 36    75<sup>th</sup> %ile: 2000  
 No. of NPDES MOR Sites: 0    No. of NPDES MOR Records: 0    90<sup>th</sup> %ile: 5150  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: No (1)  
 Stream Miles Monitored: 14.66    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).



# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	6 Sites	3 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	6 Sites	2 Sites	70.8	12.5	16.7			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						56	36	8
Principal Streams								
50-500 mi <sup>2</sup>	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)    Geometric Mean: 146  
 No. Ambient Sites: 13                                      No. Ambient Sampling Records: 28                      75<sup>th</sup> %ile: 455  
 No. of NPDES MOR Sites: 1                              No. of NPDES MOR Records: 19                      90<sup>th</sup> %ile: 980  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 9.10    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	8 Sites	3 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	10 Sites	4 Sites	69.4	10.6	20.0			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						62	17	21
Principal Streams								
50-500 mi <sup>2</sup>	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)    Geometric Mean:    268  
 No. Ambient Sites:    19                      No. Ambient Sampling Records:    47                      75<sup>th</sup> %ile:    720  
 No. of NPDES MOR Sites:    1                      No. of NPDES MOR Records:    20                      90<sup>th</sup> %ile:    1280  
 Other:

## Fish Tissue Assessment

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
 Stream Miles Monitored:    33.00    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
 Lake Acres Monitored:    0.0    Lake Acres Impaired:    0.0

## 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).



**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 157.8**

04100011 100

Wolf Creek

**Integrated Report Assessment Category: 5**

**Priority Points: 6**

**Next Scheduled Monitoring: 2009**

**Aquatic Life Use Assessment**

Subcategories of ALU: WWH,LRW

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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Geometric Mean: 1004

No. Ambient Sites: 18

No. Ambient Sampling Records: 55

75<sup>th</sup> %ile: 2700

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90<sup>th</sup> %ile: 5000

Other:

**Fish Tissue Assessment**

Waters Sampled: No Impairment: Unknown (3)

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

Lake Acres Monitored: 0.0 Lake Acres Impaired: 0.0

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 80.9  
04100011 110              Green Creek

**Integrated Report Assessment Category: 5**    **Priority Points: 5**  
**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: Yes (5)    Geometric Mean: 1346  
No. Ambient Sites: 2    No. Ambient Sampling Records: 4    75<sup>th</sup> %ile: 2175  
No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 18    90<sup>th</sup> %ile: 9340  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 2.00    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 110.0    Lake Acres Impaired: 0.0

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 108.4  
 04100011 120              Sandusky River (downstream Wolf Creek to mouth); excluding Green  
    Creek and Sandusky R. mainstem

**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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
 Stream Miles Monitored:    2.20    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
 Lake Acres Monitored:    0.0    Lake Acres Impaired:    0.0

**WAU Comments**

A small amount of data were collected in this watershed, but there are not enough sampling locations to do a complete assessment. Fish tissue sampling was done at one site on Muskellunge Creek in 1998.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 163.8  
04100011 130              Lake Erie tributaries (East of Green Creek to west of Mills Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 7**  
**Next Scheduled Monitoring: 2014**

**Aquatic Life Use Assessment**

Subcategories of ALU: CWH,WWH    Sampling Year(s): 1995  
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 <sup>2</sup>	1 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	8 Sites	1 Sites	3.1	3.1	93.8			
20-50 mi <sup>2</sup>	2 Sites	0 Sites						
						3	3	94
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	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)    Geometric Mean: 1402  
No. Ambient Sites: 4    No. Ambient Sampling Records: 10    75<sup>th</sup> %ile: 6775  
No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 97    90<sup>th</sup> %ile: 13710  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 7.00    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 34.0    Lake Acres Impaired: 0.0

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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: 2014**

**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 <sup>2</sup>	2 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	3 Sites	3 Sites	50.0	0.0	50.0			
20-50 mi <sup>2</sup>	Sites	Sites						
						50	0	50
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

Nutrients  
Siltation

High Magnitude Sources

Nonirrigated Crop Production

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: Yes (5)    Geometric Mean: 776  
No. Ambient Sites: 3    No. Ambient Sampling Records: 6    75<sup>th</sup> %ile: 2325  
No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 40    90<sup>th</sup> %ile: 10000  
Other:

**Fish Tissue Assessment**

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

**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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	3 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	10 Sites	3 Sites	20.0	22.5	57.5			
20-50 mi <sup>2</sup>	4 Sites	1 Sites						
						54	17	29
Principal Streams								
50-500 mi <sup>2</sup>	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  
 Impairment: Yes (4A)    Geometric Mean: 610  
 No. Ambient Sites: 9    No. Ambient Sampling Records: 30    75<sup>th</sup> %ile: 1175  
 No. of NPDES MOR Sites: 3    No. of NPDES MOR Records: 76    90<sup>th</sup> %ile: 3150  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 22.98    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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)

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

### High Magnitude Causes

Nutrients  
 Direct Habitat Alterations  
 Natural Limits

### High Magnitude Sources

Nonirrigated Crop Production  
 Channelization - Agriculture  
 Natural

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: No (1)    Geometric Mean: 202  
 No. Ambient Sites: 5    No. Ambient Sampling Records: 11    75<sup>th</sup> %ile: 330  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 20    90<sup>th</sup> %ile: 500  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 10.52    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 150.6  
 04100012 030              Huron River, East Branch Huron River, Lake Erie tributaries (East of  
                                  Sawmill Cr. to west of Huron R)

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

## Aquatic Life Use Assessment

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

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	Sites							
Primary Tributaries		Sites	62.5	19.6	17.9			
5-20 mi <sup>2</sup>	14 Sites	7 Sites						
20-50 mi <sup>2</sup>	4 Sites	3 Sites						
						49	10	41
Principal Streams								
50-500 mi <sup>2</sup>	11 Sites							
	16.1 Miles	5.9 Miles	36.6	0.00	63.4			

### High Magnitude Causes

Cause Unknown  
 Nutrients  
 Siltation  
 Direct Habitat Alterations  
 Flow Alteration  
 Pesticides  
 Unionized Ammonia

### High Magnitude Sources

Major Municipal Point Source  
 Nonirrigated Crop Production  
 Channelization- Development  
 Spills  
 Package Plants (Small Flows)

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (4A)    Geometric Mean: 323  
 No. Ambient Sites: 13    No. Ambient Sampling Records: 64    75<sup>th</sup> %ile: 1000  
 No. of NPDES MOR Sites: 2    No. of NPDES MOR Records: 78    90<sup>th</sup> %ile: 2780  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 33.40    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 97.0    Lake Acres Impaired: 0.0

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	5 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	14 Sites	2 Sites	8.6	58.9	32.5			
20-50 mi <sup>2</sup>	3 Sites	0 Sites						
						52	32	16
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	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)    Geometric Mean: 377  
 No. Ambient Sites: 19    No. Ambient Sampling Records: 61    75<sup>th</sup> %ile: 1200  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 15    90<sup>th</sup> %ile: 2200  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 14.60    Stream Miles Impaired: 14.60    Pollutants (Waterbody): Mercury (Vermilion River)  
 Lake Acres Monitored: 306.0    Lake Acres Impaired: 0.0

## 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 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 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    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 <sup>2</sup>	5 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	10 Sites	3 Sites	50.8	21.7	27.5			
20-50 mi <sup>2</sup>	3 Sites	2 Sites						
						67	11	22
Principal Streams								
50-500 mi <sup>2</sup>	29.7 Miles	24.5 Miles	82.5	0.00	17.5			

### 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)    Geometric Mean: 211  
 No. Ambient Sites: 25    No. Ambient Sampling Records: 106    75<sup>th</sup> %ile: 470  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 55    90<sup>th</sup> %ile: 2600  
 Other:

## 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: 0.0

## 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 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. 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 71.5  
04110001 010              Lake Erie tributaries (East of Vermilion River to West of Black River)

**Integrated Report Assessment Category: 5**    **Priority Points: 4**  
**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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: Yes (5-Historical)    Geometric Mean:  
No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

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

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 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 <sup>2</sup>	8 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	16 Sites	0 Sites	36.5	14.0	49.5			
20-50 mi <sup>2</sup>	6 Sites	4 Sites						
						18	51	31
Principal Streams								
50-500 mi <sup>2</sup>	11 Sites							
	26.6 Miles	0.0 Miles	0.00	88.7	11.3			

High Magnitude Causes

Cause Unknown  
 Nutrients  
 Siltation  
 Organic Enrichment/DO

High Magnitude Sources

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)    Geometric Mean: 349  
 No. Ambient Sites: 2    No. Ambient Sampling Records: 4    75<sup>th</sup> %ile: 1154  
 No. of NPDES MOR Sites: 3    No. of NPDES MOR Records: 56    90<sup>th</sup> %ile: 2370  
 Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 35.60    Stream Miles Impaired: 35.60    Pollutants (Waterbody): PCBs (West Branch Black River)  
 Lake Acres Monitored: 243.0    Lake Acres Impaired: 0.0

**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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	5 Sites	4 Sites	90.0	10.0	0.0			
20-50 mi <sup>2</sup>	3 Sites	3 Sites				68	32	0
Principal Streams								
50-500 mi <sup>2</sup>	3 Sites							
	20.7 Miles	9.5 Miles	45.9	54.1	0.00			

### High Magnitude Causes

Siltation

### High Magnitude Sources

Nonirrigated Crop Production

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 516  
 No. Ambient Sites: 6    No. Ambient Sampling Records: 6    75<sup>th</sup> %ile: 749  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 20    90<sup>th</sup> %ile: 6300  
 Other:

## 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: 0.0

## 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; this led to the assignment of Category 4B (impaired but not requiring a TMDL) in the 2002 Integrated Report. Assessment of the Primary Contact Recreation use for the 2004 Integrated Report resulted in a Category 5 determination. 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 125.8  
 04110001 040              East Branch Black River (downstream Coon Creek to mouth)

**Integrated Report Assessment Category: 5**    **Priority Points: 8**  
**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 <sup>2</sup>	3 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	2 Sites	0 Sites	0.0	16.7	83.3			
20-50 mi <sup>2</sup>	Sites	Sites						
						50	8	42
Principal Streams								
50-500 mi <sup>2</sup>	7 Sites							
	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: Yes (5)    Geometric Mean: 208  
 No. Ambient Sites: 7    No. Ambient Sampling Records: 9    75<sup>th</sup> %ile: 777  
 No. of NPDES MOR Sites: 2    No. of NPDES MOR Records: 91    90<sup>th</sup> %ile: 2020  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 34.91    Stream Miles Impaired: 34.91    Pollutants (Waterbody): Mercury, PCBs (East Branch Black River)  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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. 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 190.2  
 04110001 060              West Branch Rocky River

**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 <sup>2</sup>	3 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	5 Sites	1 Sites	100.0	0.0	0.0			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						72	14	14
Principal Streams								
50-500 mi <sup>2</sup>	30.3 Miles	21.8 Miles	71.9	28.1	0.00			

### High Magnitude Causes

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

### High Magnitude Sources

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

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: No (1)    Geometric Mean: 338  
 No. Ambient Sites: 7    No. Ambient Sampling Records: 21    75<sup>th</sup> %ile: 830  
 No. of NPDES MOR Sites: 2    No. of NPDES MOR Records: 115    90<sup>th</sup> %ile: 1950  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 29.40    Stream Miles Impaired: 29.40    Pollutants (Waterbody): Mercury, PCBs (West Branch Rocky River)  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 139.8  
 04110001 070              Rocky River; East Branch Rocky R.; Lake Erie tributaries (West of Porter Cr. to West of Cuyahoga R.)

**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 <sup>2</sup>	6 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	12 Sites	2 Sites	37.5	39.6	22.9			
20-50 mi <sup>2</sup>	2 Sites	1 Sites						
						48	37	15
Principal Streams								
50-500 mi <sup>2</sup>	30.0 Miles	17.3 Miles	57.7	35.7	6.60			

### High Magnitude Causes

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

### High Magnitude Sources

Municipal Point Source  
 Highway/Road/Bridge/Sewer Line  
 Land Development/Suburbanization  
 Urban Runoff/Storm Sewers (NPS)  
 Channelization - Development  
 Flow Reg./Mod. - Development  
 Streambank Destabilization - Development  
 Marinas

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: No (1)    Geometric Mean: 51  
 No. Ambient Sites: 15                                      No. Ambient Sampling Records: 53                      75<sup>th</sup> %ile: 420  
 No. of NPDES MOR Sites: 6                              No. of NPDES MOR Records: 685                      90<sup>th</sup> %ile: 1400  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 33.70    Stream Miles Impaired: 12.00    Pollutants (Waterbody): PCBs (Rocky River)  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 148.9  
 04110002 010              Cuyahoga River (headwaters to downstream Black Brook)

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**Next Scheduled Monitoring: 2020**

## Aquatic Life Use Assessment

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

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	10 Sites	5 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	8 Sites	3 Sites	38.5	22.3	39.2			
20-50 mi <sup>2</sup>	3 Sites	1 Sites						
						19	61	20
Principal Streams								
50-500 mi <sup>2</sup>	3 Sites							
	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)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

Waters Sampled:    Yes    Impairment:    Yes (5)  
 Stream Miles Monitored:    7.16    Stream Miles Impaired:    7.16    Pollutants (Waterbody):    PCBs (Cuyahoga River)  
 Lake Acres Monitored:    517.0    Lake Acres Impaired:    0.0

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 139.9**  
 04110002 020              Cuyahoga River (downstream Black Brook to downstream Breakneck  
    Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**Next Scheduled Monitoring: 2020**

## Aquatic Life Use Assessment

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

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	9 Sites	5 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	1 Sites	1 Sites	77.8	16.7	5.5			
20-50 mi <sup>2</sup>	Sites	Sites						
						80	16	4
Principal Streams								
50-500 mi <sup>2</sup>	11 Sites							
	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)    Geometric Mean:    194  
 No. Ambient Sites:    1    No. Ambient Sampling Records:    18    75<sup>th</sup> %ile:    430  
 No. of NPDES MOR Sites:    5    No. of NPDES MOR Records:    257    90<sup>th</sup> %ile:    818  
 Other:

## Fish Tissue Assessment

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

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 112.2**  
 04110002 030              Cuyahoga River (downstream Breakneck Creek to downstream Little Cuyahoga River)

**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)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	5 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	7 Sites	2 Sites	12.1	0.0	87.9			
20-50 mi <sup>2</sup>	6 Sites	0 Sites						
						9	28	63
Principal Streams								
50-500 mi <sup>2</sup>	17 Sites							
	22.0 Miles	1.3 Miles	5.90	55.5	38.6			

### High Magnitude Causes

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

### High Magnitude Sources

Major Municipal Point Source  
 Combined Sewer Overflows  
 Sewer Line Construction  
 Urban Runoff/Storm Sewers (NPS)  
 Onsite Wastewater Systems (Septic Tanks)  
 Channelization - Development  
 Dam Construction - Development  
 Natural

## Recreation Use Assessment

Subcategory of Use:    Primary Contact  
 Impairment:    No (1)    Geometric Mean:    142  
 No. Ambient Sites:    0    No. Ambient Sampling Records:    0    75<sup>th</sup> %ile:    240  
 No. of NPDES MOR Sites:    3    No. of NPDES MOR Records:    195    90<sup>th</sup> %ile:    436  
 Other:

## Fish Tissue Assessment

Waters Sampled:    Yes    Impairment:    Yes (5)  
 Stream Miles Monitored:    15.55    Stream Miles Impaired:    14.55    Pollutants (Waterbody):    PCBs (Cuyahoga River, Summit Lake)  
 Lake Acres Monitored:    1200.0    Lake Acres Impaired:    100.0

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 153.9**  
 04110002 040              Cuyahoga River (downstream Little Cuyahoga River to downstream Brandywine Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 2**  
**Next Scheduled Monitoring: 2020**

### Aquatic Life Use Assessment

Subcategories of ALU:    WWH    Sampling Year(s):    1996, 2000  
 Impairment:    Yes (4A)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	16 Sites	10 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	6 Sites	3 Sites	78.1	7.3	14.6			
20-50 mi <sup>2</sup>	4 Sites	4 Sites						
						39	38	23
Principal Streams								
50-500 mi <sup>2</sup>	3 Sites							
	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

#### High Magnitude Sources

Major Municipal Point Source  
 Combined Sewer Overflows  
 Land Development/Suburbanization  
 Urban Runoff/Storm Sewers (NPS)

### Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (4A)    Geometric Mean: 1114  
 No. Ambient Sites: 2    No. Ambient Sampling Records: 2    75<sup>th</sup> %ile: 2700  
 No. of NPDES MOR Sites: 4    No. of NPDES MOR Records: 359    90<sup>th</sup> %ile: 20000  
 Other:

### Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 18.11    Stream Miles Impaired: 18.11    Pollutants (Waterbody): PCBs (Cuyahoga River)  
 Lake Acres Monitored: 24.0    Lake Acres Impaired: 0.0

### 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.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 138.1  
 04110002 050              Cuyahoga River (downstream Brandywine Cr. to downstream Tinkers Cr.); excluding Cuyahoga R. mainstem

**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):    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 <sup>2</sup>	12 Sites	5 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	8 Sites	3 Sites	39.6	18.8	41.6			
20-50 mi <sup>2</sup>	Sites	Sites						
						20	27	53
Principal Streams								
50-500 mi <sup>2</sup>	5 Sites							
	22.5 Miles	0.0 Miles	0.00	35.6	64.4			

### High Magnitude Causes

Cause Unknown  
 Nutrients  
 Organic Enrichment/DO  
 Flow Alteration  
 Direct Habitat Alterations  
 Oil and Grease  
 Natural Limits (Wetlands)

### High Magnitude Sources

Major Municipal Point Sources  
 Land Development/Suburbanization  
 Urban Runoff/Storm Sewers (NPS)  
 Onsite Wastewater Systems (Septic Tanks)  
 Natural  
 Source Unknown

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: No (1)    Geometric Mean: 345  
 No. Ambient Sites: 0    No. Ambient Sampling Records: 0    75<sup>th</sup> %ile: 790  
 No. of NPDES MOR Sites: 7    No. of NPDES MOR Records: 491    90<sup>th</sup> %ile: 2000  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 11.20    Stream Miles Impaired: 11.20    Pollutants (Waterbody): PCBs (Tinkers Creek)  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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. Recent bacteria data collected from the assessment unit indicated no impairment of the recreation use. The TMDL report is available at <http://www.epa.state.oh.us/dsw/tmdl/index.html>. The 2006 Integrated Report assessment of available fish tissue data from Tinkers 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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):    1996, 2000  
 Impairment:    Yes (4A)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	8 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	5 Sites	0 Sites	3.1	8.1	88.8			
20-50 mi <sup>2</sup>	2 Sites	0 Sites						
						3	8	89
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	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)    Geometric Mean: 544  
 No. Ambient Sites: 5    No. Ambient Sampling Records: 50    75<sup>th</sup> %ile: 1600  
 No. of NPDES MOR Sites: 0    No. of NPDES MOR Records: 0    90<sup>th</sup> %ile: 4130  
 Other:

## Fish Tissue Assessment

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

## 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>.



# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 119.5  
 04110003 020              Chagrin River (headwaters to downstream Aurora Branch)

**Integrated Report Assessment Category: 5**    **Priority Points: 3**  
**Next Scheduled Monitoring: 2019**

## Aquatic Life Use Assessment

Subcategories of ALU: CWH,EWH,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 <sup>2</sup>	10 Sites	6 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	11 Sites	6 Sites	62.2	25.6	12.2			
20-50 mi <sup>2</sup>	6 Sites	4 Sites						
						81	13	6
Principal Streams								
50-500 mi <sup>2</sup>	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)    Geometric Mean: 263  
 No. Ambient Sites: 39                                      No. Ambient Sampling Records: 107                                      75<sup>th</sup> %ile: 480  
 No. of NPDES MOR Sites: 6                                      No. of NPDES MOR Records: 271                                      90<sup>th</sup> %ile: 1070  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes      Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 1.01      Stream Miles Impaired: 0.00      Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0      Lake Acres Impaired: 0.0

## WAU Comments

Chemical, physical, and biological sampling was conducted in the assessment unit in 2003 and 2004 as part of monitoring in the Chagrin River watershed to develop TMDLs for pollutants causing beneficial use impairments. 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.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 145.1  
 04110003 030              Chagrin River (downstream Aurora Branch to mouth)

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

## Aquatic Life Use Assessment

Subcategories of ALU: CWH,EWH,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 <sup>2</sup>	10 Sites	5 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	5 Sites	2 Sites	22.5	42.5	35.0			
20-50 mi <sup>2</sup>	2 Sites	0 Sites						
						61	21	18
Principal Streams								
50-500 mi <sup>2</sup>	9 Sites							
	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  
 Impairment: Yes (5)    Geometric Mean: 378  
 No. Ambient Sites: 24    No. Ambient Sampling Records: 111    75<sup>th</sup> %ile: 755  
 No. of NPDES MOR Sites: 4    No. of NPDES MOR Records: 53    90<sup>th</sup> %ile: 4080  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 27.79    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## WAU Comments

Chemical, physical, and biological sampling was conducted in the assessment unit in 2003 and 2004 as part of monitoring in the Chagrin River watershed to develop TMDLs for pollutants causing beneficial use impairments. 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.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	12 Sites	1 Sites	54.2	12.5	33.3			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						54	13	33
Principal Streams								
50-500 mi <sup>2</sup>	Miles	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)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:                      No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

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

## WAU Comments



**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 156.7**  
 04110004 010              Grand River (headwaters to downstream Swine Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**Next Scheduled Monitoring: 2007**

**Aquatic Life Use Assessment**

Subcategories of ALU:    EWH,WWH    Sampling Year(s):    1995, 1999  
 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries			100.0	0.0	0.0			
5-20 mi <sup>2</sup>	6 Sites	6 Sites						
20-50 mi <sup>2</sup>	Sites	Sites				100	0	0
Principal Streams	1 Sites							
50-500 mi <sup>2</sup>	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)  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      Geometric Mean:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      75<sup>th</sup> %ile:  
 Other:    90<sup>th</sup> %ile:

**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: 0.0

**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, the assessment unit has been assigned Category 5 (impaired) due to the Sportfish Consumption Advisories in effect for the Grand River.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 131.9  
 04110004 020              Grand River (downstream Swine Creek to upstream Rock Creek)

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

## Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH    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 <sup>2</sup>	1 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	3 Sites	3 Sites	100.0	0.0	0.0			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						69	31	0
Principal Streams								
50-500 mi <sup>2</sup>	2 Sites							
	25.0 Miles	9.7 Miles	38.8	61.2	0.00			

### High Magnitude Causes

Natural Limits (Wetlands)

### High Magnitude Sources

Natural

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Unknown (3-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## 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: 0.0

## 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, the assessment unit has been assigned Category 5 (impaired) due to the Sportfish Consumption Advisories in effect for the Grand River.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>):** 70.7

04110004 030

Rock Creek

**Integrated Report Assessment Category: 5**

**Priority Points: 1**

**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

Waters Sampled: Yes Impairment: Yes (5)

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

Lake Acres Monitored: 54.0 Lake Acres Impaired: 54.0

**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).

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 57.7  
04110004 040              Grand River (downstream Rock Creek to upstream Mill Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**Next Scheduled Monitoring: 2007**

**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: Unknown (3-Indeterminate Data)    Geometric Mean:  
No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Yes (5)  
Stream Miles Monitored: 9.31    Stream Miles Impaired: 9.31    Pollutants (Waterbody): Mercury, PCBs (Grand River)  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**

A small amount of biosurvey data has 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.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 103.3  
04110004 050              Mill Creek

**Integrated Report Assessment Category: 5**    **Priority Points: 7**  
**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
<b>Secondary Tributaries</b>								
< 5 mi <sup>2</sup>	3 Sites	1 Sites						
<b>Primary Tributaries</b>								
5-20 mi <sup>2</sup>	2 Sites	1 Sites	45.8	12.5	41.7			
20-50 mi <sup>2</sup>	2 Sites	1 Sites						
						73	6	21
<b>Principal Streams</b>								
50-500 mi <sup>2</sup>	4 Sites							
	16.8 Miles	16.8 Miles	100	0.00	0.00			

High Magnitude Causes

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

High Magnitude Sources

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

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: Yes (5)    Geometric Mean: 280  
No. Ambient Sites: 11    No. Ambient Sampling Records: 51    75<sup>th</sup> %ile: 975  
No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 20    90<sup>th</sup> %ile: 3400  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: No (1)  
Stream Miles Monitored: 8.10    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**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 and 2004. Major streams sampled included Mill Creek and Cemetery Creek.





**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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    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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

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

**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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

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

**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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	7 Sites	3 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	13 Sites	8 Sites	36.1	23.8	40.1			
20-50 mi <sup>2</sup>	5 Sites	1 Sites						
						46	34	20
Principal Streams								
50-500 mi <sup>2</sup>	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)    Geometric Mean: 111  
 No. Ambient Sites: 0    No. Ambient Sampling Records: 0    75<sup>th</sup> %ile: 502  
 No. of NPDES MOR Sites: 4    No. of NPDES MOR Records: 185    90<sup>th</sup> %ile: 1653

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.

## 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: 0.0

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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)

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

### High Magnitude Causes

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

### High Magnitude Sources

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)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 4.10    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 140.1  
 05030101 090              Little Beaver Creek (downstream Middle and West Forks to mouth)

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

## Aquatic Life Use Assessment

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

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	9 Sites	5 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	14 Sites	9 Sites	79.9	5.4	14.7			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						90	3	7
Principal Streams								
50-500 mi <sup>2</sup>	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)    Geometric Mean: 201  
 No. Ambient Sites: 4    No. Ambient Sampling Records: 24    75<sup>th</sup> %ile: 476  
 No. of NPDES MOR Sites: 3    No. of NPDES MOR Records: 56    90<sup>th</sup> %ile: 702  
 Other:

## 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: 0.0

## 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 45.2  
 05030101 100              Ohio River tributaries (downstream Little Beaver Creek to upstream  
    Yellow Creek)

**Integrated Report Assessment Category: 2**    **Priority Points:**  
**Next Scheduled Monitoring: 2020**

**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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
 Impairment: No (1)    Geometric Mean: 199  
 No. Ambient Sites: 11    No. Ambient Sampling Records: 26    75<sup>th</sup> %ile: 517  
 No. of NPDES MOR Sites: 0    No. of NPDES MOR Records: 0    90<sup>th</sup> %ile: 1750  
 Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: No (1)  
 Stream Miles Monitored: 0.00    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 170.0    Lake Acres Impaired: 0.0

**WAU Comments**

Intensive chemical, physical, and biological data were collected from the Yellow Creek watershed (including this assessment unit) in 2005. Available bacteria data indicated no impairment of the recreation use and available fish tissue data indicated no contamination problems. 2005 biological and chemical data for assessment of aquatic life uses were not available for this report but will be the basis for the TMDL and 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 118.7  
 05030101 180              Yellow Creek (headwaters to upstream Town Fork)

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

## Aquatic Life Use Assessment

Subcategories of ALU: CWH,EWH,WWH,LRW    Sampling Year(s): 1996, 1997, 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 <sup>2</sup>	2 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	5 Sites	4 Sites	70.0	0.0	30.0			
20-50 mi <sup>2</sup>	2 Sites	1 Sites						
						85	0	15
Principal Streams								
50-500 mi <sup>2</sup>	1 Sites							
	2.0 Miles	2.0 Miles	100	0.00	0.00			

### High Magnitude Causes

Nutrients

### High Magnitude Sources

Onsite Wastewater Systems (Septic Tanks)

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 1032  
 No. Ambient Sites: 30    No. Ambient Sampling Records: 106    75<sup>th</sup> %ile: 2400  
 No. of NPDES MOR Sites: 0    No. of NPDES MOR Records: 0    90<sup>th</sup> %ile: 7230  
 Other:

## 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: 0.0

## WAU Comments

Intensive chemical, physical, and biological data were collected from the Yellow Creek watershed in 2005. Available bacteria data indicated an impairment of the recreation use. 2005 biological and chemical data for assessment of aquatic life uses were not available for this report but will be the basis for the TMDL and 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. 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.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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,WWH,LRW    Sampling Year(s): 1997, 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 <sup>2</sup>	3 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	4 Sites	2 Sites	62.5	0.0	37.5			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						79	2	19
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

### High Magnitude Causes

Nutrients  
 Noxious Aquatic Plants  
 Flow Alterations  
 pH  
 Metals

### High Magnitude Sources

Land Disposal  
 Industrial Land Treatment  
 Natural  
 Surface Mining  
 Subsurface Mining

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 250  
 No. Ambient Sites: 37    No. Ambient Sampling Records: 128    75<sup>th</sup> %ile: 685  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 4    90<sup>th</sup> %ile: 2090  
 Other:

## 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: 0.0

## WAU Comments

Aquatic life use monitoring in the Yellow Creek basin was primarily conducted in 2002. Sites were located in the North Fork Yellow Creek watershed and in Yellow Creek bracketing the North Fork. A report on the 2002 survey is available at [www.epa.state.oh.us/dsw/document\\_index/psdindx.html](http://www.epa.state.oh.us/dsw/document_index/psdindx.html) (EAS/20030305). Intensive chemical, physical, and biological data were collected from the Yellow Creek watershed in 2005. Available bacteria data indicated an impairment of the recreation use. 2005 biological and chemical data for assessment of aquatic life uses were not available for this report but will be the basis for the TMDL and 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. 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.



**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 127.5  
05030101 340              Cross Creek

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**Next Scheduled Monitoring: 2010**

**Aquatic Life Use Assessment**

Subcategories of ALU: CWH,WWH,LRW    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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: No (1)    Geometric Mean: 462  
No. Ambient Sites: 0    No. Ambient Sampling Records: 0    75<sup>th</sup> %ile: 850  
No. of NPDES MOR Sites: 3    No. of NPDES MOR Records: 65    90<sup>th</sup> %ile: 1150  
Other:

**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: 0.0

**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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 40.7  
05030102 010              Tributaries to Pymatuning Reservoir (within Ohio)

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use:    Primary Contact  
Impairment:    Unknown (3-Indeterminate Data)    Geometric Mean:  
No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

Waters Sampled:    Yes    Impairment:    Yes (5)  
Stream Miles Monitored:    0.00    Stream Miles Impaired:    0.00    Pollutants (Waterbody):    PCBs (Pymatuning Reservoir)  
Lake Acres Monitored:    3580.0    Lake Acres Impaired:    3580.0

**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.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>		Sites	Sites						
Primary Tributaries									
5-20 mi <sup>2</sup>		2 Sites	1 Sites	25.0	25.0	50.0			
20-50 mi <sup>2</sup>		1 Sites	0 Sites						
							12	13	75
Principal Streams									
50-500 mi <sup>2</sup>		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)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
 Stream Miles Monitored:    28.20    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
 Lake Acres Monitored:    0.0    Lake Acres Impaired:    0.0

## 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.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 94.6  
 05030102 050              Yankee Creek; Little Yankee 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	2 Sites	1 Sites	30.6	11.1	58.3			
20-50 mi <sup>2</sup>	9 Sites	1 Sites						
						31	11	58
Principal Streams								
50-500 mi <sup>2</sup>	Sites	Miles						

### High Magnitude Causes

Nutrients  
 Flow Alteration  
 Direct Habitat Alterations

### High Magnitude Sources

Major Municipal Point Source  
 Urban Runoff/Storm Sewers (NPS)  
 Hydromodification - Development  
 Habitat Modifications o/than Hydromod.  
 Source Unknown

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Unknown (3-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

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

## 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.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 129.2  
 05030103 010              Mahoning River (headwaters to downstream Beech Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 7**  
**Next Scheduled Monitoring: 2006**

## 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries			100.0	0.0	0.0			
5-20 mi <sup>2</sup>	1 Sites	1 Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams	4 Sites					61	0	39
50-500 mi <sup>2</sup>	11.6 Miles	2.6 Miles	22.4	0.00	77.6			

### High Magnitude Causes

Cause Unknown  
 Metals

### High Magnitude Sources

Minor Industrial Point Source  
 Minor Municipal Point Source  
 Spills  
 Contaminated Sediments  
 Source Unknown

## Recreation Use Assessment

Subcategory of Use:    Primary Contact  
 Impairment:    Yes (5)    Geometric Mean:    434  
 No. Ambient Sites:    0    No. Ambient Sampling Records:    0    75<sup>th</sup> %ile:    1475  
 No. of NPDES MOR Sites:    4    No. of NPDES MOR Records:    135    90<sup>th</sup> %ile:    4200  
 Other:

## Fish Tissue Assessment

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

## WAU Comments

A report developing the TMDL for bacterial contaminants impairing the recreation beneficial use in the Mahoning River basin including the Mahoning River mainstem 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>.  
 Biological and water quality data collected in 1994 from this Mahoning River basin assessment unit 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 118.7**  
 05030103 020              Mahoning River (downstream Beech Creek to downstream Berlin Dam)

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**Next Scheduled Monitoring: 2006**

**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use:    Primary Contact  
 Impairment:    Unknown (3-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

**Fish Tissue Assessment**

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

**WAU Comments**

Most of this assessment unit consists of Berlin Lake. No tributaries to the lake nor the lake itself have available biological data and the aquatic life beneficial use is unassessed. A report developing the TMDL for bacterial contaminants impairing the recreation beneficial use in the Mahoning River basin including the Mahoning River mainstem 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>. However, 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. 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 167.1  
 05030103 030              Mahoning River (downstream Berlin Dam to downstream West Branch)

**Integrated Report Assessment Category: 5**    **Priority Points: 5**  
**Next Scheduled Monitoring: 2006**

## Aquatic Life Use Assessment

Subcategories of ALU:    WWH,LRW    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 <sup>2</sup>	7 Sites	3 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	2 Sites	1 Sites	46.5	32.1	21.4			
20-50 mi <sup>2</sup>	Sites	Sites						
						47	32	21
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

### High Magnitude Causes

Organic Enrichment/DO  
 Flow Alteration  
 Direct Habitat Alterations  
 Suspended Solids  
 Turbidity  
 Siltation

### High Magnitude Sources

Channelization-Development  
 Dam Construction-Development  
 Flow Regulation/Modification-Development  
 Streambank Modification/Destabilization-Development

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Unknown (3-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## 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: 0.0

## WAU Comments

A report developing the TMDL for bacterial contaminants impairing the recreation beneficial use in the Mahoning River basin including the Mahoning River mainstem 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>. Biological and water quality data collected in 1994 from this Mahoning River basin assessment unit 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. 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. The current assessment is based on new biological data collected in 2003 which focused on a site-specific assessment, conducted in collaboration with the Army Corps of Engineers, of the Ravenna Arsenal complex in the W. Br. Mahoning River subwatershed.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 126.9  
 05030103 040              Mahoning River (downstream West Branch to upstream Duck Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 5**  
**Next Scheduled Monitoring: 2006**

## Aquatic Life Use Assessment

Subcategories of ALU: CWH,WWH    Sampling Year(s): 1999, 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 <sup>2</sup>	7 Sites	7 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	12 Sites	11 Sites	98.0	2.0	0.0			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						98	2	0
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

### High Magnitude Causes

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

### High Magnitude Sources

Channelization - Development  
 Dam Construction - Development  
 Flow Regulation/Modification - Development  
 Natural

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: No (1)    Geometric Mean: 250  
 No. Ambient Sites: 0    No. Ambient Sampling Records: 0    75<sup>th</sup> %ile: 462  
 No. of NPDES MOR Sites: 5    No. of NPDES MOR Records: 130    90<sup>th</sup> %ile: 1157  
 Other:

## 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: 0.0

## WAU Comments

A report developing the TMDL for bacterial contaminants impairing the recreation beneficial use in the Mahoning River basin including the Mahoning River mainstem 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>. Biological and water quality data collected in 1994 from this Mahoning River basin assessment unit 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. 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. The current assessment is based on new biological data collected in 2003 which 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 138.1  
05030103 060              Mosquito Creek

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**Next Scheduled Monitoring: 2013**

## Aquatic Life Use Assessment

Subcategories of ALU:    WWH    Sampling Year(s):    1990, 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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams						0	14	86
50-500 mi <sup>2</sup>	7 Sites							
	12.5 Miles	0.0 Miles	0.00	13.6	86.4			

### High Magnitude Causes

Suspended Solids

### High Magnitude Sources

Minor Industrial Point Source  
Major Municipal Point Source  
Upstream Impoundment

## Recreation Use Assessment

Subcategory of Use:    Primary Contact  
Impairment:    Unknown (3-Indeterminate Data)    Geometric Mean:  
No. Ambient Sites:                      No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:                      No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
Other:

## Fish Tissue Assessment

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
Stream Miles Monitored:    12.30    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
Lake Acres Monitored:    7850.0    Lake Acres Impaired:    0.0

## WAU Comments

Biological and water quality data collected in 1990 and 1994 from Mosquito Creek 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 180.5  
 05030106 010              Ohio River tributaries (downstream Cross Creek to downstream Short  
    Creek)

**Integrated Report Assessment Category: 2**    **Priority Points:**  
**Next Scheduled Monitoring: 2010**

**Aquatic Life Use Assessment**

Subcategories of ALU:    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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
 Impairment: No (1)    Geometric Mean: 224  
 No. Ambient Sites: 0    No. Ambient Sampling Records: 0    75<sup>th</sup> %ile: 779  
 No. of NPDES MOR Sites: 4    No. of NPDES MOR Records: 82    90<sup>th</sup> %ile: 1980  
 Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 15.50    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**

Bacteria data available for the 2004 Integrated Report indicated an impairment of the Primary Contact Recreation use and triggered a Category 5 listing. However, more recent bacteria data indicated that the recreation use is not impaired. More intensive monitoring of this watershed is needed to confirm the status and address other beneficial uses.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 130.2  
 05030106 040              Ohio River tributaries (downstream Short Creek to downstream Wheeling Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 7**  
**Next Scheduled Monitoring: 2010**

## Aquatic Life Use Assessment

Subcategories of ALU:    WWH,WWH-L,MWH-C    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 <sup>2</sup>	3 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites	33.4	33.3	33.3			
20-50 mi <sup>2</sup>	Sites	Sites						
						17	66	17
Principal Streams								
50-500 mi <sup>2</sup>	2 Sites							
	1.1 Miles	0.0 Miles	0.00	100	0.00			

### High Magnitude Causes

Siltation  
Iron

### High Magnitude Sources

Subsurface Mining

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 68  
 No. Ambient Sites: 9    No. Ambient Sampling Records: 26    75<sup>th</sup> %ile: 592  
 No. of NPDES MOR Sites: 6    No. of NPDES MOR Records: 434    90<sup>th</sup> %ile: 3000  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 14.70    Stream Miles Impaired: 14.70    Pollutants (Waterbody): PCBs (Wheeling Creek)  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## WAU Comments

Limited monitoring in the Wheeling Creek watershed was conducted in 2002. Sites were located in the Fall Run subwatershed and in Wheeling Creek bracketing Fall Run. Sampling was completed in collaboration with the Ohio Department of Natural Resources/Division of Mineral Resources Management and the Army Corps of Engineers/Pittsburgh District as part of an Acid Mine Drainage Abatement Program (AMDAP) project to mitigate acid seeps in the Fall Run subwatershed. A larger AMDAP project covering the entire Wheeling Creek basin (nearly all of which has been affected by subsurface mining) is being considered. The 2006 Integrated Report assessment of available fish tissue data from Wheeling 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. A report on the 2002 survey is available at [www.epa.state.oh.us/dsw/document\\_index/psdindx.html](http://www.epa.state.oh.us/dsw/document_index/psdindx.html) (EAS/2002-12-9).



**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 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 <sup>2</sup>	2 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	2 Sites	1 Sites	58.3	29.2	12.5			
20-50 mi <sup>2</sup>	3 Sites	2 Sites						
						77	17	6
Principal Streams								
50-500 mi <sup>2</sup>	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)    Geometric Mean: 104  
 No. Ambient Sites: 0    No. Ambient Sampling Records: 0    75<sup>th</sup> %ile: 394  
 No. of NPDES MOR Sites: 3    No. of NPDES MOR Records: 292    90<sup>th</sup> %ile: 622  
 Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 22.10    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 98.0    Lake Acres Impaired: 0.0

**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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 123.8**  
 05030201 010              Ohio River tributaries (downstream Fish Creek [WV] to downstream Sunfish Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 6**  
**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 <sup>2</sup>	2 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	1 Sites	0 Sites	62.5	0.0	37.5			
20-50 mi <sup>2</sup>	2 Sites	2 Sites						
						81	0	19
Principal Streams								
50-500 mi <sup>2</sup>	3 Sites							
	11.4 Miles	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)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 15.10    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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    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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
 Impairment: No (1-Historical)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

**Fish Tissue Assessment**

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

**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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	7 Sites	7 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	10 Sites	10 Sites	100.0	0.0	0.0			
20-50 mi <sup>2</sup>	3 Sites	3 Sites						
						94	4	2
Principal Streams								
50-500 mi <sup>2</sup>	23.8 Miles	20.8 Miles	87.4	8.40	4.20			

High Magnitude Causes

Siltation

High Magnitude Sources

Nonirrigated Crop Production  
Pasture Land

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

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

**WAU Comments**

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

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	12 Sites	12 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	14 Sites	14 Sites	100.0	0.0	0.0			
20-50 mi <sup>2</sup>	2 Sites	2 Sites						
						77	21	2
Principal Streams								
50-500 mi <sup>2</sup>	34.5 Miles	18.7 Miles	54.3	42.8	2.90			

### High Magnitude Causes

Nutrients  
Siltation  
Flow Alteration

### High Magnitude Sources

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

## Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

## Fish Tissue Assessment

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

Stream Miles Monitored: 37.50 Stream Miles Impaired: 0.00 Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired: 0.0

## WAU Comments

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

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 136.2  
05030201 110              East Fork Duck Creek

**Integrated Report Assessment Category: 5**    **Priority Points: 4**  
**Next Scheduled Monitoring: 2020**

## Aquatic Life Use Assessment

Subcategories of ALU:    WWH,LWH    Sampling Year(s):    1998, 2000  
Impairment:    Yes (4A)

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

### High Magnitude Causes

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

### High Magnitude Sources

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)    Geometric Mean:  
No. Ambient Sites: 0                      No. Ambient Sampling Records: 0                      75<sup>th</sup> %ile:  
No. of NPDES MOR Sites: 0                      No. of NPDES MOR Records: 0                      90<sup>th</sup> %ile:  
Other:

## Fish Tissue Assessment

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
Stream Miles Monitored:    2.00    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
Lake Acres Monitored:    0.0    Lake Acres Impaired:    0.0

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	36 Sites	28 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	3 Sites	2 Sites	86.1	9.8	4.1			
20-50 mi <sup>2</sup>	2 Sites	2 Sites						
						90	6	4
Principal Streams								
50-500 mi <sup>2</sup>	17 Sites							
	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)    Geometric Mean: 270  
 No. Ambient Sites: 0    No. Ambient Sampling Records: 0    75<sup>th</sup> %ile: 633  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 18    90<sup>th</sup> %ile: 765  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 13.20    Stream Miles Impaired: 11.20    Pollutants (Waterbody): PCBs, DDT (Duck Creek)  
 Lake Acres Monitored: 209.0    Lake Acres Impaired: 0.0

## 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 0.00    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 160.0    Lake Acres Impaired: 0.0

**WAU Comments**



**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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    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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 2.00    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 92.1  
05030202 040              Shade River (Middle Branch and West Branch to mouth)

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**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: 0.0

**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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 81.7  
 05030202 050              Ohio River tributaries (downstream Shade River to upstream Leading 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
 Stream Miles Monitored:    0.00    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
 Lake Acres Monitored:    104.0    Lake Acres Impaired:    0.0

**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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 150.1  
05030202 090              Leading Creek

**Integrated Report Assessment Category: 5**    **Priority Points: 5**  
**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 <sup>2</sup>	16 Sites	7 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	12 Sites	8 Sites	27.6	22.4	50.0			
20-50 mi <sup>2</sup>	4 Sites	0 Sites						
						38	16	46
Principal Streams								
50-500 mi <sup>2</sup>	7 Sites							
	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)    Geometric Mean: 395  
No. Ambient Sites: 18    No. Ambient Sampling Records: 29    75<sup>th</sup> %ile: 860  
No. of NPDES MOR Sites: 0    No. of NPDES MOR Records: 0    90<sup>th</sup> %ile: 2160  
Other:

## Fish Tissue Assessment

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

## WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the Leading Creek basin in 2004 and 2005 by the Midwest Biodiversity Institute (aquatic life use assessment) and the Leading Creek Improvement Committee (recreation use assessment). 2004 and 2005 bacteriological, biological, and chemical data will be the basis for the development of TMDLs for pollutants impairing beneficial uses. TMDLs are expected to be completed by a U.S. EPA contractor in 2007. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	5 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	2 Sites	0 Sites	0.0	16.7	83.3			
20-50 mi <sup>2</sup>	3 Sites	0 Sites						
						0	17	83
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	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)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

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

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	11 Sites	6 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	6 Sites	5 Sites	84.5	13.3	2.3			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						82	17	1
Principal Streams								
50-500 mi <sup>2</sup>	7 Sites							
	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)    Geometric Mean: 1085  
 No. Ambient Sites: 26    No. Ambient Sampling Records: 200    75<sup>th</sup> %ile: 2200  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 54    90<sup>th</sup> %ile: 6531  
 Other:

### 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: 0.0

### 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	7 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	4 Sites	2 Sites	12.5	30.0	57.4			
20-50 mi <sup>2</sup>	3 Sites	0 Sites						
						6	15	79
Principal Streams								
50-500 mi <sup>2</sup>	1 Sites							
	5.2 Miles	0.0 Miles	0.00	0.00	100			

### High Magnitude Causes

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

### High Magnitude Sources

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)    Geometric Mean: 57  
 No. Ambient Sites: 18                                      No. Ambient Sampling Records: 94                      75<sup>th</sup> %ile: 380  
 No. of NPDES MOR Sites: 2                              No. of NPDES MOR Records: 161                      90<sup>th</sup> %ile: 1700  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 0.00    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 104.0    Lake Acres Impaired: 0.0

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 136.0  
 05030204 030              Rush Creek (upstream Little Rush Creek to mouth)

**Integrated Report Assessment Category: 5**    **Priority Points: 6**  
**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 <sup>2</sup>	5 Sites	3 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	7 Sites	4 Sites	79.3	7.1	13.6			
20-50 mi <sup>2</sup>	2 Sites	2 Sites						
						90	3	7
Principal Streams								
50-500 mi <sup>2</sup>	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)    Geometric Mean: 392  
 No. Ambient Sites: 20    No. Ambient Sampling Records: 136    75<sup>th</sup> %ile: 1070  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 16    90<sup>th</sup> %ile: 2570  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 2.10    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 343.0    Lake Acres Impaired: 0.0

## 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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    Sampling Year(s): 2004  
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 <sup>2</sup>	3 Sites	3 Sites						
Primary Tributaries			100.0	0.0	0.0			
5-20 mi <sup>2</sup>	6 Sites	6 Sites						
20-50 mi <sup>2</sup>	2 Sites	2 Sites				100	0	0
Principal Streams	1 Sites							
50-500 mi <sup>2</sup>	8.9 Miles	8.9 Miles	100	0.00	0.00			

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: No (1)    Geometric Mean: 385  
No. Ambient Sites: 13                                      No. Ambient Sampling Records: 77                                      75<sup>th</sup> %ile: 610  
No. of NPDES MOR Sites: 1                                      No. of NPDES MOR Records: 19                                      90<sup>th</sup> %ile: 1500  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 4.80    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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    Sampling Year(s):   2001  
Impairment:   Yes (4A)

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

### High Magnitude Causes

Metals  
pH  
Siltation  
Flow Alteration

### High Magnitude Sources

Surface Mining  
Acid Mine Drainage

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
Impairment: No (1)    Geometric Mean: 91  
No. Ambient Sites: 56                                      No. Ambient Sampling Records: 66                      75<sup>th</sup> %ile: 300  
No. of NPDES MOR Sites: 0                              No. of NPDES MOR Records: 0                              90<sup>th</sup> %ile: 577  
Other:

## Fish Tissue Assessment

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

## 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 138.7**  
 05030204 070              Sunday Creek

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

**Aquatic Life Use Assessment**

Subcategories of ALU: EWH,WWH,LRW,LWH    Sampling Year(s): 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 <sup>2</sup>	49 Sites	25 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	13 Sites	0 Sites	12.7	33.8	53.5			
20-50 mi <sup>2</sup>	6 Sites	0 Sites						
						6	37	57
Principal Streams								
50-500 mi <sup>2</sup>	14.6 Miles	0.0 Miles	0.00	39.0	61.0			

High Magnitude Causes

Metals  
 pH  
 Siltation  
 Flow Alteration

High Magnitude Sources

Surface Mining  
 Acid Mine Drainage

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 301  
 No. Ambient Sites: 61    No. Ambient Sampling Records: 120    75<sup>th</sup> %ile: 1147  
 No. of NPDES MOR Sites: 0    No. of NPDES MOR Records: 0    90<sup>th</sup> %ile: 3010  
 Other:

**Fish Tissue Assessment**

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

**WAU Comments**

TMDLs for pollutants impairing beneficial uses is in progress for the Sunday Creek watershed. Monitoring in support of the TMDL/AMDAP projects was conducted by the Ohio EPA in 2001. A watershed action plan for this assessment unit has been endorsed by the Ohio EPA and Ohio DNR.



# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 144.6  
05030204 090              Federal Creek

**Integrated Report Assessment Category: 5**    **Priority Points: 8**  
**Next Scheduled Monitoring: 2019**

## Aquatic Life Use Assessment

Subcategories of ALU: EWH,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 <sup>2</sup>	16 Sites	11 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	15 Sites	14 Sites	84.3	11.0	4.7			
20-50 mi <sup>2</sup>	8 Sites	7 Sites						
						56	42	2
Principal Streams								
50-500 mi <sup>2</sup>	5 Sites							
	11.3 Miles	3.0 Miles	26.5	73.5	0.00			

### High Magnitude Causes

Siltation  
Organic Enrichment/DO  
Nutrients  
Flow Alteration  
Natural Limits  
Aluminum

### High Magnitude Sources

Streambank Modification/Destabilization - Ag.  
Removal of Riparian Vegetation - Agriculture  
Natural  
Onsite Wastewater Systems (Septic Tanks)  
Acid Mine Drainage

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
Impairment: Yes (5)    Geometric Mean: 390  
No. Ambient Sites: 38    No. Ambient Sampling Records: 131    75<sup>th</sup> %ile: 755  
No. of NPDES MOR Sites: 0    No. of NPDES MOR Records: 0    90<sup>th</sup> %ile: 3100  
Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 7.80    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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 Federal Creek, Sharps Fork, and McDougall Branch.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	6 Sites	6 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	6 Sites	3 Sites	75.0	16.7	8.3			
20-50 mi <sup>2</sup>	Sites	Sites						
						75	17	8
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	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)    Geometric Mean: 154  
 No. Ambient Sites: 16                                      No. Ambient Sampling Records: 89                      75<sup>th</sup> %ile: 280  
 No. of NPDES MOR Sites: 0                              No. of NPDES MOR Records: 0                      90<sup>th</sup> %ile: 732  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 0.00    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 161.0    Lake Acres Impaired: 0.0

## 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 134.5  
05040001 040              Sandy Creek (headwaters to downstream Still Fork)

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**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:    0.0

**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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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  
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 <sup>2</sup>	4 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	6 Sites	3 Sites	36.1	27.8	36.1			
20-50 mi <sup>2</sup>	9 Sites	2 Sites						
						18	45	37
Principal Streams								
50-500 mi <sup>2</sup>	14.7 Miles	0.0 Miles	0.00	61.9	38.1			

High Magnitude Causes

Flow Alteration              Pathogens  
Metals                          Cause Unknown  
Zinc  
Unionized Ammonia  
Nutrients  
pH  
Organic Enrichment/DO  
Thermal Modifications

High Magnitude Sources

Major Industrial Point Source  
Minor Industrial Point Source  
Major Municipal Point Source  
Nonirrigated Crop Production  
Source Unknown

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: Yes (5)    Geometric Mean: 935  
No. Ambient Sites: 32    No. Ambient Sampling Records: 168    75<sup>th</sup> %ile: 1910  
No. of NPDES MOR Sites: 5    No. of NPDES MOR Records: 205    90<sup>th</sup> %ile: 6000  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Yes (5)  
Stream Miles Monitored: 20.40    Stream Miles Impaired: 15.60    Pollutants (Waterbody): PCBs (Nimishillen  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0    Creek, Middle Branch  
Nimishillen Creek)

**WAU Comments**

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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 181.1**  
 05040001 060              Sandy Creek (downstream Still Fork to mouth); excluding Nimishillen  
    Creek

**Integrated Report Assessment Category: 5**    **Priority Points: 2**  
**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 <sup>2</sup>	3 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	2 Sites	1 Sites	29.2	25.0	45.8			
20-50 mi <sup>2</sup>	2 Sites	0 Sites						
						21	39	40
Principal Streams								
50-500 mi <sup>2</sup>	8 Sites							
	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)    Geometric Mean: 103  
 No. Ambient Sites: 1    No. Ambient Sampling Records: 1    75<sup>th</sup> %ile: 367  
 No. of NPDES MOR Sites: 4    No. of NPDES MOR Records: 68    90<sup>th</sup> %ile: 1466  
 Other:

**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: 0.0

**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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: Unknown (3-Indeterminate Data)    Geometric Mean:  
No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 3.12    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: No (1)

Geometric Mean: 340

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75<sup>th</sup> %ile: 933

No. of NPDES MOR Sites: 3

No. of NPDES MOR Records: 82

90<sup>th</sup> %ile: 1380

Other:

**Fish Tissue Assessment**

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

Stream Miles Monitored: 16.88 Stream Miles Impaired: 0.00 Pollutants (Waterbody):

Lake Acres Monitored: 1540.0 Lake Acres Impaired: 0.0

**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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 97.3  
 05040001 100              Sugar Creek (headwaters to upstream Middle Fork)

**Integrated Report Assessment Category: 5**    **Priority Points: 5**  
**Next Scheduled Monitoring: 2017**

## Aquatic Life Use Assessment

Subcategories of ALU:    WWH    Sampling Year(s): 1998  
 Impairment:    Yes (4A)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	1 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	7 Sites	4 Sites	53.5	7.2	39.3			
20-50 mi <sup>2</sup>	2 Sites	1 Sites						
						27	3	70
Principal Streams								
50-500 mi <sup>2</sup>	15.0 Miles	0.0 Miles	0.00	0.00	100			

### High Magnitude Causes

Nutrients  
 Siltation  
 Organic Enrichment/DO  
 Direct Habitat Alterations  
 Pathogens  
 Natural Limits (Wetlands)

### High Magnitude Sources

Nonirrigated Crop Production                      Natural  
 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.

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 1459  
 No. Ambient Sites: 10                      No. Ambient Sampling Records: 61                      75<sup>th</sup> %ile: 2850  
 No. of NPDES MOR Sites: 2                      No. of NPDES MOR Records: 23                      90<sup>th</sup> %ile: 10670  
 Other:

## Fish Tissue Assessment

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

## WAU Comments

A report developing TMDLs for pollutants impairing aquatic life uses in the Sugar Creek watershed was approved by U.S. EPA on November 20, 2002. 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 1998. 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html). As this assessment unit continues to have a recreation beneficial use impairment, it will remain Category 5 until TMDLs are developed for all pollutants impairing all beneficial uses.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 137.7  
05040001 110              South Fork Sugar Creek

**Integrated Report Assessment Category: 5**    **Priority Points: 7**  
**Next Scheduled Monitoring: 2017**

## Aquatic Life Use Assessment

Subcategories of ALU:    WWH    Sampling Year(s):    1998  
Impairment:    Yes (4A)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	14 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	15 Sites	2 Sites	3.4	47.6	49.0			
20-50 mi <sup>2</sup>	4 Sites	0 Sites						
						2	37	61
Principal Streams								
50-500 mi <sup>2</sup>	13.5 Miles	0.0 Miles	0.00	25.9	74.1			

### High Magnitude Causes

Cause Unknown                      Direct Habitat Alterations  
Iron                                      Natural Limits (Wetlands)  
Unionized Ammonia  
Nutrients  
pH  
Siltation  
Organic Enrichment/DO  
Flow Alteration

### High Magnitude Sources

Minor Industrial Point Source                      Streambank Destabilization - Ag.  
Nonirrigated Crop Production                      Natural  
Pasture Land    Source Unknown  
Surface Mining  
Industrial Land Treatment  
Channelization - Agriculture  
Flow Regulation/ Modification - Ag.  
Removal of Riparian Vegetation - Ag.

## Recreation Use Assessment

Subcategory of Use:    Primary Contact  
Impairment:    Yes (5)    Geometric Mean:    4153  
No. Ambient Sites:    14    No. Ambient Sampling Records:    84    75<sup>th</sup> %ile:    8250  
No. of NPDES MOR Sites:    3    No. of NPDES MOR Records:    48    90<sup>th</sup> %ile:    14980  
Other:

## Fish Tissue Assessment

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
Stream Miles Monitored:    2.00    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
Lake Acres Monitored:    0.0    Lake Acres Impaired:    0.0

## WAU Comments

A report developing TMDLs for pollutants impairing aquatic life uses in the Sugar Creek watershed was approved by U.S. EPA on November 20, 2002. 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 1998. 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html). As this assessment unit continues to have a recreation beneficial use impairment, it will remain Category 5 until TMDLs are developed for all pollutants impairing all beneficial uses.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 121.3  
 05040001 120              Sugar Creek (upstream Middle Fork to mouth); excluding South Fork

**Integrated Report Assessment Category: 5**    **Priority Points: 6**  
**Next Scheduled Monitoring: 2017**

## Aquatic Life Use Assessment

Subcategories of ALU:    WWH    Sampling Year(s):    1998  
 Impairment:    Yes (4A)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	7 Sites	3 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	9 Sites	4 Sites	46.8	27.8	25.4			
20-50 mi <sup>2</sup>	2 Sites	1 Sites						
						28	37	35
Principal Streams								
50-500 mi <sup>2</sup>	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                      Streambank Destabilization - Ag.  
 Nonirrigated Crop Production                      Natural  
 Pasture Land  
 Surface Mining  
 Landfills  
 Channelization - Agriculture  
 Flow Reg./Mod. - Ag.  
 Removal of Riparian Vegetation - Ag.

## Recreation Use Assessment

Subcategory of Use:    Primary Contact  
 Impairment:    Yes (5)    Geometric Mean:    1173  
 No. Ambient Sites:    13                      No. Ambient Sampling Records:    91                      75<sup>th</sup> %ile:    2825  
 No. of NPDES MOR Sites:    3                      No. of NPDES MOR Records:    57                      90<sup>th</sup> %ile:    7690  
 Other:

## Fish Tissue Assessment

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
 Stream Miles Monitored:    0.40    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
 Lake Acres Monitored:    0.0    Lake Acres Impaired:    0.0

## WAU Comments

A report developing TMDLs for pollutants impairing aquatic life uses in the Sugar Creek watershed was approved by U.S. EPA on November 20, 2002. 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 1998. 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html). As this assessment unit continues to have a recreation beneficial use impairment, it will remain Category 5 until TMDLs are developed for all pollutants impairing all beneficial uses.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 100.1  
 05040001 130              Tuscarawas River (downstream Sugar Cr. to upstream Stillwater Cr.);  
    excluding Tuscarawas R. mainstem

**Integrated Report Assessment Category: 5**    **Priority Points: 10**  
**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 <sup>2</sup>	3 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	7 Sites	2 Sites	40.5	3.5	56.0			
20-50 mi <sup>2</sup>	2 Sites	1 Sites						
						41	3	56
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	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)    Geometric Mean: 1566  
 No. Ambient Sites: 21    No. Ambient Sampling Records: 80    75<sup>th</sup> %ile: 4962  
 No. of NPDES MOR Sites: 0    No. of NPDES MOR Records: 0    90<sup>th</sup> %ile: 16000  
 Other:

## Fish Tissue Assessment

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

## 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

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

Stream Miles Monitored: 0.21 Stream Miles Impaired: 0.00 Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired: 0.0

**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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	6 Sites	2 Sites	16.6	16.7	66.7			
20-50 mi <sup>2</sup>	1 Sites	0 Sites				17	16	67
Principal Streams								
50-500 mi <sup>2</sup>	Miles	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)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
 Stream Miles Monitored:    12.47    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
 Lake Acres Monitored:    0.0    Lake Acres Impaired:    0.0

## 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	6 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	1 Sites	0 Sites	8.3	0.0	91.7			
20-50 mi <sup>2</sup>	1 Sites	0 Sites						
						4	50	46
Principal Streams								
50-500 mi <sup>2</sup>	2.0 Miles	0.0 Miles	0.00	100	0.00			

High Magnitude Causes

Cause Unknown

High Magnitude Sources

Source Unknown

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: No (1)  
Stream Miles Monitored: 1.00    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 2350.0    Lake Acres Impaired: 0.0

**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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 92.7  
 05040001 170              Stillwater Creek (downstream Brushy Fork to mouth); excluding Little  
                                  Stillwater 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use:    Primary Contact  
 Impairment:    Unknown (3-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

**Fish Tissue Assessment**

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
 Stream Miles Monitored:    25.82    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
 Lake Acres Monitored:    0.0    Lake Acres Impaired:    0.0

**WAU Comments**

A small amount of data were collected in this watershed, but there are not enough sampling locations to do a complete assessment. There has been limited sampling on the lower portion of the Stillwater Creek mainstem. No data have been collected in any of the tributaries within this watershed.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 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 <sup>2</sup>	3 Sites	3 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	7 Sites	2 Sites	82.1	10.7	7.2			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						82	11	7
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	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)    Geometric Mean: 1281  
 No. Ambient Sites: 24    No. Ambient Sampling Records: 112    75<sup>th</sup> %ile: 2600  
 No. of NPDES MOR Sites: 0    No. of NPDES MOR Records: 0    90<sup>th</sup> %ile: 608  
 Other:

**Fish Tissue Assessment**

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

**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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 116.4  
 05040001 190              Tuscarawas River (upstream Evans Creek to mouth); excluding  
                                  Tuscarawas R. mainstem

**Integrated Report Assessment Category: 5**    **Priority Points: 10**  
**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	6 Sites	3 Sites	75.0	16.7	8.3			
20-50 mi <sup>2</sup>	3 Sites	3 Sites				75	17	8
Principal Streams								
50-500 mi <sup>2</sup>	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)    Geometric Mean: 1742  
 No. Ambient Sites: 15    No. Ambient Sampling Records: 77    75<sup>th</sup> %ile: 3150  
 No. of NPDES MOR Sites: 0    No. of NPDES MOR Records: 0    90<sup>th</sup> %ile: 23000  
 Other:

## Fish Tissue Assessment

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

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 161.4  
 05040002 010              Black Fork Mohican River (headwaters to downstream Whetstone Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 4**  
**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 <sup>2</sup>	2 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites	50.0	50.0	0.0			
20-50 mi <sup>2</sup>	4 Sites	2 Sites						
						42	46	12
Principal Streams								
50-500 mi <sup>2</sup>	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:    No (1-Historical)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
 Stream Miles Monitored:    18.60    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
 Lake Acres Monitored:    1379.0    Lake Acres Impaired:    0.0

## WAU Comments

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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, 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 <sup>2</sup>	9 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	10 Sites	4 Sites	10.0	25.6	64.4			
20-50 mi <sup>2</sup>	4 Sites	0 Sites						
						5	63	32
Principal Streams								
50-500 mi <sup>2</sup>	2 Sites							
	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)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## 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: 0.0    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.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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    Sampling Year(s): 1998, 1999, 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 <sup>2</sup>	1 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	1 Sites	1 Sites	80.0	10.0	10.0			
20-50 mi <sup>2</sup>	5 Sites	3 Sites						
						78	17	5
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	6.6 Miles	5.0 Miles	75.8	24.2	0.00			

High Magnitude Causes

Siltation

High Magnitude Sources

Channelization-Development

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: Yes (5-Historical)    Geometric Mean:  
No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 9.15    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 1010.0    Lake Acres Impaired: 0.0

**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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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    Sampling Year(s):    1998  
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 <sup>2</sup>	Sites	Sites						
Primary Tributaries			100.0	0.0	0.0			
5-20 mi <sup>2</sup>	2 Sites	2 Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams	5 Sites					100	0	0
50-500 mi <sup>2</sup>	16.7 Miles	16.7 Miles	100	0.00	0.00			

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: No (1-Historical)    Geometric Mean:  
No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 21.45    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 161.5**

05040002 050

Jerome Fork Mohican River

**Integrated Report Assessment Category: 5**

**Priority Points: 7**

**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 <sup>2</sup>	1 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	4 Sites	4 Sites	100.0	0.0	0.0			
20-50 mi <sup>2</sup>	3 Sites	3 Sites						
						88	12	0
Principal Streams								
50-500 mi <sup>2</sup>	7 Sites							
	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)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**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**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 105.3**

05040002 060

Muddy Fork Mohican 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

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

Stream Miles Monitored: 7.40 Stream Miles Impaired: 0.00 Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired: 0.0

**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 two biological reference sites on the Muddy Fork mainstem, and one site on Redhaw Creek have been sampled.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>):** 79.8

05040002 070

Lake Fork Mohican 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

Waters Sampled: No      Impairment: Unknown (3)

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

Lake Acres Monitored: 0.0      Lake Acres Impaired: 0.0

**WAU Comments**

No data of any type have ever been collected by the Ohio EPA within this watershed.



**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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    Sampling Year(s):    1998, 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 <sup>2</sup>	Sites							
Primary Tributaries	Sites							
5-20 mi <sup>2</sup>	1 Sites	1 Sites	100.0	0.0	0.0			
20-50 mi <sup>2</sup>	2 Sites	2 Sites				100	0	0
Principal Streams								
50-500 mi <sup>2</sup>	2 Sites							
	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)    Geometric Mean:  
No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 10.84    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**

Only biological reference sites have been sampled since 1987.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>):** 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

Sampling Year(s): 1998

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 <sup>2</sup>	Sites							
Primary Tributaries			100.0	0.0	0.0			
5-20 mi <sup>2</sup>	2 Sites	2 Sites						
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						100	0	0
Principal Streams								
50-500 mi <sup>2</sup>	13.5 Miles	13.5 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)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

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

Stream Miles Monitored: 4.80    Stream Miles Impaired: 0.00    Pollutants (Waterbody):

Lake Acres Monitored: 628.0    Lake Acres Impaired: 0.0

**WAU Comments**

There is sufficient coverage on the North Branch mainstem, but there are no data from any tributaries within the watershed.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries			100.0	0.0	0.0			
5-20 mi <sup>2</sup>	1 Sites	1 Sites						
20-50 mi <sup>2</sup>	2 Sites	2 Sites						
Principal Streams	6 Sites					81	7	12
50-500 mi <sup>2</sup>	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)    Geometric Mean: 327  
No. Ambient Sites: 7    No. Ambient Sampling Records: 43    75<sup>th</sup> %ile: 492  
No. of NPDES MOR Sites: 2    No. of NPDES MOR Records: 73    90<sup>th</sup> %ile: 858  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 18.28    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**

Only biological reference sites have been sampled since 1987.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	1 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	2 Sites	1 Sites	62.5	12.5	25.0			
20-50 mi <sup>2</sup>	2 Sites	2 Sites						
						64	13	23
Principal Streams								
50-500 mi <sup>2</sup>	15.8 Miles	10.4 Miles	65.7	12.6	21.7			

High Magnitude Causes

Unknown Cause  
Flow Alteration

High Magnitude Sources

Unknown Source  
Pasture Land  
Other Urban Runoff  
Upstream Impoundment

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: No (1)    Geometric Mean: 318  
No. Ambient Sites: 6    No. Ambient Sampling Records: 20    75<sup>th</sup> %ile: 765  
No. of NPDES MOR Sites: 2    No. of NPDES MOR Records: 36    90<sup>th</sup> %ile: 1266  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 12.88    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**

Only biological reference sites have been sampled since 1987.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 138.6  
 05040003 050              Killbuck Creek (headwaters to upstream Apple Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 8**  
**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 <sup>2</sup>	3 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	3 Sites	2 Sites	50.0	33.3	16.7			
20-50 mi <sup>2</sup>	3 Sites	1 Sites						
						74	18	8
Principal Streams								
50-500 mi <sup>2</sup>	11.8 Miles	11.4 Miles	97.0	3.00	0.00			

### High Magnitude Causes

Organic Enrichment/DO  
 Direct Habitat Alterations

### High Magnitude Sources

Nonirrigated Crop Production  
 Feedlots (Confined Animal Feeding Oper.)  
 Channelization - Agriculture  
 Natural

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 387  
 No. Ambient Sites: 6    No. Ambient Sampling Records: 22    75<sup>th</sup> %ile: 708  
 No. of NPDES MOR Sites: 3    No. of NPDES MOR Records: 97    90<sup>th</sup> %ile: 2088  
 Other:

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 171.1  
 05040003 060              Killbuck Creek (upstream Apple Creek to downstream Salt 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  
 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 <sup>2</sup>		Sites	Sites					
Primary Tributaries								
5-20 mi <sup>2</sup>		6 Sites	4 Sites	83.3	0.0	16.7		
20-50 mi <sup>2</sup>		2 Sites	2 Sites					
						57	12	31
Principal Streams								
50-500 mi <sup>2</sup>		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)    Geometric Mean:    629  
 No. Ambient Sites:    2    No. Ambient Sampling Records:    6    75<sup>th</sup> %ile:    1502  
 No. of NPDES MOR Sites:    3    No. of NPDES MOR Records:    50    90<sup>th</sup> %ile:    3156  
 Other:

### Fish Tissue Assessment

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
 Stream Miles Monitored:    0.00    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
 Lake Acres Monitored:    56.0    Lake Acres Impaired:    0.0

### 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 151.9  
 05040003 070              Killbuck Creek (downstream Salt Creek to downstream Black Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 6**  
**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 <sup>2</sup>	4 Sites	3 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	5 Sites	5 Sites	93.8	0.0	6.2			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						97	0	3
Principal Streams								
50-500 mi <sup>2</sup>	6.3 Miles	6.3 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)    Geometric Mean: 439  
 No. Ambient Sites: 2    No. Ambient Sampling Records: 16    75<sup>th</sup> %ile: 2400  
 No. of NPDES MOR Sites: 2    No. of NPDES MOR Records: 50    90<sup>th</sup> %ile: 9400  
 Other:

### 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 146.9  
 05040003 080              Killbuck Creek (downstream Black Creek to mouth)

**Integrated Report Assessment Category: 5**    **Priority Points: 8**  
**Next Scheduled Monitoring: 2009**

## Aquatic Life Use Assessment

Subcategories of ALU:    EWH,WWH    Sampling Year(s):    1993, 1994, 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 <sup>2</sup>	5 Sites	3 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	5 Sites	5 Sites	65.0	25.0	10.0			
20-50 mi <sup>2</sup>	2 Sites	1 Sites						
						75	20	5
Principal Streams								
50-500 mi <sup>2</sup>	2 Sites							
	7.0 Miles	6.0 Miles	85.7	14.3	0.00			

### High Magnitude Causes

Cause Unknown  
 Organic Enrichment

### High Magnitude Sources

Onsite Wastewater Systems (Septic Tanks)  
 Source Unknown

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 785  
 No. Ambient Sites: 3    No. Ambient Sampling Records: 25    75<sup>th</sup> %ile: 1750  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 58    90<sup>th</sup> %ile: 3740  
 Other:

## Fish Tissue Assessment

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

## 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 157.3**

05040003 090

Walhonding River; excluding Killbuck Creek and Walhonding R. mainstem

**Integrated Report Assessment Category: 5**

**Priority Points: 5**

**Next Scheduled Monitoring: 2008**

**Aquatic Life Use Assessment**

Subcategories of ALU: EWH,WWH,LWH

Sampling Year(s): 1994

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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Yes (5-Historical)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

Waters Sampled: No      Impairment: Unknown (3)

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

Lake Acres Monitored: 0.0      Lake Acres Impaired: 0.0

**WAU Comments**

Biological and water quality data collected in 1994 from this assessment unit were used in the 2002 Integrated Report. The 1994 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 aquatic life and recreation use status, the assessment unit will remain Category 5 until TMDLs addressing all beneficial use impairments are completed and approved by the U.S. EPA.



# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 118.1  
 05040004 020              Wakatomika Creek (headwaters to downstream Brushy Fork)

**Integrated Report Assessment Category: 5**    **Priority Points: 11**  
**Next Scheduled Monitoring: 2018**

## Aquatic Life Use Assessment

Subcategories of ALU: EWH,CWH,WWH    Sampling Year(s): 1997, 1998, 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 <sup>2</sup>	6 Sites	5 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	11 Sites	10 Sites	83.5	14.2	2.3			
20-50 mi <sup>2</sup>	5 Sites	4 Sites						
						92	7	1
Principal Streams								
50-500 mi <sup>2</sup>	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  
 Impairment: Yes (5)    Geometric Mean: 1724  
 No. Ambient Sites: 29    No. Ambient Sampling Records: 277    75<sup>th</sup> %ile: 3500  
 No. of NPDES MOR Sites: 0    No. of NPDES MOR Records: 0    90<sup>th</sup> %ile: 17000  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 7.52    Stream Miles Impaired: 7.52    Pollutants (Waterbody): PCBs (Wakatomika Creek)  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway in the Wakatomika Creek watershed. Monitoring in support of 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.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 116.1  
 05040004 030              Wakatomika Creek (downstream Brushy Fork to mouth)

**Integrated Report Assessment Category: 5**    **Priority Points: 9**  
**Next Scheduled Monitoring: 2018**

## Aquatic Life Use Assessment

Subcategories of ALU: EWH,CWH,WWH    Sampling Year(s): 1997, 1998, 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 <sup>2</sup>	8 Sites	3 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	9 Sites	6 Sites	76.1	20.8	3.1			
20-50 mi <sup>2</sup>	2 Sites	2 Sites						
						72	26	2
Principal Streams								
50-500 mi <sup>2</sup>	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 (5)    Geometric Mean: 619  
 No. Ambient Sites: 90    No. Ambient Sampling Records: 26    75<sup>th</sup> %ile: 915  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 13    90<sup>th</sup> %ile: 2790  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 20.08    Stream Miles Impaired: 18.38    Pollutants (Waterbody): PCBs (Wakatomika Creek)  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway in the Wakatomika Creek watershed. Monitoring in support of 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.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**  
05040004 040

**WAU Description**  
Jonathan Creek

**WAU Size (mi<sup>2</sup>):** 193.9

**Integrated Report Assessment Category: 3**  
**Next Scheduled Monitoring: 2008**

**Priority Points:**

**Aquatic Life Use Assessment**

Subcategories of ALU: EWH,WWH,LRW,LWH  
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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

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

Geometric Mean:  
75<sup>th</sup> %ile:  
90<sup>th</sup> %ile:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 18.30    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**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.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 108.4**

05040004 050

Moxahala Creek (excluding Jonathan Creek)

**Integrated Report Assessment Category: 5**

**Priority Points: 1**

**Next Scheduled Monitoring: 2013**

**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 <sup>2</sup>	2 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	3 Sites	0 Sites	25.0	16.7	58.3			
20-50 mi <sup>2</sup>	Sites	Sites						
						25	17	58
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	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)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

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

Stream Miles Monitored: 2.00 Stream Miles Impaired: 0.00 Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired: 0.0

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 144.8**  
 05040004 060              Salt Creek

**Integrated Report Assessment Category: 5**    **Priority Points: 4**  
**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries			100.0	0.0	0.0			
5-20 mi <sup>2</sup>	6 Sites	6 Sites						
20-50 mi <sup>2</sup>	2 Sites	2 Sites				100	0	0
Principal Streams	1 Sites							
50-500 mi <sup>2</sup>	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)    Geometric Mean: 790  
 No. Ambient Sites: 29    No. Ambient Sampling Records: 157    75<sup>th</sup> %ile: 1550  
 No. of NPDES MOR Sites: 0    No. of NPDES MOR Records: 0    90<sup>th</sup> %ile: 3580  
 Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 2.00    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**



**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 142.2**

05040004 080

Meigs Creek

**Integrated Report Assessment Category: 5**

**Priority Points: 5**

**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries			0.0	50.0	50.0			
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	2 Sites	0 Sites				0	25	75
Principal Streams	1 Sites							
50-500 mi <sup>2</sup>	8.1 Miles	0.0 Miles	0.00	0.00	100			

High Magnitude Causes

Siltation

High Magnitude Sources

Surface Mining

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Geometric Mean: 643

No. Ambient Sites: 27

No. Ambient Sampling Records: 38

75<sup>th</sup> %ile: 1600

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90<sup>th</sup> %ile: 2000

Other:

**Fish Tissue Assessment**

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

Stream Miles Monitored: 2.60    Stream Miles Impaired: 0.00    Pollutants (Waterbody):

Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	1 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	7 Sites	3 Sites	71.4	0.0	28.6			
20-50 mi <sup>2</sup>	Sites	Sites						
						58	14	28
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	7.2 Miles	3.2 Miles	44.4	27.8	27.8			

High Magnitude Causes

Nutrients  
Pathogens

High Magnitude Sources

Pasture Land

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 13.90    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	Sites							
Primary Tributaries		Sites	58.3	25.0	16.7			
5-20 mi <sup>2</sup>	3 Sites	2 Sites						
20-50 mi <sup>2</sup>	2 Sites	1 Sites						
						29	13	58
Principal Streams								
50-500 mi <sup>2</sup>	7.2 Miles	0.0 Miles	0.00	0.00	100			

High Magnitude Causes

Siltation  
Flow Alteration

High Magnitude Sources

Channelization - Agriculture  
Natural

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 2.00    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 163.4  
 05040005 020              Wills Creek (headwaters to upstream Leatherwood Creek); excluding  
    Seneca Fork

**Integrated Report Assessment Category: 5**    **Priority Points: 7**  
**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	8 Sites	0 Sites	0.0	37.5	62.5			
20-50 mi <sup>2</sup>	Sites	Sites						
						0	39	61
Principal Streams								
50-500 mi <sup>2</sup>	7 Sites							
	15.2 Miles	0.0 Miles	0.00	41.4	58.6			

### High Magnitude Causes

Metals  
 Unionized Ammonia  
 Siltation  
 Direct Habitat Alterations

### High Magnitude Sources

Surface Mining  
 Onsite Wastewater Systems (Septic Tanks)  
 Hazardous Waste  
 Natural

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (5-Historical)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 6.20    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

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

Stream Miles Monitored: 2.00 Stream Miles Impaired: 0.00 Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired: 0.0

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 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 <sup>2</sup>	4 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	3 Sites	1 Sites	14.6	79.2	6.2			
20-50 mi <sup>2</sup>	2 Sites	0 Sites						
						15	79	6
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

Siltation  
Direct Habitat Alterations

High Magnitude Sources

Pature Land  
Range Grazing - Riparian  
Range Grazing - Upland  
Channelization - Agriculture

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 164.9  
 05040005 050              Wills Creek (downstream Leatherwood Cr. to downstream Birds Run);  
 excluding Wills Creek mainstem

**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use:    Primary Contact  
 Impairment:    Unknown (3-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

**Fish Tissue Assessment**

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
 Stream Miles Monitored:    2.00    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
 Lake Acres Monitored:    0.0    Lake Acres Impaired:    0.0

**WAU Comments**



# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 111.4  
 05040006 010              North Fork Licking River (headwaters to downstream Sycamore 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, 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 <sup>2</sup>	5 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	8 Sites	4 Sites	62.5	14.4	23.1			
20-50 mi <sup>2</sup>	5 Sites	5 Sites						
						81	7	12
Principal Streams								
50-500 mi <sup>2</sup>	1 Sites							
	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  
 Impairment: Yes (5-Historical)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 11.22    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>):** 129.0

05040006 020

North Fork Licking River (downstream Sycamore Creek to mouth)

**Integrated Report Assessment Category: 3**

**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

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

Stream Miles Monitored: 20.28    Stream Miles Impaired: 0.00    Pollutants (Waterbody):

Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**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.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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, 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 <sup>2</sup>	9 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	10 Sites	7 Sites	42.5	35.6	21.9			
20-50 mi <sup>2</sup>	2 Sites	1 Sites						
						52	37	11
Principal Streams								
50-500 mi <sup>2</sup>	2 Sites							
	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)    Geometric Mean:  
No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
Other:

**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.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 184.9  
 05040006 040              South Fork Licking River (excluding Raccoon Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 6**  
**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 <sup>2</sup>		Sites	Sites						
Primary Tributaries									
5-20 mi <sup>2</sup>		5 Sites	4 Sites	90.0	0.0	10.0			
20-50 mi <sup>2</sup>		3 Sites	3 Sites						
							95	0	5
Principal Streams									
50-500 mi <sup>2</sup>		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)    Geometric Mean:    584  
 No. Ambient Sites:    0    No. Ambient Sampling Records:    0    75<sup>th</sup> %ile:    1600  
 No. of NPDES MOR Sites:    6    No. of NPDES MOR Records:    195    90<sup>th</sup> %ile:    3340  
 Other:

## Fish Tissue Assessment

Waters Sampled:    Yes    Impairment:    No (1)  
 Stream Miles Monitored:    21.10    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
 Lake Acres Monitored:    3136.0    Lake Acres Impaired:    0.0

## 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.





**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 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)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	Sites							
Primary Tributaries		Sites	41.7	39.6	18.7			
5-20 mi <sup>2</sup>	8 Sites	4 Sites						
20-50 mi <sup>2</sup>	3 Sites	1 Sites						
						38	53	9
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	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)    Geometric Mean: 672  
 No. Ambient Sites: 8    No. Ambient Sampling Records: 18    75<sup>th</sup> %ile: 2700  
 No. of NPDES MOR Sites: 2    No. of NPDES MOR Records: 35    90<sup>th</sup> %ile: 7000  
 Other:

**Fish Tissue Assessment**

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

**WAU Comments**

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. Status of fish consumption in this assessment unit is unknown. The assessment unit continues to be impaired for aquatic life use and recreation.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 105.3**

05060001 020

Rush Creek

**Integrated Report Assessment Category: 5**

**Priority Points: 6**

**Next Scheduled Monitoring: 2009**

**Aquatic Life Use Assessment**

Subcategories of ALU: WWH,LRW

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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Yes (5-Historical)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

Waters Sampled: No    Impairment: Unknown (3)

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

Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**



# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 112.6  
 05060001 040              Little Scioto River

**Integrated Report Assessment Category: 5**    **Priority Points: 6**  
**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 <sup>2</sup>	2 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	4 Sites	0 Sites	37.5	25.0	37.5			
20-50 mi <sup>2</sup>	2 Sites	1 Sites						
						19	21	60
Principal Streams								
50-500 mi <sup>2</sup>	11.6 Miles	0.0 Miles	0.00	17.2	82.8			

### High Magnitude Causes

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

### High Magnitude Sources

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)    Geometric Mean: 578  
 No. Ambient Sites: 3    No. Ambient Sampling Records: 6    75<sup>th</sup> %ile: 1167  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 202    90<sup>th</sup> %ile: 3560  
 Other: A "Dermal Contact Advisory" is in effect for the Little Scioto River due to PAHs contamination. The area under the advisory is from St. Rt. 739 near Marion to Holland Rd. near Marion.

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment:  
 Stream Miles Monitored: 12.10    Stream Miles Impaired: 6.30    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 140.0  
 05060001 050              Scioto River (downstream Little Scioto River to upstream Bokes Creek);  
 excluding Scioto R. mainstem

**Integrated Report Assessment Category: 5**    **Priority Points: 4**  
**Next Scheduled Monitoring: 2009**

**Aquatic Life Use Assessment**

Subcategories of ALU:    WWH,LRW    Sampling Year(s):    1995  
 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use:    Primary Contact  
 Impairment:    Yes (5)    Geometric Mean:    827  
 No. Ambient Sites:    13                      No. Ambient Sampling Records:    45                      75<sup>th</sup> %ile:    2550  
 No. of NPDES MOR Sites:    1                      No. of NPDES MOR Records:    18                      90<sup>th</sup> %ile:    7970  
 Other:

**Fish Tissue Assessment**

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

**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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 107.7  
 05060001 060              Scioto River (upstream Bokes Creek to upstream Mill Creek); excluding  
    Scioto R. mainstem

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

## Aquatic Life Use Assessment

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

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	15 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	4 Sites	0 Sites	18.3	33.3	48.4			
20-50 mi <sup>2</sup>	3 Sites	1 Sites						
Principal Streams						9	61	30
50-500 mi <sup>2</sup>	4 Sites							
	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  
 Ag  
 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. -  
 Bank Destabilization - Ag.

## Recreation Use Assessment

Subcategory of Use:    Primary Contact  
 Impairment:    Yes (5-Historical)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

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

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 179.3  
05060001 070              Mill Creek

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

## Aquatic Life Use Assessment

Subcategories of ALU:    WWH,MWH-C,LRW    Sampling Year(s):    1995, 2000, 2001  
Impairment:    Yes (4A)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	9 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	4 Sites	2 Sites	45.5	0.0	54.5			
20-50 mi <sup>2</sup>	5 Sites	3 Sites						
						48	19	33
Principal Streams								
50-500 mi <sup>2</sup>	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)    Geometric Mean: 924  
No. Ambient Sites: 1    No. Ambient Sampling Records: 26    75<sup>th</sup> %ile: 2425  
No. of NPDES MOR Sites: 2    No. of NPDES MOR Records: 74    90<sup>th</sup> %ile: 5504  
Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 23.00    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 133.6  
 05060001 090              Olentangy River (headwaters to downstream Flat Run)

**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):    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 <sup>2</sup>	Sites							
Primary Tributaries	Sites		70.5	25.0	4.5			
5-20 mi <sup>2</sup>	11 Sites	10 Sites						
20-50 mi <sup>2</sup>	2 Sites	1 Sites				35	57	8
Principal Streams								
50-500 mi <sup>2</sup>	3 Sites		0.00	88.9	11.1			
	15.4 Miles	0.0 Miles						

### High Magnitude Causes

Nutrients  
 Siltation  
 Direct Habitat Alterations  
 Flow Alteration

### High Magnitude Sources

Major Municipal Point Source  
 Nonirrigated Crop Production  
 Streambank Modification/Destabilization-Agriculture  
 Removal of Riparian Vegetation-Agriculture  
 Upstream Impoundment

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 984  
 No. Ambient Sites: 20    No. Ambient Sampling Records: 194    75<sup>th</sup> %ile: 2800  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 56    90<sup>th</sup> %ile: 7020  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 29.92    Stream Miles Impaired: 29.92    Pollutants (Waterbody): PCBs (Olentangy River)  
 Lake Acres Monitored: 80.0    Lake Acres Impaired: 0.0

## WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway in the Olentangy River watershed. Monitoring in support of TMDL development was conducted in 2003 and 2004. Significant streams sampled in this assessment unit included the Olentangy River, Rocky Fork, Mud Run, Flat Run, and Thorn Run.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 114.5  
05060001 100              Whetstone Creek

**Integrated Report Assessment Category: 5**    **Priority Points: 9**  
**Next Scheduled Monitoring: 2018**

## Aquatic Life Use Assessment

Subcategories of ALU: EWH,CWH,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 <sup>2</sup>	2 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	9 Sites	6 Sites	41.6	52.8	5.6			
20-50 mi <sup>2</sup>	8 Sites	4 Sites				21	76	3
Principal Streams								
50-500 mi <sup>2</sup>	2 Sites							
	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 (5)    Geometric Mean: 1026  
No. Ambient Sites: 26    No. Ambient Sampling Records: 207    75<sup>th</sup> %ile: 2950  
No. of NPDES MOR Sites: 3    No. of NPDES MOR Records: 74    90<sup>th</sup> %ile: 10200  
Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
Stream Miles Monitored: 23.00    Stream Miles Impaired: 23.00    Pollutants (Waterbody): PCBs (Whetstone Creek)  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway in the Olentangy River watershed. Monitoring in support of 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.



# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 113.0  
 05060001 120              Olentangy River (downstream Delaware Run to mouth)

**Integrated Report Assessment Category: 5**    **Priority Points: 8**  
**Next Scheduled Monitoring: 2018**

## Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH,MWH-I    Sampling Year(s): 1999, 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 <sup>2</sup>	10 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	1 Sites	0 Sites	0.0	0.0	100			
20-50 mi <sup>2</sup>	Sites	Sites				40	7	53
Principal Streams								
50-500 mi <sup>2</sup>	9 Sites							
	24.3 Miles	19.3 Miles	79.4	14.4	6.20			

### 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  
 Impairment: Yes (5)    Geometric Mean: 421  
 No. Ambient Sites: 18    No. Ambient Sampling Records: 148    75<sup>th</sup> %ile: 890  
 No. of NPDES MOR Sites: 2    No. of NPDES MOR Records: 100    90<sup>th</sup> %ile: 2891  
 Other:

## 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: 0.0

## WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway in the Olentangy River watershed. Monitoring in support of 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.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	16 Sites	5 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	15 Sites	7 Sites	36.2	8.0	55.8			
20-50 mi <sup>2</sup>	3 Sites	1 Sites						
						68	4	28
Principal Streams								
50-500 mi <sup>2</sup>	3 Sites							
	8.4 Miles	8.4 Miles	100	0.00	0.00			

### High Magnitude Causes

Cause Unknown              Suspended Solids  
 Unionized Ammonia        Pathogens  
 Nutrients  
 Siltation  
 Organic Enrichment/DO  
 Flow Alteration  
 Direct Habitat Alterations

### High Magnitude Sources

Nonirrigated Crop Production              Septage Disposal  
 Land Development/Suburbanization        Dam Construction  
 Urban Runoff/Storm Sewers (NPS)  
 Onsite Wastewater Systems (Septic Tanks)  
 Removal of Riparian Vegetation  
 Channelization - Agriculture  
 Source Unknown  
 Range Grazing - Riparian

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (4A)    Geometric Mean: 1401  
 No. Ambient Sites: 0    No. Ambient Sampling Records: 0    75<sup>th</sup> %ile: 3000  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 37    90<sup>th</sup> %ile: 6320  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 22.50    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 3000.0    Lake Acres Impaired: 0.0

## 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).



# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	2 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	8 Sites	2 Sites	37.5	43.8	18.7			
20-50 mi <sup>2</sup>	2 Sites	1 Sites						
						69	22	9
Principal Streams								
50-500 mi <sup>2</sup>	2 Sites							
	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  
 Source Unknown  
 Removal of Riparian Vegetation

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (4A)    Geometric Mean: 183  
 No. Ambient Sites: 0    No. Ambient Sampling Records: 0    75<sup>th</sup> %ile: 420  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 20    90<sup>th</sup> %ile: 644  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: No (1)  
 Stream Miles Monitored: 0.00    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 3387.0    Lake Acres Impaired: 0.0

## WAU Comments

A report developing TMDLs for pollutants impairing beneficial uses 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	2 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	1 Sites	0 Sites	0.0	100	0.0			
20-50 mi <sup>2</sup>	Sites	Sites				44	56	0
Principal Streams								
50-500 mi <sup>2</sup>	9 Sites	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  
 Impairment: Yes (4A)    Geometric Mean: 347  
 No. Ambient Sites: 0    No. Ambient Sampling Records: 0    75<sup>th</sup> %ile: 547  
 No. of NPDES MOR Sites: 2    No. of NPDES MOR Records: 94    90<sup>th</sup> %ile: 1026  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 35.22    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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,WWH    Sampling Year(s): 1996  
 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 <sup>2</sup>	2 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	16 Sites	11 Sites	84.4	15.6	0.0			
20-50 mi <sup>2</sup>	2 Sites	2 Sites						
						88	8	4
Principal Streams								
50-500 mi <sup>2</sup>	12.5 Miles	11.5 Miles	92.0	0.00	8.00			

### High Magnitude Causes

Cause Unknown  
 Mercury  
 Organic Enrichment/DO  
 Flow Alteration

### High Magnitude Sources

Major Industrial Point Source  
 Land Development/Suburbanization  
 Urban Runoff/Storm Sewers (NPS)  
 Spills  
 Source Unknown

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 573  
 No. Ambient Sites: 27    No. Ambient Sampling Records: 214    75<sup>th</sup> %ile: 1300  
 No. of NPDES MOR Sites: 4    No. of NPDES MOR Records: 114    90<sup>th</sup> %ile: 2900  
 Other:

## 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: 0.0

## WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the Walnut Creek basin in 2005. 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 this report but will be the basis for the TMDL and 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 147.5  
 05060001 180              Walnut Creek (downstream Sycamore Creek to mouth)

**Integrated Report Assessment Category: 5**    **Priority Points: 8**  
**Next Scheduled Monitoring: 2020**

## Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH,MWH-C    Sampling Year(s): 1996  
 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 <sup>2</sup>	9 Sites	4 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	7 Sites	5 Sites	29.0	9.9	61.1			
20-50 mi <sup>2</sup>	1 Sites	0 Sites						
						63	5	32
Principal Streams								
50-500 mi <sup>2</sup>	16 Sites							
	29.5 Miles	28.5 Miles	96.6	0.00	3.40			

### High Magnitude Causes

Cause Unknown  
 Unknown Toxicity  
 Siltation  
 Flow Alteration  
 Direct Habitat Alterations

### High Magnitude Sources

Nonirrigated Crop Production  
 Land Development/Suburbanization  
 Urban Runoff/Storm Sewers (NPS)  
 Channelization - Development  
 Source Unknown

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 559  
 No. Ambient Sites: 28    No. Ambient Sampling Records: 214    75<sup>th</sup> %ile: 985  
 No. of NPDES MOR Sites: 3    No. of NPDES MOR Records: 74    90<sup>th</sup> %ile: 3060  
 Other:

## 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: 0.0

## WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the Walnut Creek basin in 2005. 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 this report but will be the basis for the TMDL and 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 176.1  
 05060001 190              Big Darby Creek (headwaters to downstream Sugar Run)

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

## Aquatic Life Use Assessment

Subcategories of ALU: EWH,CWH,WWH,MWH,LRW    Sampling Year(s): 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 <sup>2</sup>	16 Sites	13 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	16 Sites	10 Sites	61.0	32.8	6.2			
20-50 mi <sup>2</sup>	2 Sites	1 Sites						
						53	44	3
Principal Streams								
50-500 mi <sup>2</sup>	10 Sites							
	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 (5)    Geometric Mean: 479  
 No. Ambient Sites: 37    No. Ambient Sampling Records: 147    75<sup>th</sup> %ile: 1105  
 No. of NPDES MOR Sites: 3    No. of NPDES MOR Records: 69    90<sup>th</sup> %ile: 3100  
 Other:

## 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: 0.0

## WAU Comments

TMDLs for pollutants impairing beneficial uses are in progress for the Big Darby Creek basin. Monitoring in support of the TMDL 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 77.0  
 05060001 200              Big Darby Creek (downstream Sugar Run to upstream Little Darby Creek)

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

## Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH    Sampling Year(s): 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 <sup>2</sup>	2 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	2 Sites	1 Sites	50.0	25.0	25.0			
20-50 mi <sup>2</sup>	Sites	Sites						
						60	28	12
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	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)    Geometric Mean: 267  
 No. Ambient Sites: 6    No. Ambient Sampling Records: 28    75<sup>th</sup> %ile: 914  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 18    90<sup>th</sup> %ile: 1900  
 Other:

## 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: 0.0

## WAU Comments

TMDLs for pollutants impairing beneficial uses are in progress for the Big Darby Creek basin. Monitoring in support of the TMDL 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 178.5  
 05060001 210              Little Darby Creek

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

## Aquatic Life Use Assessment

Subcategories of ALU: EWH,CWH,WWH    Sampling Year(s): 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 <sup>2</sup>	7 Sites	4 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	14 Sites	8 Sites	68.6	21.4	10.0			
20-50 mi <sup>2</sup>	5 Sites	4 Sites						
						79	16	5
Principal Streams								
50-500 mi <sup>2</sup>	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 (5)    Geometric Mean: 382  
 No. Ambient Sites: 30    No. Ambient Sampling Records: 145    75<sup>th</sup> %ile: 1043  
 No. of NPDES MOR Sites: 2    No. of NPDES MOR Records: 43    90<sup>th</sup> %ile: 3630  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 34.70    Stream Miles Impaired: 34.70    Pollutants (Waterbody): PCBs (Little Darby Creek)  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## WAU Comments

TMDLs for pollutants impairing beneficial uses are in progress for the Big Darby Creek basin. Monitoring in support of the TMDL 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 124.0  
 05060001 220              Big Darby Creek (downstream Little Darby Creek to mouth)

**Integrated Report Assessment Category: 5**    **Priority Points: 4**  
**Next Scheduled Monitoring: 2021**

## Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH,MWH,LRW    Sampling Year(s): 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 <sup>2</sup>	11 Sites	5 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	5 Sites	2 Sites	57.1	42.9	0.0			
20-50 mi <sup>2</sup>	7 Sites	4 Sites						
						75	16	9
Principal Streams								
50-500 mi <sup>2</sup>	15 Sites							
	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)    Geometric Mean: 263  
 No. Ambient Sites: 24    No. Ambient Sampling Records: 168    75<sup>th</sup> %ile: 593  
 No. of NPDES MOR Sites: 3    No. of NPDES MOR Records: 67    90<sup>th</sup> %ile: 1790  
 Other:

## 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: 0.0

## WAU Comments

TMDLs for pollutants impairing beneficial uses are in progress for the Big Darby Creek basin. Monitoring in support of the TMDL 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).





**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	2 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	6 Sites	4 Sites	83.3	0.0	16.7			
20-50 mi <sup>2</sup>	5 Sites	5 Sites						
						92	0	8
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	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)    Geometric Mean:  
No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 24.68    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 106.0    Lake Acres Impaired: 0.0

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	1 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	1 Sites	1 Sites	100.0	0.0	0.0			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						77	23	0
Principal Streams								
50-500 mi <sup>2</sup>	5 Sites							
	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)    Geometric Mean:  
No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 24.36    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries			50.0	50.0	0.0			
5-20 mi <sup>2</sup>	1 Sites	1 Sites						
20-50 mi <sup>2</sup>	1 Sites	0 Sites				75	25	0
Principal Streams	6 Sites							
50-500 mi <sup>2</sup>	16.9 Miles	16.9 Miles	100	0.00	0.00			

High Magnitude Causes

Organic Enrichment/DO

High Magnitude Sources

Municipal Point Source

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: Unknown (3-Indeterminate Data)    Geometric Mean:  
No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 15.66    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 97.0  
 05060002 050              Scioto River (upstream Kinnikinnick Creek to upstream Paint Creek);  
 excluding Scioto R. mainstem

**Integrated Report Assessment Category: 3**    **Priority Points:**  
**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

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

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 129.1  
 05060002 060              Scioto River (downstream Paint Creek to upstream Salt Creek); excluding  
    Scioto R. mainstem

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use:    Primary Contact  
 Impairment:    Unknown (3-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:                      No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

**Fish Tissue Assessment**

Waters Sampled:    Yes    Impairment:    Yes (5)  
 Stream Miles Monitored:    0.00    Stream Miles Impaired:    0.00    Pollutants (Waterbody):    PCBs (Ross Lake)  
 Lake Acres Monitored:    140.0    Lake Acres Impaired:    140.0

**WAU Comments**

The 2006 Integrated Report assessment of fish tissue data from Ross Lake 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 174.6  
 05060002 070              Salt Creek (headwaters to upstream Queer Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 8**  
**Next Scheduled Monitoring: 2021**

## Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH    Sampling Year(s): 1992  
 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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	5 Sites	4 Sites	90.0	10.0	0.0			
20-50 mi <sup>2</sup>	3 Sites	3 Sites				69	31	0
Principal Streams								
50-500 mi <sup>2</sup>	2 Sites							
	7.3 Miles	3.5 Miles	48.2	51.8	0.00			

### High Magnitude Causes

Memo

### High Magnitude Sources

Streambank Destabilization-Agriculture

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 451  
 No. Ambient Sites: 29    No. Ambient Sampling Records: 80    75<sup>th</sup> %ile: 888  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 14    90<sup>th</sup> %ile: 2740  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 6.30    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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. 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. Intensive chemical, physical, and biological monitoring was conducted in the Salt Creek basin in 2005. 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 this report but will be the basis for the TMDL and 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>):** 109.0

05060002 080

Middle Fork Salt Creek

**Integrated Report Assessment Category: 2**

**Priority Points:**

**Next Scheduled Monitoring: 2021**

**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: No (1)

Geometric Mean: 340

No. Ambient Sites: 17

No. Ambient Sampling Records: 35

75<sup>th</sup> %ile: 620

No. of NPDES MOR Sites: 0

No. of NPDES MOR Records: 0

90<sup>th</sup> %ile: 1900

Other:

**Fish Tissue Assessment**

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

Stream Miles Monitored: 2.10    Stream Miles Impaired: 0.00    Pollutants (Waterbody):

Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**

Intensive chemical, physical, and biological monitoring was conducted in the Salt Creek basin in 2005. For the 2006 Integrated Report, 2005 bacteria data were available and indicated no impairment of the recreation use in this assessment unit. 2005 biological and chemical data for assessment of aquatic life uses were not available for this report but will be the basis for the TMDL and 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 138.5  
 05060002 090              Salt Lick Creek (excluding Middle Fork)

**Integrated Report Assessment Category: 5**    **Priority Points: 4**  
**Next Scheduled Monitoring: 2021**

## 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 <sup>2</sup>	5 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	8 Sites	2 Sites	32.9	45.8	21.3			
20-50 mi <sup>2</sup>	3 Sites	1 Sites						
						61	28	11
Principal Streams								
50-500 mi <sup>2</sup>	22.5 Miles	20.0 Miles	88.8	11.2	0.00			

### High Magnitude Causes

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

### High Magnitude Sources

Source Unknown                      Habitat Modifications o/than Hydromod.  
 Major Municipal Point Source    Removal of Riparian Vegetation - Ag.  
 Range Grazing - Riparian  
 Range Grazing - Upland  
 Other Urban Runoff  
 Channelization - Agriculture  
 Channelization - Development  
 Flow Regulation/Modification

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: No (1)    Geometric Mean: 246  
 No. Ambient Sites: 22                      No. Ambient Sampling Records: 56                      75<sup>th</sup> %ile: 575  
 No. of NPDES MOR Sites: 1                      No. of NPDES MOR Records: 58                      90<sup>th</sup> %ile: 1100  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 14.20    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## WAU Comments

Development of TMDLs for pollutants impairing beneficial uses is underway in the Salt Creek watershed. Monitoring in support of TMDL development in the Salt Lick Creek watershed was conducted in 2004. Significant streams sampled in this assessment unit included Salt Lick Creek, Pigeon Creek, and Buckeye Creek. For the 2006 Integrated Report, 2004 bacteria data indicated no impairment of the recreation use in this assessment unit. The 2004 biological and chemical data used to assess and identify impaired aquatic life uses will be the basis for the TMDL. Check the TMDL web page at <http://www.epa.state.oh.us/dsw/tmdl/index.html> for updated information..



**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 137.0  
 05060002 110              Scioto River (downstream Salt Creek to downstream Pee Pee Creek);  
 excluding Scioto R. mainstem

**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
 Stream Miles Monitored:    0.00    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
 Lake Acres Monitored:    337.0    Lake Acres Impaired:    0.0

**WAU Comments**



**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

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

Stream Miles Monitored: 19.90 Stream Miles Impaired: 0.00 Pollutants (Waterbody):

Lake Acres Monitored: 13.0 Lake Acres Impaired: 0.0

**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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 113.0  
 05060002 140              South Fork Scioto Brush Creek

**Integrated Report Assessment Category: 5**    **Priority Points: 3**  
**Next Scheduled Monitoring: 2006**

## Aquatic Life Use Assessment

Subcategories of ALU: EWH    Sampling Year(s): 1997, 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 <sup>2</sup>	18 Sites	9 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	6 Sites	4 Sites	58.4	8.3	33.3			
20-50 mi <sup>2</sup>	Sites	Sites						
						59	8	33
Principal Streams								
50-500 mi <sup>2</sup>	1 Sites							
	1.6 Miles	0.0 Miles	0.00	100	0.00			

### High Magnitude Causes

Cause Unknown  
 Flow Alteration  
 Nutrients

### High Magnitude Sources

Channization - Agriculture  
 Pasture Land  
 Upstream Impoundment  
 Natural  
 Source Unknown

## Recreation Use Assessment

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

## Fish Tissue Assessment

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

## WAU Comments

Many previously unassessed streams in this watershed were sampled by ODNR Division of Wildlife in 2001 and 2002. Data were used as a supplement to Ohio EPA data in determining aquatic life use attainment status. All streams within this assessment unit are designated Exceptional Warmwater Habitat. The assessment unit score was adjusted to reflect true conditions within the watershed. Many of the small tributaries scored exceptionally high IBI scores. One site greater than 50 square miles was assessed, and it achieved "partial attainment". Since it was determined to be uncharacteristic of the overall assessment unit condition, this one site was excluded from the watershed score calculation.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 160.2  
05060002 150              Scioto Brush Creek (excluding South Fork)

**Integrated Report Assessment Category: 5**    **Priority Points: 3**  
**Next Scheduled Monitoring: 2006**

**Aquatic Life Use Assessment**

Subcategories of ALU: EWH    Sampling Year(s): 1994, 1997, 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 <sup>2</sup>	16 Sites	8 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	9 Sites	6 Sites	58.3	0.0	41.7			
20-50 mi <sup>2</sup>	Sites	Sites						
						79	0	21
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	3.6 Miles	3.6 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: Unknown (3-Indeterminate Data)    Geometric Mean:  
No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 13.20    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**

Many previously unassessed streams in this watershed were sampled by ODNR Division of Wildlife in 2001 and 2002. Data were used as a supplement to Ohio EPA data in determining aquatic life use attainment status.



# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 119.3  
 05060003 010              Paint Creek (headwaters to downstream East Fork)

**Integrated Report Assessment Category: 5**    **Priority Points: 4**  
**Next Scheduled Monitoring: 2006**

## 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 <sup>2</sup>		Sites	Sites					
Primary Tributaries								
5-20 mi <sup>2</sup>		1 Sites	1 Sites	70.0	0.0	30.0		
20-50 mi <sup>2</sup>		5 Sites	2 Sites					
						61	24	15
Principal Streams								
50-500 mi <sup>2</sup>		7.6 Miles	3.9 Miles	51.6	48.4	0.00		

### High Magnitude Causes

Nutrients  
 Siltation  
 Direct Habitat Alterations

### High Magnitude Sources

Combined Sewer Overflows  
 Nonirrigated Crop Production  
 Urban Runoff/Storm Sewers (NPS)  
 Channelization - Agriculture

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Unknown (3-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## 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: 0.0

## WAU Comments

A Watershed Management Plan prepared by a CWA Section 319 funded Watershed Coordinator under the direction of the Paint Creek watershed SWCDs (Ross, Fayette, Highland, Greene, Madison, and Clinton) is currently under development. Monitoring in support of the project was conducted in the upper Paint Creek watershed by the Ohio EPA in 1997. 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 81.5  
05060003 020              Sugar Creek

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**Next Scheduled Monitoring: 2006**

## Aquatic Life Use Assessment

Subcategories of ALU:    WWH    Sampling Year(s):    1997, 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 <sup>2</sup>	Sites							
Primary Tributaries	Sites		0.0	25.0	75.0			
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	4 Sites	0 Sites				0	62	38
Principal Streams								
50-500 mi <sup>2</sup>	14.9 Miles	0.0 Miles	0.00	100	0.00			

### High Magnitude Causes

Cause Unknown  
Nutrients  
Direct Habitat Alterations

### High Magnitude Sources

Minor Municipal Point Source  
Channelization - Agriculture  
Source Unknown

## Recreation Use Assessment

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

## Fish Tissue Assessment

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

## WAU Comments

A Watershed Management Plan prepared by a CWA Section 319 funded Watershed Coordinator under the direction of the Paint Creek watershed SWCDs (Ross, Fayette, Highland, Greene, Madison, and Clinton) is currently under development. Monitoring in support of the project was conducted in the upper Paint Creek watershed by the Ohio EPA in 1997.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 130.6  
 05060003 030              Rattlesnake Creek (headwaters to upstream Lees Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**Next Scheduled Monitoring: 2006**

## 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	2 Sites	1 Sites	25.0	35.0	40.0			
20-50 mi <sup>2</sup>	5 Sites	0 Sites						
						13	42	45
Principal Streams								
50-500 mi <sup>2</sup>	17.4 Miles	0.0 Miles	0.00	49.6	50.4			

### High Magnitude Causes

Nutrients  
 Organic Enrichment/DO  
 Direct Habitat Alterations

### High Magnitude Sources

Minor Municipal Point Source  
 Channelization - Agriculture

## Recreation Use Assessment

Subcategory of Use:    Primary Contact  
 Impairment:    Unknown (3-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:                      No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
 Stream Miles Monitored:    18.20    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
 Lake Acres Monitored:    0.0    Lake Acres Impaired:    0.0

## WAU Comments

A Watershed Management Plan prepared by a CWA Section 319 funded Watershed Coordinator under the direction of the Paint Creek watershed SWCDs (Ross, Fayette, Highland, Greene, Madison, and Clinton) is currently under development. Monitoring in support of the project was conducted in the upper Paint Creek watershed by the Ohio EPA in 1997.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 148.3  
05060003 040              Rattlesnake Creek (upstream Lees Creek to mouth)

**Integrated Report Assessment Category: 2**    **Priority Points:**  
**Next Scheduled Monitoring: 2006**

**Aquatic Life Use Assessment**

Subcategories of ALU:    EWH,WWH    Sampling Year(s):    1996, 1997  
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 <sup>2</sup>	1 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	1 Sites	1 Sites	100.0	0.0	0.0			
20-50 mi <sup>2</sup>	2 Sites	2 Sites						
						100	0	0
Principal Streams								
50-500 mi <sup>2</sup>	13.0 Miles	13.0 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)    Geometric Mean:  
No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

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

**WAU Comments**

A Watershed Management Plan prepared by a CWA Section 319 funded Watershed Coordinator under the direction of the Paint Creek watershed SWCDs (Ross, Fayette, Highland, Greene, Madison, and Clinton) is currently under development. Monitoring in support of the project was conducted in the upper Paint Creek watershed by the Ohio EPA in 1997.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 95.0  
 05060003 050              Paint Creek (downstream East Fork to upstream Rocky Fork); excluding  
    Sugar Cr. and Rattlesnake Cr.

**Integrated Report Assessment Category: 5**    **Priority Points: 3**  
**Next Scheduled Monitoring: 2006**

## 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams						0	100	0
50-500 mi <sup>2</sup>	5 Sites	20.4 Miles	0.0 Miles	0.00	100	0.00		

### High Magnitude Causes

Organic Enrichment/DO

### High Magnitude Sources

Major Municipal Point Source

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: No (1-Historical)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 31.92    Stream Miles Impaired: 31.92    Pollutants (Waterbody): PCBs (Paint Creek)  
 Lake Acres Monitored: 1190.0    Lake Acres Impaired: 0.0

## WAU Comments

A Watershed Management Plan prepared by a CWA Section 319 funded Watershed Coordinator under the direction of the Paint Creek watershed SWCDs (Ross, Fayette, Highland, Greene, Madison, and Clinton) is currently under development. Monitoring in support of the project was conducted in the upper Paint Creek watershed by the Ohio EPA in 1997. 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 144.0  
 05060003 060              Rocky Fork Paint Creek

**Integrated Report Assessment Category: 5**    **Priority Points: 3**  
**Next Scheduled Monitoring: 2006**

## 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 <sup>2</sup>	1 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites	66.7	33.3	0.0			
20-50 mi <sup>2</sup>	6 Sites	4 Sites				63	16	21
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	9.0 Miles	5.3 Miles	58.7	0.00	41.3			

### High Magnitude Causes

Cause Unknown  
 Organic Enrichment/DO  
 Direct Habitat Alterations

### High Magnitude Sources

Upstream Impoundment  
 Streambank Destabilization- Ag  
 Natural  
 Source Unknown

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: No (1-Historical)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: No (1)  
 Stream Miles Monitored: 1.00    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 2080.0    Lake Acres Impaired: 0.0

## WAU Comments

A Watershed Management Plan prepared by a CWA Section 319 funded Watershed Coordinator under the direction of the Paint Creek watershed SWCDs (Ross, Fayette, Highland, Greene, Madison, and Clinton) is currently under development. Monitoring in support of the project was conducted in the upper Paint Creek watershed by the Ohio EPA in 1997.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 122.0**

05060003 070

Paint Creek (downstream Rocky Fork to downstream Lower Twin Creek);  
excluding Paint Creek mainstem

**Integrated Report Assessment Category: 3**

**Priority Points:**

**Next Scheduled Monitoring: 2006**

**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

Waters Sampled: No      Impairment: Unknown (3)

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

Lake Acres Monitored: 0.0      Lake Acres Impaired: 0.0

**WAU Comments**

A Watershed Management Plan prepared by a CWA Section 319 funded Watershed Coordinator under the direction of the Paint Creek watershed SWCDs (Ross, Fayette, Highland, Greene, Madison, and Clinton) is currently under development. Monitoring in support of the project was conducted in the upper Paint Creek watershed by the Ohio EPA in 1997.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>):** 120.5

05060003 080

North Fork Paint Creek (headwaters to downstream Compton Creek)

**Integrated Report Assessment Category: 3**

**Priority Points:**

**Next Scheduled Monitoring: 2006**

**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**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**

A Watershed Management Plan prepared by a CWA Section 319 funded Watershed Coordinator under the direction of the Paint Creek watershed SWCDs (Ross, Fayette, Highland, Greene, Madison, and Clinton) is currently under development. Monitoring in support of the project was conducted in the upper Paint Creek watershed by the Ohio EPA in 1997.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 114.0**

05060003 090

North Fork Paint Creek (downstream Compton Creek to mouth)

**Integrated Report Assessment Category: 3**

**Priority Points:**

**Next Scheduled Monitoring: 2006**

**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

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

Stream Miles Monitored: 2.00 Stream Miles Impaired: 0.00 Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired: 0.0

**WAU Comments**

A Watershed Management Plan prepared by a CWA Section 319 funded Watershed Coordinator under the direction of the Paint Creek watershed SWCDs (Ross, Fayette, Highland, Greene, Madison, and Clinton) is currently under development. Monitoring in support of the project was conducted in the upper Paint Creek watershed by the Ohio EPA in 1997.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 67.3  
 05060003 100              Paint Creek (downstream Lower Twin Creek to mouth); excluding North  
    Fork and Paint Creek mainstem

**Integrated Report Assessment Category: 3**    **Priority Points:**  
**Next Scheduled Monitoring: 2006**

**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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
 Impairment: Unknown (3-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

**Fish Tissue Assessment**

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

**WAU Comments**

A Watershed Management Plan prepared by a CWA Section 319 funded Watershed Coordinator under the direction of the Paint Creek watershed SWCDs (Ross, Fayette, Highland, Greene, Madison, and Clinton) is currently under development. Monitoring in support of the project was conducted in the upper Paint Creek watershed by the Ohio EPA in 1997.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	3 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	9 Sites	4 Sites	77.8	5.6	16.6			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						39	53	8
Principal Streams								
50-500 mi <sup>2</sup>	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)    Geometric Mean:  
No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: No (1)  
Stream Miles Monitored: 0.00    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 5104.0    Lake Acres Impaired: 0.0

**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.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	1 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	2 Sites	2 Sites	100.0	0.0	0.0			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						50	50	0
Principal Streams								
50-500 mi <sup>2</sup>	4.8 Miles	0.0 Miles	0.00	100	0.00			

High Magnitude Causes

Siltation  
Direct Habitat Alterations

High Magnitude Sources

Nonirrigated Crop Production  
Channelization - Agriculture

**Recreation Use Assessment**

Subcategory of Use:    Primary Contact  
Impairment:    Yes (5-Historical)    Geometric Mean:  
No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
Stream Miles Monitored:    2.00    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
Lake Acres Monitored:    0.0    Lake Acres Impaired:    0.0

**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.



# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	2 Sites	2 Sites	100.0	0.0	0.0			
20-50 mi <sup>2</sup>	Sites	Sites				98	2	0
Principal Streams								
50-500 mi <sup>2</sup>	15.2 Miles	14.6 Miles	96.0	4.00	0.00			

### 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)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## 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: 0.0

## 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.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 147.4  
 05080001 050              Loramie Creek (headwaters to downstream Mile Creek)

**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 <sup>2</sup>	2 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	2 Sites	0 Sites	0.0	0.0	100			
20-50 mi <sup>2</sup>	1 Sites	0 Sites						
						0	17	83
Principal Streams								
50-500 mi <sup>2</sup>	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:    Unknown (3-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

Waters Sampled:    Yes    Impairment:    Unknown (3-Indeterminate Data)  
 Stream Miles Monitored:    0.00    Stream Miles Impaired:    0.00    Pollutants (Waterbody):  
 Lake Acres Monitored:    785.0    Lake Acres Impaired:    0.0

## 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.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	1 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	1 Sites	0 Sites	0.0	0.0	100			
20-50 mi <sup>2</sup>	Sites	Sites						
						11	9	80
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	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)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

## 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.





# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	14 Sites	5 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	11 Sites	5 Sites	56.1	9.1	34.8			
20-50 mi <sup>2</sup>	3 Sites	2 Sites						
						63	14	23
Principal Streams								
50-500 mi <sup>2</sup>	6 Sites							
	21.8 Miles	15.1 Miles	69.3	18.4	12.3			

### High Magnitude Causes

Nutrients  
 Organic Enrichment/DO  
 Direct Habitat Alterations

### High Magnitude Sources

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)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: No (1)  
 Stream Miles Monitored: 5.32    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 121.4  
 05080001 100              Stillwater River (upstream Swamp Creek to upstream Greenville Creek)

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

## Aquatic Life Use Assessment

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

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	8 Sites	3 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	13 Sites	5 Sites	19.3	52.5	28.2			
20-50 mi <sup>2</sup>	3 Sites	0 Sites						
						41	40	19
Principal Streams								
50-500 mi <sup>2</sup>	7 Sites							
	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)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: No (1)  
 Stream Miles Monitored: 13.50    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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](http://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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 70.1  
 05080001 110              Greenville Creek (headwaters to downstream West Branch)

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

## Aquatic Life Use Assessment

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

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	1 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	8 Sites	6 Sites	87.5	6.3	6.2			
20-50 mi <sup>2</sup>	2 Sites	2 Sites				94	3	3
Principal Streams								
50-500 mi <sup>2</sup>	16.2 Miles	16.2 Miles	100	0.00	0.00			

### High Magnitude Causes

Organic Enrichment/DO  
 Direct Habitat Alterations

### High Magnitude Sources

Channelization - Agriculture

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (5-Historical)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

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

## 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](http://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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 97.6  
05080001 120              Greenville Creek (downstream West Branch to mouth)

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

## Aquatic Life Use Assessment

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

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	8 Sites	5 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	8 Sites	8 Sites	100.0	0.0	0.0			
20-50 mi <sup>2</sup>	2 Sites	2 Sites						
						75	18	7
Principal Streams								
50-500 mi <sup>2</sup>	11 Sites							
	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)    Geometric Mean:  
No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 31.40    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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](http://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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 92.8  
 05080001 130              Stillwater River (downstream Greenville Cr. to upstream Ludlow Cr.);  
 excluding Stillwater R mainstem

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

### Aquatic Life Use Assessment

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

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	8 Sites	4 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites	25.0	39.6	35.4			
20-50 mi <sup>2</sup>	3 Sites	0 Sites						
						25	40	35
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	0.0 Miles	0.0 Miles	47.0	0.00	53.0			

#### High Magnitude Causes

Organic Enrichment/DO  
 Direct Habitat Alterations

#### High Magnitude Sources

Minor Municipal Point Source  
 Combined Sewer Overflows  
 Animal Holding/Management Areas  
 Channelization - Agriculture

### Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (5-Historical)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

### Fish Tissue Assessment

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

### 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](http://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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 148.0  
 05080001 140              Stillwater River (upstream Ludlow Creek to mouth); excluding Stillwater  
    R. mainstem

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

## Aquatic Life Use Assessment

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

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	4 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	6 Sites	4 Sites	83.3	8.3	8.4			
20-50 mi <sup>2</sup>	5 Sites	5 Sites						
						83	8	9
Principal Streams								
50-500 mi <sup>2</sup>	10 Sites							
	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)    Geometric Mean:  
 No. Ambient Sites:                                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:                              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

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

## 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](http://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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	2 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	12 Sites	11 Sites	88.0	12.0	0.0			
20-50 mi <sup>2</sup>	5 Sites	4 Sites				94	6	0
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	7.9 Miles	7.9 Miles	100	0.00	0.00			

### High Magnitude Causes

Direct Habitat Alterations

### High Magnitude Sources

Channelization - Agriculture

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 589  
 No. Ambient Sites: 6    No. Ambient Sampling Records: 30    75<sup>th</sup> %ile: 758  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 16    90<sup>th</sup> %ile: 2050  
 Other:

## 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: 0.0

## 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 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	8 Sites	5 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	14 Sites	11 Sites	72.8	17.9	9.3			
20-50 mi <sup>2</sup>	4 Sites	3 Sites						
						86	9	5
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	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)    Geometric Mean: 160  
 No. Ambient Sites: 9    No. Ambient Sampling Records: 45    75<sup>th</sup> %ile: 725  
 No. of NPDES MOR Sites: 2    No. of NPDES MOR Records: 73    90<sup>th</sup> %ile: 2350  
 Other:

## 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: 0.0

## 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 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 140.6  
05080001 170              Buck Creek

**Integrated Report Assessment Category: 5**    **Priority Points: 8**  
**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries			100.0	0.0	0.0			
5-20 mi <sup>2</sup>	5 Sites	5 Sites						
20-50 mi <sup>2</sup>	4 Sites	4 Sites				80	20	0
Principal Streams	2 Sites							
50-500 mi <sup>2</sup>	8.8 Miles	5.2 Miles	49.3	50.7	0.00			

High Magnitude Causes

Direct Habitat Alterations  
Flow Alteration

High Magnitude Sources

Upstream Impoundment

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: Yes (5)    Geometric Mean: 591  
No. Ambient Sites: 3    No. Ambient Sampling Records: 15    75<sup>th</sup> %ile: 3850  
No. of NPDES MOR Sites: 0    No. of NPDES MOR Records: 0    90<sup>th</sup> %ile: 17880  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 4.60    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 2220.0    Lake Acres Impaired: 0.0

**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 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 128.2**  
 05080001 180              Mad River (downstream Chapman Creek to upstream Mud Creek);  
 excluding Buck Cr. and Mad R. mainstem

**Integrated Report Assessment Category: 5**    **Priority Points: 9**  
**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 <sup>2</sup>	3 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	12 Sites	9 Sites	60.5	37.5	2.0			
20-50 mi <sup>2</sup>	2 Sites	1 Sites						
						67	32	1
Principal Streams								
50-500 mi <sup>2</sup>	14.2 Miles	10.3 Miles	72.5	27.5	0.00			

### High Magnitude Causes

Direct Habitat Alterations  
 Unionized Ammonia  
 Organic Enrichment/DO  
 Metals  
 Priority Organics  
 Flow Alteration

### High Magnitude Sources

Channelization - Agriculture  
 Channelization - Development  
 Major Industrial Point Source  
 Contaminated Sediments  
 Natural

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 692  
 No. Ambient Sites: 8    No. Ambient Sampling Records: 60    75<sup>th</sup> %ile: 1147  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 10    90<sup>th</sup> %ile: 4320  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 14.20    Stream Miles Impaired: 14.20    Pollutants (Waterbody): PCBs (Mad River)  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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 the Mad River from Chapman Creek to Donnels Creek, Moore Run, and Donnels 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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 100.4  
 05080001 190              Mad River (upstream Mud Creek to mouth); excluding Mad R. mainstem

**Integrated Report Assessment Category: 5**    **Priority Points: 8**  
**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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	10 Sites	6 Sites	67.5	17.5	15.0			
20-50 mi <sup>2</sup>	4 Sites	3 Sites				68	17	15
Principal Streams								
50-500 mi <sup>2</sup>	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)    Geometric Mean: 845  
 No. Ambient Sites: 7    No. Ambient Sampling Records: 35    75<sup>th</sup> %ile: 2450  
 No. of NPDES MOR Sites: 0    No. of NPDES MOR Records: 0    90<sup>th</sup> %ile: 14320  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 0.00    Stream Miles Impaired: 0.00    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](http://www.epa.state.oh.us/dsw/document_index/psdindx.html).

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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    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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
 Impairment: No (1)    Geometric Mean: 363  
 No. Ambient Sites: 10                                      No. Ambient Sampling Records: 18                      75<sup>th</sup> %ile: 631  
 No. of NPDES MOR Sites: 1                              No. of NPDES MOR Records: 120                      90<sup>th</sup> %ile: 1421  
 Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 2.00    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 143.7  
 05080002 010              Great Miami River (downstream Mad River to upstream Bear Creek);  
 excluding GMR mainstem

**Integrated Report Assessment Category: 5**    **Priority Points: 4**  
**Next Scheduled Monitoring: 2010**

**Aquatic Life Use Assessment**

Subcategories of ALU:    WWH,LRW    Sampling Year(s):    1995, 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 <sup>2</sup>	3 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	4 Sites	2 Sites	20.8	39.6	39.6			
20-50 mi <sup>2</sup>	2 Sites	0 Sites						
						41	35	24
Principal Streams								
50-500 mi <sup>2</sup>	9 Sites							
	5.2 Miles	3.2 Miles	61.3	31.1	7.60			

High Magnitude Causes

Pesticides  
 Priority Organics  
 Other Inorganics  
 Nutrients  
 Siltation  
 Flow Alteration  
 Direct Habitat Alterations  
 Oil and Grease

High Magnitude Sources

Major Industrial Point Source  
 Municipal Point Source  
 Highway/Roads/Bridge/Sewer Line  
 Urban Runoff/Storm Sewers (NPS)  
 Highway Maintenance and Runoff  
 Contaminated Sediments  
 Spills

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
 Impairment: Unknown (3-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 5.30    Stream Miles Impaired: 3.30    Pollutants (Waterbody): PCBs (Wolf Creek)  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**



# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 157.3**

05080002 030

Twin Creek (headwaters to upstream Bantas Fork)

**Integrated Report Assessment Category: 5**

**Priority Points: 9**

**Next Scheduled Monitoring: 2019**

## Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH

Sampling Year(s): 1995

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 <sup>2</sup>	Sites							
Primary Tributaries	Sites		58.3	25.0	16.7			
5-20 mi <sup>2</sup>	12 Sites	6 Sites						
20-50 mi <sup>2</sup>	6 Sites	4 Sites				64	28	8
Principal Streams								
50-500 mi <sup>2</sup>	8 Sites	8.4 Miles	70.0	30.0	0.00			

### High Magnitude Causes

Nutrients  
Siltation  
Organic Enrichment/DO  
Natural Limits (Wetlands)

### High Magnitude Sources

Municipal Point Sources  
Nonirrigated Crop Production  
Land Development/Suburbanization  
Onsite Wastewater Sysytems (Septic Tanks)  
Natural

## Recreation Use Assessment

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Geometric Mean: 272

No. Ambient Sites: 11

No. Ambient Sampling Records: 50

75<sup>th</sup> %ile: 778

No. of NPDES MOR Sites: 4

No. of NPDES MOR Records: 84

90<sup>th</sup> %ile: 2640

Other:

## Fish Tissue Assessment

Waters Sampled: Yes Impairment: Yes (5)

Stream Miles Monitored: 11.18 Stream Miles Impaired: 11.18 Pollutants (Waterbody): PCBs (Twin Creek)

Lake Acres Monitored: 0.0 Lake Acres Impaired: 0.0

## WAU Comments

Intensive chemical, physical, and biological monitoring was conducted in the Twin Creek basin in 2005. 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 this report but will be the basis for the TMDL and 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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):    1995  
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 <sup>2</sup>	7 Sites	7 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	7 Sites	4 Sites	89.3	10.7	0.0			
20-50 mi <sup>2</sup>	5 Sites	5 Sites						
						95	5	0
Principal Streams								
50-500 mi <sup>2</sup>	10 Sites							
	25.0 Miles	25.0 Miles	100	0.00	0.00			

High Magnitude Causes

Nutrients

High Magnitude Sources

Municipal Point Sources  
Nonirrigated Crop Production

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: Yes (5)    Geometric Mean: 373  
No. Ambient Sites: 10    No. Ambient Sampling Records: 44    75<sup>th</sup> %ile: 720  
No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 20    90<sup>th</sup> %ile: 3140  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Yes (5)  
Stream Miles Monitored: 24.32    Stream Miles Impaired: 24.32    Pollutants (Waterbody): PCBs (Twin Creek)  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**

Intensive chemical, physical, and biological monitoring was conducted in the Twin Creek basin in 2005. 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 this report but will be the basis for the TMDL and 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	2 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	7 Sites	7 Sites	100.0	0.0	0.0			
20-50 mi <sup>2</sup>	5 Sites	5 Sites						
						100	0	0
Principal Streams								
50-500 mi <sup>2</sup>	6 Sites							
	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)    Geometric Mean: 308  
No. Ambient Sites: 34                                      No. Ambient Sampling Records: 169                      75<sup>th</sup> %ile: 650  
No. of NPDES MOR Sites: 4                              No. of NPDES MOR Records: 114                      90<sup>th</sup> %ile: 1482  
Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: No (1)  
Stream Miles Monitored: 13.20    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 54.0    Lake Acres Impaired: 0.0

**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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 160.6  
 05080002 070              Fourmile Creek (excluding Sevenmile Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 2**  
**Next Scheduled Monitoring: 2020**

## 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 <sup>2</sup>	4 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites	75.0	0.0	25.0			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						85	3	12
Principal Streams								
50-500 mi <sup>2</sup>	38.2 Miles	36.2 Miles	94.8	5.20	0.00			

### High Magnitude Causes

Unionized Ammonia  
 Organic Enrichment/DO  
 Flow Alteration  
 Suspended Solids

### High Magnitude Sources

Major Industrial Point Source  
 Major Municipal Point Source  
 Nonirrigated Crop Production  
 Natural  
 Upstream Impoundment

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: No (1)    Geometric Mean: 208  
 No. Ambient Sites: 15    No. Ambient Sampling Records: 70    75<sup>th</sup> %ile: 311  
 No. of NPDES MOR Sites: 2    No. of NPDES MOR Records: 81    90<sup>th</sup> %ile: 1200  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: No (1)  
 Stream Miles Monitored: 19.30    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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. Available 2005 bacteria data indicated no impairment of the recreation use. 2005 biological and chemical data for assessment of aquatic life uses were not available for this report but will be the basis for the TMDL and 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**  
05080002 080

**WAU Description**  
Indian Creek

**WAU Size (mi<sup>2</sup>):** 71.9

**Integrated Report Assessment Category: 2**  
**Next Scheduled Monitoring: 2019**

**Priority Points:**

**Aquatic Life Use Assessment**

Subcategories of ALU: EWH  
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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: No (1)

No. Ambient Sites: 5

No. Ambient Sampling Records: 24

Geometric Mean: 266

75<sup>th</sup> %ile: 548

No. of NPDES MOR Sites: 1

No. of NPDES MOR Records: 21

90<sup>th</sup> %ile: 900

Other:

**Fish Tissue Assessment**

Waters Sampled: No    Impairment: Unknown (3)

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

Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**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. Available 2005 bacteria data indicated no impairment of the recreation use. 2005 biological and chemical data for assessment of aquatic life uses were not available for this report but will be the basis for the TMDL and 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 166.2  
 05080002 090              Great Miami River (downstream Fourmile Creek to mouth); excluding  
    Indian Creek and GMR mainstem

**Integrated Report Assessment Category: 5**    **Priority Points: 2**  
**Next Scheduled Monitoring: 2010**

### Aquatic Life Use Assessment

Subcategories of ALU:    WWH    Sampling Year(s): 1995, 1996, 1997, 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 <sup>2</sup>	4 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	4 Sites	1 Sites	25.0	12.5	62.5			
20-50 mi <sup>2</sup>	Sites	Sites						
						25	13	62
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

#### High Magnitude Causes

Cause Unknown  
 Flow Alteration  
 Direct Habitat Alterations

#### High Magnitude Sources

Land Development/Suburbanization  
 Urban Runoff/Storm Sewers (NPS)  
 Removal of Riparian Vegetation - Dev.  
 Natural

### Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Unknown (3-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

### Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 3.20    Stream Miles Impaired: 3.20    Pollutants (Waterbody): PCBs (Hamilton/Ford Hydraulic Canal)  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

### WAU Comments

Recent tributary data within this watershed is limited. Paddys Run was sampled recently, but all other tributaries (Taylor Creek basin) have data which are over 10 years old. One biological reference site on Bluerock Creek was sampled in 1996.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>):** 70.6

05080003 070

East Fork Whitewater River

**Integrated Report Assessment Category: 5**

**Priority Points: 6**

**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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Yes (5)

Geometric Mean: 1187

No. Ambient Sites: 0

No. Ambient Sampling Records: 0

75<sup>th</sup> %ile: 3125

No. of NPDES MOR Sites: 3

No. of NPDES MOR Records: 28

90<sup>th</sup> %ile: 6590

Other:

**Fish Tissue Assessment**

Waters Sampled: No      Impairment: Unknown (3)

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

Lake Acres Monitored: 0.0      Lake Acres Impaired: 0.0

**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 indicate an impairment of the Primary Contact Recreation use in the assessment unit which resulted in the Category 5 listing.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 74.7  
 05080003 080              Whitewater River (downstream East Fork Whitewater R. [IN] to mouth);  
 excluding Whitewater R mainstem

**Integrated Report Assessment Category: 2**    **Priority Points:**  
**Next Scheduled Monitoring: 2010**

**Aquatic Life Use Assessment**

Subcategories of ALU:    EWH,WWH    Sampling Year(s):    1995, 1996  
 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries			100.0	0.0	0.0			
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	2 Sites	2 Sites				100	0	0
Principal Streams	4 Sites							
50-500 mi <sup>2</sup>	9.0 Miles	9.0 Miles	100	0.00	0.00			

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

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

**WAU Comments**



# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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, 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 <sup>2</sup>	8 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	5 Sites	1 Sites	8.1	27.9	64.0			
20-50 mi <sup>2</sup>	3 Sites	0 Sites						
						28	40	32
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	22.4 Miles	10.5 Miles	46.9	53.1	0.00			

### High Magnitude Causes

Metals  
 Zinc  
 Iron  
 Aluminum  
 Other Metals  
 pH  
 Siltation  
 Direct Habitat Alterations

### High Magnitude Sources

Nonirrigated Crop Production  
 Surface Mining  
 Acid Mine Drainage  
 Natural

## Recreation Use Assessment

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

## Fish Tissue Assessment

Waters Sampled: Yes      Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 0.00      Stream Miles Impaired: 0.00      Pollutants (Waterbody):  
 Lake Acres Monitored: 127.0      Lake Acres Impaired: 0.0

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	25 Sites	9 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	12 Sites	4 Sites	29.8	51.9	18.3			
20-50 mi <sup>2</sup>	4 Sites	1 Sites						
						41	50	9
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	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)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

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

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	15 Sites	5 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	6 Sites	2 Sites	33.3	18.4	48.3			
20-50 mi <sup>2</sup>	Sites	Sites						
						27	49	24
Principal Streams								
50-500 mi <sup>2</sup>	3 Sites							
	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)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes      Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 2.65      Stream Miles Impaired: 0.00      Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0      Lake Acres Impaired: 0.0

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	8 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	4 Sites	0 Sites	0.0	6.3	93.7			
20-50 mi <sup>2</sup>	Sites	Sites						
						0	53	47
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

### High Magnitude Causes

Metals                      Organic Enrichment/ DO  
 Nickel                      Salinity/TDS/Chlorides  
 Iron                          Thermal Modifications  
 Aluminum                  Direct Habitat Alterations  
 Other Metals  
 Nutrients  
 pH  
 Siltation

### High Magnitude Sources

Minor Industrial Point Source              Source Unknown  
 Major Municipal Point Source  
 Nonirrigated Crop Production  
 Pasture Land  
 Confined Animal Feeding Operations (NPS)  
 Mine Tailings  
 Acid Mine Drainage  
 Removal of Riparian Vegetation - Ag.

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: No (1)    Geometric Mean: 388  
 No. Ambient Sites: 1    No. Ambient Sampling Records: 4    75<sup>th</sup> %ile: 766  
 No. of NPDES MOR Sites: 2    No. of NPDES MOR Records: 257    90<sup>th</sup> %ile: 1600  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes      Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 27.60      Stream Miles Impaired: 0.00      Pollutants (Waterbody):  
 Lake Acres Monitored: 388.0      Lake Acres Impaired: 0.0

## WAU Comments

A watershed action plan for this assessment unit has been endorsed by the Ohio EPA and Ohio DNR.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 140.8  
 05090101 060              Raccoon Creek (downstream Little Raccoon Creek to mouth); excluding  
    Raccoon Creek mainstem

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**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 <sup>2</sup>	4 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	6 Sites	3 Sites	37.5	8.3	54.2			
20-50 mi <sup>2</sup>	Sites	Sites						
						38	8	54
Principal Streams								
50-500 mi <sup>2</sup>	Sites	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  
 Impairment: Unknown (3-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 0.00    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 204.0    Lake Acres Impaired: 0.0

## WAU Comments

A watershed action plan for this assessment unit has been endorsed by the Ohio EPA and Ohio DNR.



**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Unknown (3-Indeterminate Data)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

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

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

Lake Acres Monitored: 243.0 Lake Acres Impaired: 0.0

**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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 100.3  
05090101 090              Symmes Creek (downstream Black Fork to downstream Buffalo 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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams								
50-500 mi <sup>2</sup>	Miles							

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
Stream Miles Monitored: 2.00    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 151.5  
 05090101 100              Symmes Creek (downstream Buffalo Creek to mouth); Ohio River  
    tributaries (Symmes Cr. to Big Sandy R)

**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

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

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 130.4  
 05090103 010              Ohio River tributaries (downstream Big Sandy River [WV] to upstream  
                                  Pine Creek)

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

**Aquatic Life Use Assessment**

Subcategories of ALU:    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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Historical Data)  
 Stream Miles Monitored: 0.00    Stream Miles Impaired:                      Pollutants (Waterbody):  
 Lake Acres Monitored: 105.0    Lake Acres Impaired:

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 184.2**  
 05090103 020              Pine Creek

**Integrated Report Assessment Category: 5**    **Priority Points: 4**  
**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 <sup>2</sup>	6 Sites	4 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	1 Sites	0 Sites	36.6	20.0	43.4			
20-50 mi <sup>2</sup>	5 Sites	2 Sites						
						68	10	22
Principal Streams								
50-500 mi <sup>2</sup>	2 Sites							
	4.0 Miles	4.0 Miles	100	0.00	0.00			

High Magnitude Causes

Metals  
 pH  
 Siltation  
 Salinity/TDS/Chlorides

High Magnitude Sources

Surface Mining  
 Mine Tailings  
 Acid Mine Drainage

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
 Impairment: Unknown (3-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 24.40    Stream Miles Impaired: 24.40    Pollutants (Waterbody): PCBs (Pine Creek)  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**

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.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

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

Stream Miles Monitored: 15.05 Stream Miles Impaired: 0.00 Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired: 0.0

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 152.2**  
 05090103 040              Little Scioto River (upst. Rocky Fork to mouth); Ohio R. tribs. (dst Pine Cr.  
    to dst 8-digit divide)

**Integrated Report Assessment Category: 5**    **Priority Points: 4**  
**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
 Impairment: Yes (5-Historical)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 5.45    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**WAU Comments**

No recent biological community and water quality data were available for this assessment unit to determine status of beneficial uses. As such, this assessment unit was listed as Category 3 (unassessed) in the 2002 Integrated Report. However, the 2004 Integrated Report assessment of available bacteria data indicated an impairment of the Primary Contact Recreation use in the assessment unit which resulted in the Category 5 listing. While the bacteria data are now historical, the assessment unit will remain Category 5 until TMDLs are completed and approved for all pollutants impairing beneficial uses.



**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	2 Sites	2 Sites	87.5	12.5	0.0			
20-50 mi <sup>2</sup>	4 Sites	3 Sites				88	12	0
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

Nutrients

High Magnitude Sources

Nonirrigated Crop Production

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: Unknown (3-Indeterminate Data)    Geometric Mean:  
No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

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

**WAU Comments**

Only biological reference sites have been sampled since 1987.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 134.1**

05090201 040

West Fork Ohio Brush Creek

**Integrated Report Assessment Category: 5**

**Priority Points: 8**

**Next Scheduled Monitoring: 2007**

**Aquatic Life Use Assessment**

Subcategories of ALU: EWH,WWH

Sampling Year(s): 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries			90.0	0.0	10.0			
5-20 mi <sup>2</sup>	5 Sites	4 Sites						
20-50 mi <sup>2</sup>	3 Sites	3 Sites						
Principal Streams	8 Sites					95	0	5
50-500 mi <sup>2</sup>	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)

Geometric Mean: 1302

No. Ambient Sites: 2

No. Ambient Sampling Records: 6

75<sup>th</sup> %ile: 5175

No. of NPDES MOR Sites: 2

No. of NPDES MOR Records: 22

90<sup>th</sup> %ile: 7290

Other:

**Fish Tissue Assessment**

Waters Sampled: No      Impairment: Unknown (3)

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

Lake Acres Monitored: 0.0      Lake Acres Impaired: 0.0

**WAU Comments**

Only biological reference sites have been sampled since 1987. Some nonattainment is due to natural low flow conditions.



**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 67.9  
05090201 060              Ohio River tributaries (downstream Ohio Brush Creek to upstream Eagle Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Yes (5)  
Stream Miles Monitored: 1.30    Stream Miles Impaired: 1.30    Pollutants (Waterbody): PCBs (Little Threemile Creek)  
Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

**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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>): 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 <sup>2</sup>	2 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites	100.0	0.0	0.0			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						88	12	0
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	12.5 Miles	9.5 Miles	75.9	24.1	0.00			

High Magnitude Causes

Cause Unknown  
Nutrients

High Magnitude Sources

Nonirrigated Crop Production  
Source Unknown

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: Unknown (3)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

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

Stream Miles Monitored: 16.90 Stream Miles Impaired: 0.00 Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired: 0.0

**WAU Comments**



**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 147.4  
05090201 090              East Fork Whiteoak Creek; North Fork Whiteoak Creek

**Integrated Report Assessment Category: 5**    **Priority Points: 3**  
**Next Scheduled Monitoring: 2006**

**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries			50.0	0.0	50.0			
5-20 mi <sup>2</sup>	2 Sites	0 Sites						
20-50 mi <sup>2</sup>	1 Sites	1 Sites				75	0	25
Principal Streams	4 Sites							
50-500 mi <sup>2</sup>	0.0 Miles	0.0 Miles	100	0.00	0.00			

High Magnitude Causes

Organic Enrichment/DO  
Flow Alteration

High Magnitude Sources

Minor Municipal Point Source  
Natural

**Recreation Use Assessment**

Subcategory of Use: Primary Contact  
Impairment: Unknown (3-Indeterminate Data)    Geometric Mean:  
No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

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

**WAU Comments**

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>):** 87.9

05090201 100

Whiteoak Creek (North Fork/East Fork to mouth)

**Integrated Report Assessment Category: 5**

**Priority Points: 2**

**Next Scheduled Monitoring: 2006**

**Aquatic Life Use Assessment**

Subcategories of ALU: EWH,WWH,LRW

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 <sup>2</sup>	4 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	1 Sites	0 Sites	62.5	0.0	37.5			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						31	50	19
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	0.0 Miles	0.0 Miles	0.00	100	0.00			

High Magnitude Causes

Nutrients  
Siltation  
Flow Alteration

High Magnitude Sources

Minor Municipal Point Source  
Nonirrigated Crop Production

**Recreation Use Assessment**

Subcategory of Use: Primary Contact

Impairment: No (1-Historical)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

Waters Sampled: Yes Impairment: No (1)

Stream Miles Monitored: 20.60 Stream Miles Impaired: 0.00 Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired: 0.0

**WAU Comments**



# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 108.2  
 05090201 120              Ohio River tributaries (upstream Big Indian Run to upstream Little Miami River)

**Integrated Report Assessment Category: 5**    **Priority Points: 3**  
**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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	4 Sites	2 Sites	75.0	13.0	12.0			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						75	13	12
Principal Streams								
50-500 mi <sup>2</sup>	Miles	Miles						

### High Magnitude Causes

Cause Unknown

### High Magnitude Sources

Source Unknown

## Recreation Use Assessment

Subcategory of Use:    Primary Contact  
 Impairment:    Unknown (3-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:                      No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

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

## WAU Comments

Data from 1997 were reevaluated for the 2004 Integrated Report. Corrected statistics indicated that the aquatic life use status should be changed from Category 2 (unimpaired), as listed in the 2002 Integrated Report, to Category 5 (impaired).

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 129.6  
 05090202 010              Little Miami River (headwaters to upstream Massies Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**Next Scheduled Monitoring: 2017**

## Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH    Sampling Year(s): 1998  
 Impairment: Yes (4A)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	3 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	8 Sites	5 Sites	74.0	9.4	16.6			
20-50 mi <sup>2</sup>	3 Sites	3 Sites						
						37	32	31
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	14.4 Miles	0.0 Miles	0.00	54.2	45.8			

### High Magnitude Causes

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

### High Magnitude Sources

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)    Geometric Mean: 325  
 No. Ambient Sites: 2    No. Ambient Sampling Records: 29    75<sup>th</sup> %ile: 590  
 No. of NPDES MOR Sites: 3    No. of NPDES MOR Records: 37    90<sup>th</sup> %ile: 1370  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Yes (5)  
 Stream Miles Monitored: 1.65    Stream Miles Impaired: 1.65    Pollutants (Waterbody): PCBs (Little Miami River)  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	2 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	11 Sites	6 Sites	47.6	21.4	31.0			
20-50 mi <sup>2</sup>	7 Sites	3 Sites						
						59	19	22
Principal Streams								
50-500 mi <sup>2</sup>	2 Sites							
50-500 mi <sup>2</sup>	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  
 Pathogens

### 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)    Geometric Mean: 390  
 No. Ambient Sites: 9    No. Ambient Sampling Records: 51    75<sup>th</sup> %ile: 648  
 No. of NPDES MOR Sites: 4    No. of NPDES MOR Records: 327    90<sup>th</sup> %ile: 2400  
 Other:

## 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: 0.0    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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 119.2  
 05090202 030              Little Miami River (downstream Beaver Creek to upstream Caesar Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**Next Scheduled Monitoring: 2017**

## Aquatic Life Use Assessment

Subcategories of ALU: EWH,WWH    Sampling Year(s): 1998  
 Impairment: Yes (4A)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	3 Sites	3 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	6 Sites	5 Sites	95.8	0.0	4.2			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						63	35	2
Principal Streams								
50-500 mi <sup>2</sup>	10 Sites							
	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)    Geometric Mean: 311  
 No. Ambient Sites: 3    No. Ambient Sampling Records: 11    75<sup>th</sup> %ile: 513  
 No. of NPDES MOR Sites: 3    No. of NPDES MOR Records: 139    90<sup>th</sup> %ile: 1098  
 Other:

## 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: 0.0

## 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**

**WAU Description**

**WAU Size (mi<sup>2</sup>):** 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)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	1 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	4 Sites	3 Sites	62.5	12.5	25.0			
20-50 mi <sup>2</sup>	2 Sites	1 Sites						
						31	56	13
Principal Streams								
50-500 mi <sup>2</sup>	2 Sites							
	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)

Geometric Mean:

No. Ambient Sites:

No. Ambient Sampling Records:

75<sup>th</sup> %ile:

No. of NPDES MOR Sites:

No. of NPDES MOR Records:

90<sup>th</sup> %ile:

Other:

**Fish Tissue Assessment**

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

Stream Miles Monitored: 2.00 Stream Miles Impaired: 0.00 Pollutants (Waterbody):

Lake Acres Monitored: 0.0 Lake Acres Impaired: 0.0

**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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 147.9  
 05090202 050              Caesar Creek (excluding Anderson Fork)

**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 <sup>2</sup>	1 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	2 Sites	1 Sites	75.0	25.0	0.0			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						77	17	6
Principal Streams								
50-500 mi <sup>2</sup>	22.6 Miles	18.0 Miles	79.7	9.20	11.1			

### High Magnitude Causes

Cause Unknown  
 Nutrients  
 Siltation  
 Organic Enrichment/DO  
 Pathogens

### 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)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: No (1)  
 Stream Miles Monitored: 16.90    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 2830.0    Lake Acres Impaired: 0.0

## 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 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    Sampling Year(s):    1998  
 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 <sup>2</sup>	Sites	Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites	Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	Miles	Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

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

**WAU Comments**

A small amount of data were collected in this watershed, but there are not enough sampling locations to do a complete assessment. Reference sites on Newman Run and Mill Run were sampled in 1998.

**Ohio EPA 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>): 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    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 <sup>2</sup>	2 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	4 Sites	1 Sites	31.3	12.5	56.2			
20-50 mi <sup>2</sup>	4 Sites	2 Sites						
						62	8	30
Principal Streams								
50-500 mi <sup>2</sup>	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)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: No (1)  
 Stream Miles Monitored: 23.03    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 688.0    Lake Acres Impaired: 0.0

**WAU Comments**

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 114.6  
 05090202 080              Todd Fork (upstream East Fork Todd Fork to mouth)

**Integrated Report Assessment Category: 5**    **Priority Points: 3**  
**Next Scheduled Monitoring: 2007**

## 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 <sup>2</sup>	Sites							
Primary Tributaries								
5-20 mi <sup>2</sup>	Sites							
20-50 mi <sup>2</sup>	Sites							
Principal Streams						82	18	0
50-500 mi <sup>2</sup>	3 Sites							
	14.1 Miles	11.5 Miles	81.5	18.5	0.00			

### High Magnitude Causes

Nutrients

### High Magnitude Sources

Municipal Point Sources

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Unknown (3-Indeterminate Data)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 8.57    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## WAU Comments

The water quality of Todd Fork in this assessment unit is strongly influenced by nutrient loadings from the Wilmington WWTP (via Lytle Creek). Nitrate-nitrogen and total phosphorus increased in Todd Fork downstream from Lytle Creek from concentrations within background levels for the ecoregion to concentrations either approaching or exceeding the 90th percentile of reference sites of similar size in the ecoregion. Impacts to the fish community were realized in the lower 5.0 miles of Todd Fork due to excessive nutrients. The impacts were caused by algal production and respiration as inferred by the assimilation of nutrients, and variable and supersaturating dissolved oxygen concentrations occurring in that reach. The site was listed as Category 4B in the 2002 and 2004 Integrated Reports but, after conferral with U.S. EPA Region 5, it is being reassessed as Category 5 in the 2006 report. The watershed is next scheduled for extensive monitoring in 2007.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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: 7**  
**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 <sup>2</sup>	3 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	8 Sites	3 Sites	34.4	42.7	22.9			
20-50 mi <sup>2</sup>	2 Sites	1 Sites						
						67	21	12
Principal Streams								
50-500 mi <sup>2</sup>	2 Sites							
	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 Sources  
 Upstream Impoundment  
 Natural

## Recreation Use Assessment

Subcategory of Use: Primary Contact  
 Impairment: Yes (5)    Geometric Mean: 298  
 No. Ambient Sites: 0    No. Ambient Sampling Records: 0    75<sup>th</sup> %ile: 799  
 No. of NPDES MOR Sites: 4    No. of NPDES MOR Records: 188    90<sup>th</sup> %ile: 2000  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 1.30    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	1 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	3 Sites	0 Sites	16.7	58.3	25.0			
20-50 mi <sup>2</sup>	3 Sites	1 Sites						
						33	54	13
Principal Streams								
50-500 mi <sup>2</sup>	2 Sites							
	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)    Geometric Mean: 484  
 No. Ambient Sites: 3    No. Ambient Sampling Records: 12    75<sup>th</sup> %ile: 1145  
 No. of NPDES MOR Sites: 1    No. of NPDES MOR Records: 18    90<sup>th</sup> %ile: 2173  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: No (1)  
 Stream Miles Monitored: 18.80    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## WAU Comments

A watershed action plan for this assessment unit has been endorsed by the Ohio EPA and Ohio DNR. The U.S. EPA has awarded a grant to Clermont County to complete TMDLs for the East Fork Little Miami River watershed by 2006.



# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 123.1  
 05090202 120              East Fork Little Miami River (upstream Cloverlick Creek to upstream Stonelick Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 1**  
**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 <sup>2</sup>	6 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	6 Sites	2 Sites	8.4	8.3	83.3			
20-50 mi <sup>2</sup>	1 Sites	0 Sites						
Principal Streams						12	21	67
50-500 mi <sup>2</sup>	10 Sites	10 Sites	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)    Geometric Mean: 232  
 No. Ambient Sites: 1    No. Ambient Sampling Records: 4    75<sup>th</sup> %ile: 335  
 No. of NPDES MOR Sites: 2    No. of NPDES MOR Records: 75    90<sup>th</sup> %ile: 820  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: No (1)  
 Stream Miles Monitored: 18.06    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## WAU Comments

A watershed action plan for this assessment unit has been endorsed by the Ohio EPA and Ohio DNR. The U.S. EPA has awarded a grant to Clermont County to complete TMDLs for the East Fork Little Miami River watershed by 2006.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	5 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	6 Sites	1 Sites	9.2	72.5	18.3			
20-50 mi <sup>2</sup>	1 Sites	0 Sites						
						15	76	9
Principal Streams								
50-500 mi <sup>2</sup>	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  
 Pathogens

### 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)    Geometric Mean: 521  
 No. Ambient Sites: 1    No. Ambient Sampling Records: 4    75<sup>th</sup> %ile: 973  
 No. of NPDES MOR Sites: 2    No. of NPDES MOR Records: 84    90<sup>th</sup> %ile: 3330  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes      Impairment: No (1)  
 Stream Miles Monitored: 5.99      Stream Miles Impaired: 0.00      Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0      Lake Acres Impaired: 0.0

## WAU Comments

A watershed action plan for this assessment unit has been endorsed by the Ohio EPA and Ohio DNR. The U.S. EPA has awarded a grant to Clermont County to complete TMDLs for the East Fork Little Miami River watershed by 2006.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	1 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	3 Sites	0 Sites	0.0	50.0	50.0			
20-50 mi <sup>2</sup>	2 Sites	0 Sites						
						0	50	50
Principal Streams								
50-500 mi <sup>2</sup>	Sites	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)    Geometric Mean:  
 No. Ambient Sites:    No. Ambient Sampling Records:    75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:    No. of NPDES MOR Records:    90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

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

## 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.

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	4 Sites	2 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	5 Sites	2 Sites	22.5	10.0	67.5			
20-50 mi <sup>2</sup>	7 Sites	0 Sites						
						11	5	84
Principal Streams								
50-500 mi <sup>2</sup>	16.3 Miles	0.0 Miles	0.00	0.00	100			

### High Magnitude Causes

Cause Unknown                      Taste and Odor  
Unknown Toxicity  
Unionized Ammonia  
Nutrients  
Organic Enrichment/DO  
Flow Alteration  
Direct Habitat Alterations  
Oil and Grease

### 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)    Geometric Mean: 905  
No. Ambient Sites: 15                      No. Ambient Sampling Records: 81                      75<sup>th</sup> %ile: 2400  
No. of NPDES MOR Sites: 2                      No. of NPDES MOR Records: 75                      90<sup>th</sup> %ile: 7050  
Other:

## 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: 0.0

## 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 <sup>2</sup>	1 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	3 Sites	1 Sites	16.7	0.0	83.3			
20-50 mi <sup>2</sup>	Sites	Sites						
						17	0	83
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	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)    Geometric Mean: 70  
 No. Ambient Sites: 0    No. Ambient Sampling Records: 0    75<sup>th</sup> %ile: 167  
 No. of NPDES MOR Sites: 3    No. of NPDES MOR Records: 527    90<sup>th</sup> %ile: 504  
 Other:

## Fish Tissue Assessment

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

## 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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 0.1  
 05090203 050              Ohio River tributaries (downstream Great Miami River to upstream  
    Wolper Creek [KY])

**Integrated Report Assessment Category: 3**    **Priority Points:**  
**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 <sup>2</sup>		Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>		Sites						
20-50 mi <sup>2</sup>		Sites						
Principal Streams								
50-500 mi <sup>2</sup>		Sites						
		Miles						

High Magnitude Causes

High Magnitude Sources

**Recreation Use Assessment**

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

**Fish Tissue Assessment**

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

**WAU Comments**

This is a very small watershed within Ohio (only 39 acres).

# Ohio EPA 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 115.9  
 05120101 010              Wabash River (headwaters to upstream Beaver Creek)

**Integrated Report Assessment Category: 5**    **Priority Points: 5**  
**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 <sup>2</sup>	5 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	7 Sites	1 Sites	8.6	25.0	66.4			
20-50 mi <sup>2</sup>	2 Sites	0 Sites						
						4	57	39
Principal Streams								
50-500 mi <sup>2</sup>	6 Sites							
	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)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 13.60    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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/index.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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 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 (5)

Stream Size Category	Raw Data		% Attainment			WAU Score		
	Data Available	No. Attaining	Full	Partial	Non	Full	Partial	Non
Secondary Tributaries								
< 5 mi <sup>2</sup>	2 Sites	0 Sites						
Primary Tributaries			0.0	27.3	72.7			
5-20 mi <sup>2</sup>	11 Sites	0 Sites						
20-50 mi <sup>2</sup>	Sites	Sites						
Principal Streams	Sites					0	27	73
50-500 mi <sup>2</sup>	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: Unknown (3)  
No. Ambient Sites:                      No. Ambient Sampling Records:                      Geometric Mean:  
No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      75<sup>th</sup> %ile:  
Other:    90<sup>th</sup> %ile:

**Fish Tissue Assessment**

Waters Sampled: Yes    Impairment: Yes (5)  
Stream Miles Monitored: 0.00    Stream Miles Impaired: 0.00    Pollutants (Waterbody): PCBs (Grand Lake St. Marys)  
Lake Acres Monitored: 12700.0    Lake Acres Impaired: 12700.0

**WAU Comments**

The 2006 Integrated Report assessment of available fish tissue data from Grand Lake St. Marys 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 2006 Integrated Report Appendix E.2 Watershed Assessment Unit (WAU) Results

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 58.6  
 05120101 030              Beaver Creek (downstream Grand Lake St. Marys Dam to mouth)

**Integrated Report Assessment Category: 5**    **Priority Points: 5**  
**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 <sup>2</sup>	3 Sites	1 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	2 Sites	1 Sites	41.7	25.0	33.3			
20-50 mi <sup>2</sup>	Sites	Sites						
						21	12	67
Principal Streams								
50-500 mi <sup>2</sup>	4 Sites							
	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  
 Impairment: Yes (5-Historical)    Geometric Mean:  
 No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
 No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
 Other:

## Fish Tissue Assessment

Waters Sampled: Yes    Impairment: Unknown (3-Indeterminate Data)  
 Stream Miles Monitored: 8.20    Stream Miles Impaired: 0.00    Pollutants (Waterbody):  
 Lake Acres Monitored: 0.0    Lake Acres Impaired: 0.0

## 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/index.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 2006 Integrated Report Appendix E.2  
Watershed Assessment Unit (WAU) Results**

**HUC11**                      **WAU Description**    **WAU Size (mi<sup>2</sup>):** 30.3  
05120103 010              Mississinewa River (headwaters to downstream Mud Creek [IN])

**Integrated Report Assessment Category: 5**    **Priority Points: 8**  
**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 <sup>2</sup>	3 Sites	0 Sites						
Primary Tributaries								
5-20 mi <sup>2</sup>	2 Sites	1 Sites	62.5	37.5	0.0			
20-50 mi <sup>2</sup>	1 Sites	1 Sites						
						63	37	0
Principal Streams								
50-500 mi <sup>2</sup>	Sites							
	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)    Geometric Mean:  
No. Ambient Sites:                      No. Ambient Sampling Records:                      75<sup>th</sup> %ile:  
No. of NPDES MOR Sites:              No. of NPDES MOR Records:                      90<sup>th</sup> %ile:  
Other:

**Fish Tissue Assessment**

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

**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.