

Ottawa River/Ten Mile Creek Watershed

Volume 1

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The Ottawa River/Ten Mile Creek Watershed is Hydrologic Unit 04100001 020. The Ottawa River is 45 miles long with a drainage basin of 220.9 square miles; 146.7 of which are in Ohio.¹ Its average gradient is 4 feet per mile.² The watershed begins in northeastern Fulton County where the river is known as Ten Mile Creek. It flows east through Lucas County, where it is joined by North Ten Mile Creek from Lenawee and Monroe counties in Michigan. The river continues to flow through Lucas County until it joins Maumee Bay and Lake Erie in Monroe County. Low lake levels and sedimentation have made the river shallow and difficult to navigate.

Halfway, Silver, and Shantee creeks are also included under this HUC. These creeks flow along similar paths to the Ottawa River; back and forth along the Ohio – Michigan state line, ultimately ending up in north Maumee Bay and Lake Erie. Compared to the Ottawa River, these creeks have relatively small watersheds, draining 18.6 square miles in Ohio and 36.9 in Michigan.³

The Ottawa River watershed can be divided into three major reaches, or parts, based on the dominant stream regime within each reach. The upstream Ten Mile Creek reach from the headwaters to the City of Sylvania at RM 20, has a stable channel. The banks are low (15 to 25 feet) with indistinct valleys and floodplains. The headwaters of the North Branch of Ten Mile Creek are the Ottawa Lake Drain originating in Riga Township, Lenawee County, Michigan. This area is very flat with indistinct floodplains. Both headwater areas are primarily in agricultural land use.

In addition to agriculture there is continued residential development within the City of Sylvania, western Sylvania Township, and the Villages of Metamora and Berkey. The gradient here is a gradual 4.3 feet drop per mile. The major tributary to Ten Mile Creek is Prairie Ditch which flows through Secor Metropark.

**Upper Reach of
Ottawa River/Ten Mile Creek Watershed Use Attainment Data⁴**

River Mile	Sample Year	ICI Score	HELP Ecoregion ICI Criteria	Lacustrary ICI Score*	HELP Ecoregion Lacustrary ICI Criteria*	Modified Index of Well Being Score	HELP Ecoregion Miwb Criteria	IBI Score	HELP Ecoregion IBI Criteria	Lacustrary IBI Score*	HELP Ecoregion Lacustrary IBI Criteria*	QHEI Score	HELP Ecoregion QHEI Criteria
<i>Ten Mile Crk</i>													
0.4	1992	30	34										
0.5	1992					6.52	7.3	24	32			67.5	60
0.5	1993					7.301	7.3	24	32			67	60
1.1	1986					6.121	7.3	30	32				
1.1	1986					6.453	7.3	30	32				
1.1	1986					6.471	7.3	26	32				
1.2	1990					3.35	7.3	18	32			54	60
3	1992	28	34			6.548	7.3	32	32			66.5	60
3	1993					6.645	7.3	26	32			48	60
4.1	1992	30	34			8.4	7.3	34	32			68.5	60
4.1	1993					6.514	7.3	24	32			46.5	60
4.2	1986					5.179	7.3	28	32				
4.2	1986					6.83	7.3	26	32				
4.2	1986					5.405	7.3	22	32				

River Mile	Sample Year	ICI Score	HELP Ecoregion ICI Criteria	Lacustrary ICI Score*	HELP Ecoregion Lacustrary ICI Criteria*	Modified Index of Well Being Score	HELP Ecoregion Miwb Criteria	IBI Score	HELP Ecoregion IBI Criteria	Lacustrary IBI Score*	HELP Ecoregion Lacustrary IBI Criteria*	QHEI Score	HELP Ecoregion QHEI Criteria
<i>Ten Mile Crk</i>													
5.2	1986					6.049	7.3	28	32				
5.2	1986					5.523	7.3	24	32				
6	1992					6.838	7.3	32	32			61.5	60
6	1993					7.597	7.3	30	32			35	60
9.2	1992	30	34										
9.2	1993					6.401	7.3	26	32			51	60
9.3	1992					6.118	7.3	26	32			61	60
<i>North Branch Ten Mile Crk</i>													
0.1	1992					5.57	7.3	26	32			67	60
0.1	1993					3.442	7.3	20	32			47	60

**Upper Reach of
Ottawa River/Ten Mile Creek Watershed DELT Data⁵**

River Mile	Sample Year	Percent DELT Anomalies	Percent Deformities	Percent Eroded Fins	Percent Lesions	Percent Tumors	Relative Number of Fish Collected	Relative Number of Species Collected	Relative Number of Fish Minus Tolerants	Relative Weight of Fish Collected (in grams)
<i>Ten Mile Creek</i>										
0.5	1992	0.6077	0	0.31	0	0	589.53	8	375.95	4.773
0.5	1993	1.6942	0	1.69	0	0	1686.37	12	1105.3	5.667
1.1	1986	0	0	0	0	0	277.5	13	141	2.281
1.1	1986	0	0	0	0	0	562.5	12	317.98	2.865
1.1	1986	0	0	0	0	0	643.5	9	351.03	4.954
1.2	1990	0	0	0	0	0	628.5	8	20.99	41.173
3	1992	0.4505	0	0.45	0	0	289.47	15	152.56	16.308
3	1993	3.0667	0	3.07	0	0	349.5	12	156	8.502
4.1	1992	0.1063	0	0.11	0	0	2403.98	16	1412.03	36.917
4.1	1993	2.8504	0	2.85	0	0	583.95	16	145.42	5.875
4.2	1986	0.5814	0	0.58	0	0	258	14	52.5	8.914
4.2	1986	0.3458	0.35	0	0	0	445.5	11	195	4.153
4.2	1986	1.9231	0	0	1.92	0	156	10	84.01	4.914
5.2	1986	0.5189	0	0	0.52	0	594	15	127.47	10.052
5.2	1986	0	0	0	0	0	870	13	136.5	21.033
6	1992	0.361	0	0	0.36	0	415.5	13	216	4.091
6	1993	1.2173	0	0.86	0.48	0	1804.42	18	407.18	46.418
9.2	1993	0.7194	0	0.72	0	0	736.04	10	310.66	13.907
9.3	1992	0.3012	0	0.3	0	0	586.01	11	195.93	7.409
<i>North Branch Ten Mile Creek</i>										
0.1	1992	0	0	0	0	0	651	9	495	1.299
0.1	1993	0	0	0	0	0	258	8	43.5	2.519

The second, or middle reach, is that area between river miles 20 and 5. The banks are high (35 to 45 feet or more) and unstable and are intermixed with distinct floodplains. However, bedrock can be found in the channel from RM 20 at the confluence of the North Branch of Ten Mile Creek in the City of Sylvania to RM 16 within Wildwood Preserve Metropark. The Ottawa River flows through the Wildwood Preserve Metropark north of the Village of Ottawa Hills. The major activities at the Metropark include wildlife observation and hiking. The park also serves as an important wildlife corridor for animals such as deer. Other recreational areas along the Ottawa River within this reach include Camp Miakonda Boy Scout Reservation and Ottawa Park. The major problems are urbanization with the filling in of the floodplains, urban runoff, and destruction of wetland areas.

The land use in the middle reach is residential, commercial and industrial. Within this reach are a number of open space areas: Wildwood Preserve, the floodplain lands in the Village of Ottawa Hills, Ottawa Park and Joe E. Brown Park. The area from South Cove Boulevard (RM 9) and downstream, however, is primarily industrial. This segment is neither swimmable nor fishable according to public health standards. Contributing to the pollution is two miles of wall-to-wall dumps which filled-in the floodplains and channelized the Ottawa River on both sides years ago.

The water quality of this reach is marginally *good* in the vicinity of Centennial and Old Post Roads, but at Sturbridge Road (RM 18.5) it declines to *fair* downstream from here to Secor Road at the entrance to the University of Toledo (RM 11). Hill Ditch and Heldman Ditch are tributary to the Ottawa River just west of Secor Road. Downstream from the University of Toledo to Stickney Avenue (RM 5) the middle reach water quality is *poor*.

**Middle Reach of
Ottawa River/Ten Mile Creek Watershed Use Attainment Data⁶**

River Mile	Sample Year	ICI Score	HELP Ecoregion ICI Criteria	Lacustrary ICI Score*	HELP Ecoregion Lacustrary ICI Criteria*	Modified Index of Well Being Score	HELP Ecoregion Miwb Criteria	IBI Score	HELP Ecoregion IBI Criteria	Lacustrary IBI Score*	HELP Ecoregion Lacustrary IBI Criteria*	QHEI Score	HELP Ecoregion QHEI Criteria
<i>Ottawa River</i>													
5.2	2000			16	42								
5.2	1990					4.503	8.6			10	42	43	60
5.3	1996					5.296	8.6			18	42		
5.3	1996			6	42	4.682	8.6			17	42	41.5	60
5.3	2000					5.989	8.6			17	42	35	60
5.3	2000					5.984	8.6			21	42		
5.3	2002					6.371	8.6			21	42	41	60
5.3	2002					6.964	8.6			22	42		
5.4	1986					2.844	8.6			7	42	32	60
5.4	1986					3.321	8.6			16	42		
5.4	1986					4.904	8.6			12	42		
5.5	1996			8	42	5.923	8.6			16	42	41	60
5.5	1996					6.891	8.6			27	42		
5.5	2002					6.086	8.6			18	42		
5.5	2002					7.412	8.6			24	42	34	60
5.7	1996			6	42	6.579	8.6			18	42	44.5	60
5.7	1996					5.966	8.6			25	42		

River Mile	Sample Year	ICI Score	HELP Ecoregion ICI Criteria	Lacustuary ICI Score*	HELP Ecoregion Lacustuary ICI Criteria*	Modified Index of Well Being Score	HELP Ecoregion Miwb Criteria	IBI Score	HELP Ecoregion IBI Criteria	Lacustuary IBI Score*	HELP Ecoregion Lacustuary IBI Criteria*	QHEI Score	HELP Ecoregion QHEI Criteria
<i>Ottawa River</i>													
5.8	1999			10	42						42		
5.8	2001			10	42								
5.8	2002					5.568	8.6			18	42	41.5	60
5.8	2002					6.714	8.6			31	42		
5.9	1999			10	42								
5.9	2000					6.668	8.6			21	42	37	60
5.9	2000					5.827	8.6			26	42		
5.9	2001			20	42								
6	1999			12	42								
6	2001			14	42								
6.1	1999			10	42								
6.1	2000			14	42								
6.1	2001			10	42								
6.2	1992					5.807	8.6			21	42		
6.4	1992			12	42								
6.4	1993											25.5	60
6.4	1986					4.128	8.6			15	42	45	60
6.4	1986					2.995	8.6			10	42		
6.4	1986					4.731	8.6			19	42		
6.9	1986			12	42								
7.2	1990					5.889	8.6	20	34			45.5	60
7.2	2000					6.916	8.6			23	42	42.5	60
7.3	2000			16	42								
7.4	1986			14	42	6.845	8.6	16	34			39	60
7.4	1986					3.431	8.6	12	34				
7.4	1986					5.109	8.6	14	34				
7.9	2000			14	42								
8	2000					6.699	8.6			19	42	49	60
8	2000					6.549	8.6			24	42		
8.7	1986					4.27	8.6	16	34			32.5	60
8.7	1986					4.631	8.6	14	34				
8.7	1986					5.515	8.6	20	34				
8.7	1992					6.713	8.6	14	34				
9	1986	6	34										
9	1992	16	34										
9.8	1986					2.154	8.6	22	34			52	60
9.8	1986					3.897	8.6	24	34				
9.8	1986					3.086	8.6	24	34				
9.8	1990					5.9	8.6	18	34			65.5	60
11	1986	16	34										
11	1993					4.879	7.3	16	32			26.5	60
11.1	1992	22	34										
11.2	1992					5.806	7.3	20	32			30.5	60

River Mile	Sample Year	ICI Score	HELP Ecoregion ICI Criteria	Lacustrary ICI Score*	HELP Ecoregion Lacustrary ICI Criteria*	Modified Index of Well Being Score	HELP Ecoregion Miwb Criteria	IBI Score	HELP Ecoregion IBI Criteria	Lacustrary IBI Score*	HELP Ecoregion Lacustrary IBI Criteria*	QHEI Score	HELP Ecoregion QHEI Criteria
<i>Ottawa River</i>													
11.7	2000	24	34										
11.8	2000					4.891	7.3	14	32			53	60
11.8	2000					5.861	7.3	20	32				
17.7	1992					5.749	7.3	22	32			53.5	60
17.7	1993					5.474	7.3	22	32			29	60
17.8	1986					5.059	7.3	22	32				
17.8	1986					7.172	7.3	26	32				
18.5	1986	22	34										
18.5	1992	30	34										
<i>Sibley Creek</i>													
0.1	1996											36.5	60
0.1	1996					3.034	7.3	18	32				
0.1	1996					2.658	7.3	20	32				
0.1	2002					0.563	7.3	12	32			26	60
0.1	2002							12	32				
0.2	2002					3.154	7.3	22	32			25.5	60
0.2	2002					4.312	7.3	26	32				
0.8	1993							12	32			31	60
0.8	1996							12	32			40	60
0.8	2002							12	32			36.5	60
0.8	2002							12	32				
<i>Haefner Ditch</i>													
1	1993							12	32			30	60
3.3	1993											23	60
<i>Heldman Ditch</i>													
0.2	1993					5.576	7.3	26	32			44.5	60
2.7	1993											39.5	60
5.5	1993											30	60
<i>Hill Ditch</i>													
0.1	1993					4.023	7.3	18	32			35	60
1	1993											33	60
2.6	1993											30	60

* The double horizontal line represents the lacustrary divide of Ottawa River, although it is noted that lacustrary lengths are approximate and fluctuate with lake levels and wind direction.⁷

**Middle Reach of
Ottawa River/Ten Mile Creek Watershed DELT Data⁸**

River Mile	Sample Year	Percent DELT Anomalies	Percent Deformities	Percent Eroded Fins	Percent Lesions	Percent Tumors	Relative Number of Fish Collected	Relative Number of Species Collected	Relative Number of Fish Minus Tolerants	Relative Weight of Fish Collected (in grams)
<i>Ottawa River</i>										
5.2	1990	6.25	0	6.25	0	0	288	6	186	55.701
5.3	1996	21.25	19.48	0	0	0	128	9	74	36.734
5.3	1996	28.01	27.28	2.5	0	0	272	13	182	63.229
5.3	2000	11.0053	0	4.66	6.35	0	126	9	70	68.212
5.3	2000	1.4545	0.73	0.73	0	0	550	11	414	40.488
5.3	2002	10	1.25	2.5	6.25	0	160	14	88	67.721
5.3	2002	1.0979	0	0.73	0	0	838	13	728	83.31
5.4	1986	13.04	0	4.35	8.7	0	46	5	6	4.554
5.4	1986	0	0	0	0	0	218	4	56	2.959
5.4	1986	0.65	0	0	0.65	0	306	4	222	21.143
5.5	1996	21.38	19.5	0	1.89	0	212	12	90	43.603
5.5	1996	7.09	6.58	0.51	0	0	474	14	368	35.603
5.5	2002	9.6893	0	0	9.69	0	162.5	12	85	35.103
5.5	2002	2.0921	0	0	2.09	0	597.5	14	512.5	38.781
5.7	1996	8.11	6.76	0	1.35	0	164.42	14	75.55	32.529
5.7	1996	0	0	0	0	0	226	11	164	4.208
5.8	2002	8.4746	0	5.08	3.39	0	118	11	54	48.344
5.8	2002	0.5291	0	0.53	0	0	756	14	704	28.922
5.9	2000	16.7925	2.89	1.89	11.07	0	212	11	122	46.039
5.9	2000	0.7117	0.36	0.36	0	0	562	13	492	44.331
6.2	1992	12.75	0.98	1.96	9.8	0	204	15	58	30.095
6.4	1986	6.12	2.04	0	4.08	0	98	10	16	16.512
6.4	1986	0	0	0	0	0	70	3	16	29.554
6.4	1986	0	0	0	0	0	426	6	342	16.19
7.2	1990	1.11	0	0.54	0.57	0	1192	7	908	42.906
7.2	2000	10.4215	1.15	3.07	6.21	0	174	12	82	78.62
7.2	2000	1.6304	0	0.27	1.09	0.27	736	14	646	70.447
7.4	1986	18.02	0.84	0	13.83	3.36	270	12	66	70.616
7.4	1986	11.76	0	0	11.76	0	34	4	16	7.192
7.4	1986	7.26	0	0	7.26	0	468	8	328	45.018
8	2000	13.1579	0	7.89	5.26	0	76	8	46	25.672
8	2000	0.3257	0.33	0	0	0	614	10	550	43.406
8.7	1986	3.37	2.25	1.12	0	0	178	13	14	36.752
8.7	1986	4.99	0	0	3.31	1.68	242	7	194	15.267
8.7	1986	1.7	0	0	0.72	0.98	464	10	252	64.903
8.7	1992	5.57	1.97	0.33	3.28	0	610	9	292	43.556
9.8	1986	0	0	0	0	0	130.5	4	3	1.388
9.8	1986	0	0	0	0	0	139.5	9	12	2.488
9.8	1986	0.56	0	0.56	0	0	268.5	7	13.5	6.979
9.8	1990	0	0	0	0	0	268.5	11	60	1.796
11	1993	0	0	0	0	0	181.41	9	111.85	6.814

River Mile	Sample Year	Percent DELT Anomalies	Percent Deformities	Percent Eroded Fins	Percent Lesions	Percent Tumors	Relative Number of Fish Collected	Relative Number of Species Collected	Relative Number of Fish Minus Tolerants	Relative Weight of Fish Collected (in grams)
<i>Ottawa River</i>										
11.2	1992	1.008	0	0	1.01	0	287.25	14	80.04	3.959
11.8	2000	0.2392	0	0.24	0	0	1194.65	10	190.05	5.79
11.8	2000	0	0	0	0	0	753	13	186	5.227
17.7	1992	0.8196	0.41	0	0.41	0	348.69	13	130.05	11.616
17.7	1993	0	0	0	0	0	117	9	52.5	0.588
17.8	1986	0.4926	0	0	0.49	0	304.5	12	90.01	12.965
17.8	1986	0	0	0	0	0	1155	13	520.44	10.324
<i>Sibley Creek</i>										
0.1	1996	1.2195	0	0	0	0	328	6	32	0
0.1	1996	0	0	0	0	0	528	9	30	0
0.1	2002	0	0	0	0	0	3	1	0	0
0.1	2002	0	0	0	0	0	12	2	0	0
0.2	2002	0	0	0	0	0	153	4	63	0
0.2	2002	0.4525	0	0	0	0	663	8	243	0
0.8	1993	0	0	0	0	0	0	0	0	0
0.8	1996	0	0	0	0	0	0	0	0	0
0.8	2002	0	0	0	0	0	9	1	0	0
0.8	2002	0	0	0	0	0	3	1	0	0
<i>Haefner Ditch</i>										
1	1993	0	0	0	0	0	1.5	1	0	0.014
<i>Heldman Ditch</i>										
0.2	1993	0.7407	0	0.74	0	0	202.5	10	75	1.565
<i>Hill Ditch</i>										
0.1	1993	0.6055	0	0.29	0.31	0	514.5	8	22.5	6.955

* The double horizontal line represents the lacustrary divide of Ottawa River, although it is noted that lacustrary lengths are approximate and fluctuate with lake levels and wind direction.⁹

The third and last reach, the lower reach, from Stickney Avenue (RM 5) to the mouth, is under the backwater influence from the Maumee Bay. The level of Lake Erie prevents the lower reach from naturally deepening itself. The major problem is extremely poor water quality. This segment is neither swimmable nor fishable according to public health standards.

This segment along the river is in industrial use, but becomes more residential at about RM 3 with marinas above and at the mouth. Like the Maumee River, the Ottawa River is important for non-contact recreation such as sailing and power boating. Boating is mostly restricted to the area downstream from Suder Ave (RM 3.1) due to the difficulty of getting large boats past that point. Smaller boats can make it upstream as far as Stickney Avenue and just beyond. The primary boating lanes are downstream from Suder Avenue to Maumee Bay.

The Ottawa River was one of the most important water skiing areas in the region, however, water skiing and other contact activities no longer occur to any large extent due to water pollution. A state issued contact advisory from I-475 near the Wildwood Preserve Metropark (RM 16.5) to the mouth advise persons to avoid contact with the water, sediment, and fish. The recreational industry

including numerous marinas, fishing charters, and water ski clubs, has been affected by the inability to use these contaminated waters.

**Lower Reach of
Ottawa River/Ten Mile Creek Watershed Use Attainment Data¹⁰**

River Mile	Sample Year	ICI Score	HELP Ecoregion ICI Criteria	Lacustrary ICI Score*	HELP Ecoregion Lacustrary ICI Criteria*	Modified Index of Well Being Score	HELP Ecoregion Miwb Criteria	IBI Score	HELP Ecoregion IBI Criteria	Lacustrary IBI Score*	HELP Ecoregion Lacustrary IBI Criteria*	QHEI Score	HELP Ecoregion QHEI Criteria
<i>Ottawa River</i>													
0.1	1996					3.062	8.6			11	42		
0.1	1996					6.776	8.6			28	42		
0.1	1996					6.882	8.6			30	42		
0.1	1996					6.836	8.6			34	42		
0.1	1996					6.24	8.6			34	42		
1	1990					6.929	8.6			23	42	36.5	60
1.6	1986			12	42								
1.6	2000					6.949	8.6			25	42	37.5	60
1.6	2000					7.265	8.6			23	42		
1.7	2000			8	42								
1.8	1986					7.206	8.6			28	42	48	60
1.8	1986					6.165	8.6			17	42		
1.8	1986					7.129	8.6			29	42		
2.9	1990					7.089	8.6			20	42	37	60
3.4	2000					5.59	8.6			17	42	39	60
3.4	2000					6.789	8.6			23	42		
3.5	2000			14	42								
4.7	1986					3.368	8.6			10	42	44	60
4.7	1986					3.429	8.6			15	42		
4.7	1986					4.585	8.6			15	42		
4.7	1992					4.257	8.6			10	42		
4.9	1986			16	42								
4.9	1992			10	42								
5	1993											25	60
5	2002					6.555	8.6			22	42	40	60
5	2002					5.651	8.6			20	42		

* The lacustrary divide of Ottawa River is at RM 6.8, although it is noted that lacustrary lengths are approximate and fluctuate with lake levels and wind direction.¹¹

**Lower Reach of
Ottawa River/Ten Mile Creek Watershed DELT Data¹²**

River Mile	Sample Year	Percent DELT Anomalies	Percent Deformities	Percent Eroded Fins	Percent Lesions	Percent Tumors	Relative Number of Fish Collected	Relative Number of Species Collected	Relative Number of Fish Minus Tolerants	Relative Weight of Fish Collected (in grams)
<i>Ottawa River</i>										
0.1	1996	0	0	0	0	0	16	3	8	15.542
0.1	1996	0	0	0	0	0	208	12	176	51.808

River Mile	Sample Year	Percent DELT Anomalies	Percent Deformities	Percent Eroded Fins	Percent Lesions	Percent Tumors	Relative Number of Fish Collected	Relative Number of Species Collected	Relative Number of Fish Minus Tolerants	Relative Weight of Fish Collected (in grams)
0.1	1996	0	0	0	0	0	330	9	324	27.074
0.1	1996	0	0	0	0	0	104	10	90	25.7
0.1	1996	0	0	0	0	0	194	8	194	22.368
1	1990	0.31	0.31	0	0	0	1224	10	1158	74.485
1.6	2000	6.2626	2.09	4.18	0	0	198	12	134	134.705
1.6	2000	7.2762	4.19	2.79	0.29	0	1050	13	798	425.516
1.8	1986	2.81	0.45	0.24	2.12	0	954	19	840	55.053
1.8	1986	14.22	0	0	14.22	0	408	12	268	74.415
1.8	1986	3.47	0.34	0.75	2.38	0	588	17	452	113.57
2.9	1990	1.18	0	0.39	0.79	0	1218	12	1078	76.899
3.4	2000	6.9565	0	1.74	5.22	0	230	9	118	105.793
3.4	2000	5.6316	0.26	1.35	4.02	0	760	16	566	160.277
4.7	1986	8.49	1.83	0	6.67	0	124	6	28	60.94
4.7	1986	0.41	0	0	0.41	0	526.58	6	87.76	39.413
4.7	1986	2.12	0	0	2.12	0	460	8	146	87.812
4.7	1992	2.05	1.05	0	1.01	0	398	5	252	27.717
5	2002	9.1954	0	0	9.2	0	174	13	82	53.608
5	2002	0.3922	0.39	0	0	0	510	11	408	116.184

* The lacustrine divide of Ottawa River is at RM 6.8, although it is noted that lacustrine lengths are approximate and fluctuate with lake levels and wind direction.¹³

**Ottawa River/Ten Mile Creek Watershed Impairments
Causes and Sources of Impairments¹⁴**

Segment	Miles Assessed & Aquatic Life Use Designation[#]	Causes of Impairment*	Sources of Impairment*	Comments
Ten Mile Creek	25.47 (RM 0-25.47) WWH	Other habitat alterations-H Pesticides-M Priority organics-M Metals-S Siltation-S	Nonirrigated crop production-H Land development/ Suburbanization-M Removal of riparian Vegetation -S Dam construction-S	305(b)-2000: PCBs, DDT, chlordane isomers, dieldrin, selenium, mercury and lead were found in carp tissue samples; pesticide problem due to ag inputs; stream scores compare to other streams in the ecoregion; nonpoint source pollution inputs are probably the cause of most of the lingering problems.
N. Branch Ten Mile Creek	6.5 (RM 0-6.5) WWH	Flow alteration-H Pesticides-M Priority organics-M Metals-S Other habitat alterations-S	Flow regulation/ Modification-H Land development/ Suburbanization-M Other urban runoff-M Highway/road/bridge/ sewer line-S	305(b)-2000: creek chubs contain significant concentration of pesticides and PCBs; metals, cadmium, mercury, and selenium were also noted; flow seems to be major problem probably due to urbanization; contaminants seem typical for agriculture & suburban sources of pesticides; unknown were PCBs are coming from
Ottawa River	19.75 (RM 0-19.75)	Pesticides-H Priority organics -H Siltation-M Other habitat alterations-M	Major industrial point Sources-M CSOs-M Land development/ Suburbanization-M Other urban runoff-S Landfills-H Channelization-M Removal of riparian Vegetation-M Streambank modification/ Destabilization-M	305(b)-1996: Data in this table
Flieg Ditch	3.75 (RM 0-3.75)	Flow alteration-H Other habitat alterations-M Siltation-M Unknown toxicity-S	Removal of riparian vegetation-H Streambank modification/ Destabilization-H Dredging-M Highway/road/bridge/ sewer line-M Land development/ Suburbanization-M Other urban runoff-M Highway maintenance and Runoff-S	305(b)-1996: Data in this table

Segment	Miles Assessed & Aquatic Life Use Designation[#]	Causes of Impairment*	Sources of Impairment*	Comments
Heldman Ditch	5.5 (RM 0-5.5) MWH-C	Flow alteration-H Other habitat alterations-H Nutrients-M Siltation-M	Removal of riparian Vegetation-H Streambank modification/ Destabilization-H Channelization-M Highway maintenance and Runoff-M Highway/road/bridge/ sewer line-M Land development/ Suburbanization-M Other urban runoff-M	305(b)-2000: stream has been modified for drainage purposes; urban storm water and other inputs impact the stream (i.e. oil, chemicals, silt, variable flow, etc.)
Haefner Ditch	4.4 (RM 0-4.4) LRW	Other habitat alterations-H Siltation-M Unknown toxicity-M	Removal of riparian Vegetation-H Highway maintenance and Runoff-M Land development/ Suburbanization-M Other urban Runoff-M Streambank modification/ Destabilization-M	305(b)-2000: source of pollutants is unknown; could be attributed to urban nonpoint runoff; stream has been modified to conform to city layout and to carry storm water runoff efficiently
Hill Ditch	5.8 (RM 0-5.8) LRW & MWH-C	Flow alteration-H Other habitat alterations-H Siltation-M Nutrients-S Unknown toxicity-S	Removal of riparian Vegetation-H Streambank modification/ Destabilization-H Channelization-M Dredging-M Highway/road/bridge/ sewer line-M Land development/ Suburbanization-M Other Urban Runoff-M Highway Maintenance & runoff-S	305(b)-2000: possibly impacted by urban runoff; stream has been extensively modified to move water away; massive inputs of storm water via drains of all kinds; possible impact from urban storm water components (i.e. oil, chemicals, flashy slow, silt, trash, etc.); possible dumping by nearby business of oil waste in-stream as oil sediments were noted (Note: 2 entries in 2000 report)
Sibley Creek	5.2 (RM 0-5.2) LRW	Priority organics-H Thermal modifications-H	Contaminated sediments-H Landfills-M	305(b)-2000: no fish were captured in upper section; some were present near mouth; strong creosote odor present in the sediments, elevated PCBs in sediments; substrate at RM 0.8 were temperature hot

Segment	Miles Assessed & Aquatic Life Use Designation[#]	Causes of Impairment*	Sources of Impairment*	Comments
Shantee Creek	6.0 (RM 0-6.0) LRW & MWH-C	Other habitat alterations-H Priority organics-H Flow alteration-M Metals-M Oil and grease-M Organic enrichment/DO-M Pesticides-M Unknown toxicity-M	Minor industrial point Source-H Removal of riparian Vegetation-H Channelization-M Contaminated sediment-M Onsite wastewater systems (septic tanks)-M Other urban runoff-M Streambank modification/ Destabilization-M	305(b)-2000: fish tissue contaminated with PCBs, pesticides, and metals; sediment contains oily material that leave a sheen on surface of water; sources are probably urban runoff, and spills/dumping from industrial plants along the stream
Tiff Ditch	2.05 (RM 0-2.05) LRW	Other habitat alterations-H Flow alteration-M Siltation-M	Land development/ Suburbanization-H Streambank modification/ Destabilization-H Channelization-M Other urban runoff-M Removal of riparian Vegetation-M	305(b)-2000: an urban, channelized ditch with heavy silt, no riparian, no habitat, and high variable flows
Silver Creek	7.3 (RM 0-6.9) LRW	Other habitat alterations-H Priority organics-H Metals-M Nutrients-M Oil and grease-M Organic enrichment/DO-S Pesticides-M Flow alterations-M	Land development/ Suburbanization-H Channelization-M Removal of riparian vegetation-M Streambank modification/ Destabilization-M Contaminated sediment-M	305(b)-2000: channelized with stream relocated in spots; heavy silt; many storm sewers & other pipes discharge to stream; little riparian cover; little in-stream habitat; flow regime highly variable; sediments full of oily residues, fish tissue samples contain PCBs, pesticides, and metals; sources may include urban runoff or illegal dumping
Ketcham Ditch	1.4 (RM 0-1.43) LRW	Other habitat alterations-H Siltation-M Flow alteration-M	Land development/ Suburbanization-H Streambank modification/ Destabilization-H Channelization-M Other urban runoff-M Removal of riparian Vegetation-M	305(b)-2000: urban drainage ditch, heavily silted and channelized with little upstream cover and no riparian corridor

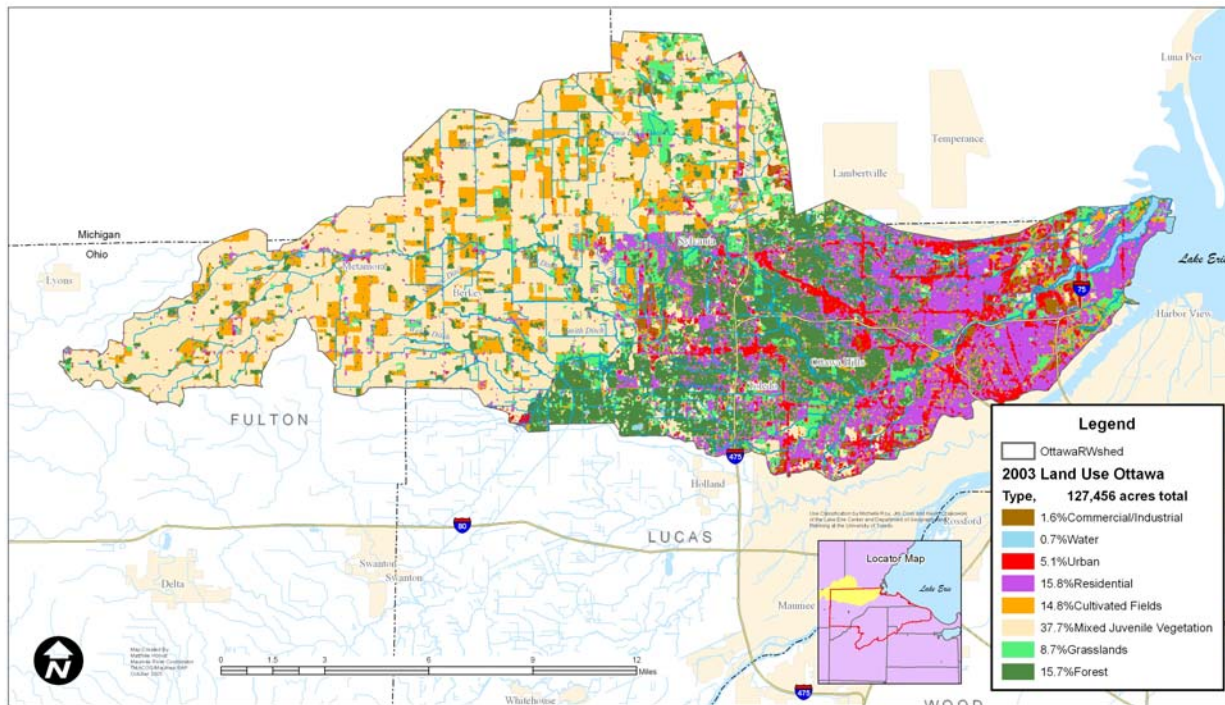
*Magnitude of that cause or source of impairment: H=high, M=moderate, S=slight, T=identifies a threat

[#]Aquatic Life Use Designation: WWH=Warm Water Habitat, MWH=Modified Warm Water Habitat, LRW=Limited Resource Water

Land Use of the Ottawa River/Ten Mile Creek Watershed

In 2003 land use classifications produced by The University of Toledo for the Ottawa River watershed showed 38 percent of the land used by mixed juvenile vegetation. This vegetation type can be row crops in an early stage of growth, tracts of open space or yards. Forest and grassland account for 16 percent and 9 percent respectively, and 15 percent is in cultivated fields. Approximately 16 percent of the watershed has been developed for residential use, 5 percent for urban uses, and 2 percent for commercial/industrial uses.

2003 Land Use in the Ottawa River/Ten Mile Creek Watershed



Status of Beneficial Use Impairments

When the Maumee Area of Concern was defined in the late 1980s, the Maumee RAP Public Advisory Council determined which beneficial uses were impaired based on the entire AOC. This was done because the only way of delisting an AOC was a comprehensive one; all listed or all delisted. Now that there are alternative methods for incrementally delisting an AOC by watershed or impairment, the Maumee RAP needed to determine the BUIs by watershed. This was done using data and resources that were available before 1990. The two tables below summarize the BUIs impacting the Ottawa River Watershed in 1990 and 2004.

Following the BUI Summary Tables are maps of this watershed, including the jurisdictions, 14-digit HUCs, and custom-digitized river mile maps made specifically for the Maumee AOC watersheds.

The heart of this plan, the Watershed Project Tables (WPTs), is found in Volume 2. As explained in the Introduction, the WPTs are the living portion of the report that will change and grow, as projects are implemented and goals are attained. These tables have been organized by Causes and Sources and include Projects, Potential Project Partners, Funding Sources, Timeline, Status, Performance/Environmental Measures, HUC/Stream Segment Addressed, and indicate the Beneficial Use Impairment (BUI) that could be effected by the project. Also incorporated into the table (where

applicable) is a reference to the ODNR Coastal Management Measures that may benefit from the implementation of an identified project.

There are differing levels of detail in the WPTs, often depending on how soon a project will be implemented, what source will be funding it, or by the amount of data available for that watershed. The status of projects in the WPTs has been organized and color-coded as follows: **In Progress**, **Planning**, **Concept**, **Ongoing**, and **Complete**.

Beneficial Use Impairments In 1990
for the Ottawa River/Ten Mile Creek Watershed
(as determined in 2002)

Beneficial Use Impairments	Ottawa River	Shantee Crk	Silver Creek	Reasons/Data Source
BUI 1: Restriction on fish and wildlife consumption	Impaired			ODH Fish Advisories
BUI 2: Tainting of fish & wildlife flavor				
BUI 3: Degradation on fish and wildlife populations				
BUI 4: Fish tumors or other deformities	Impaired			1994 305(b) Report
BUI 5: Bird or animal deformities or reproductive problems				
BUI 6: Degradation of benthos				
BUI 7: Restriction on dredging activities	Unknown			
BUI 8: Eutrophication or undesirable algae				
BUI 9: Restrictions on drinking water consumption, or taste and odor	Not Impaired			
BUI 10: Beach closings	Impaired			1990 305(b) Report
BUI 11: Degradation of aesthetics				
BUI 12: Added cost to agriculture and industry				
BUI 13: Degradation of phytoplankton & zooplankton populations				
BUI 14: Loss of fish and wildlife habitat	Impaired			

Possible answers – Impaired, Not Impaired, Unknown, Not Applicable

**Beneficial Use Impairments In 2005
for the Ottawa River/Ten Mile Creek Watershed**

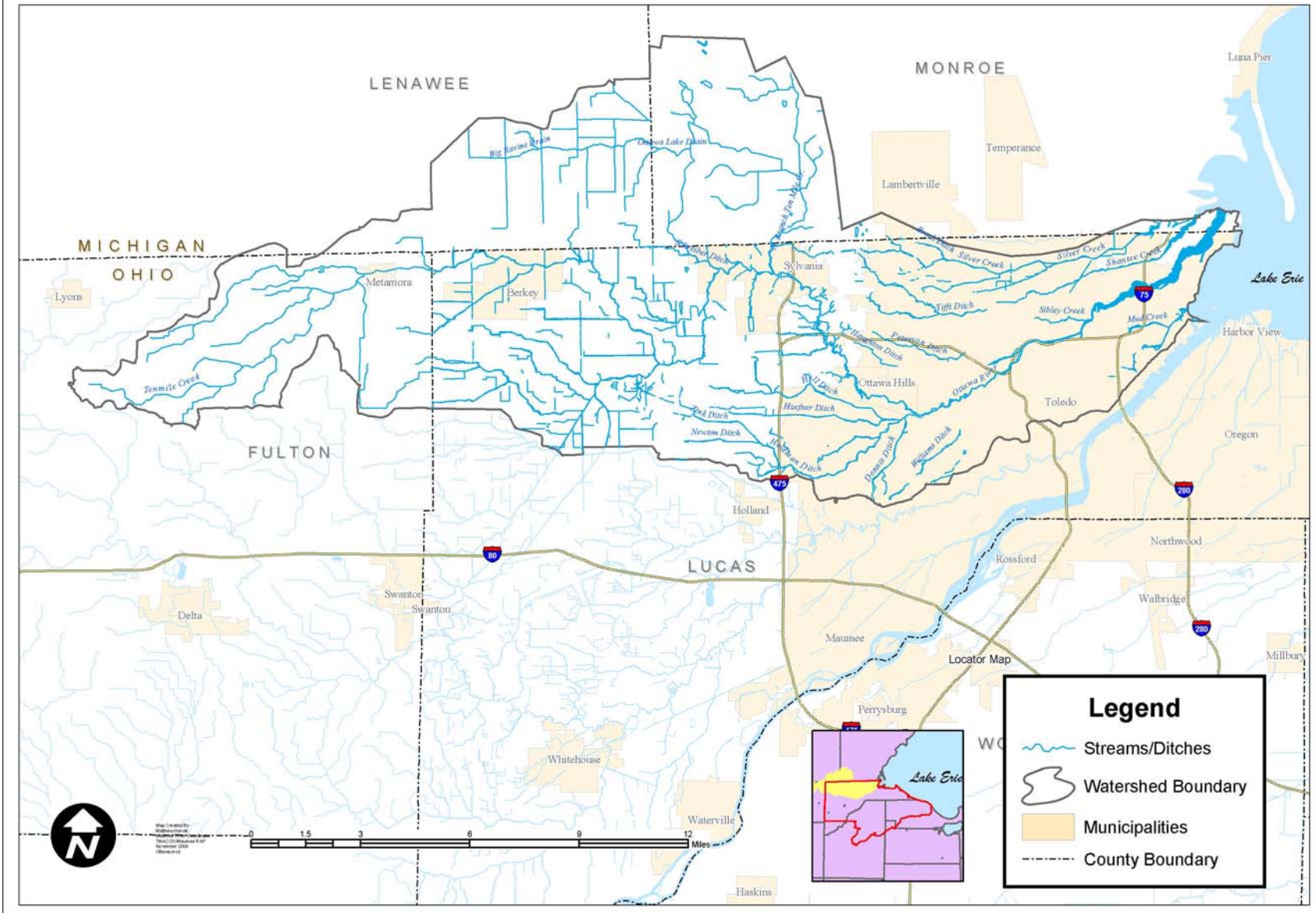
(last updated 12/1/05)

Beneficial Use Impairments	Ottawa River	Shantee Crk	Silver Creek	Reasons/Data Source
BUI 1: Restriction on fish and wildlife consumption	Impaired			Fish Consumption Advisory (FCA) from I-475 in Sylvania Twp to the mouth
BUI 2: Tainting of fish & wildlife flavor	Unknown			
BUI 3: Degradation on fish and wildlife populations	Impaired			Not sustainable populations
BUI 4: Fish tumors or other deformities	Impaired			Data review pending
BUI 5: Bird or animal deformities or reproductive problems	Unknown			
BUI 6: Degradation of benthos	Impaired			
BUI 7: Restriction on dredging activities	Impaired			Sediment contamination PCBs etc
BUI 8: Eutrophication or undesirable algae	Unknown			
BUI 9: Restrictions on drinking water consumption, or taste and odor	Not impaired			Public drinking water system in Metamora draws from a trib of Ten Mile Creek
BUI 10: Beach closings	Impaired			Contact advisory
BUI 11: Degradation of aesthetics	Impaired			CSO discharges
BUI 12: Added cost to agriculture and industry	Impaired			
BUI 13: Degradation of phytoplankton & zooplankton populations	Not applicable			
BUI 14: Loss of fish and wildlife habitat	Impaired			Removal of riparian vegetation - development

Possible answers – Impaired, Not Impaired, Unknown, Not Applicable

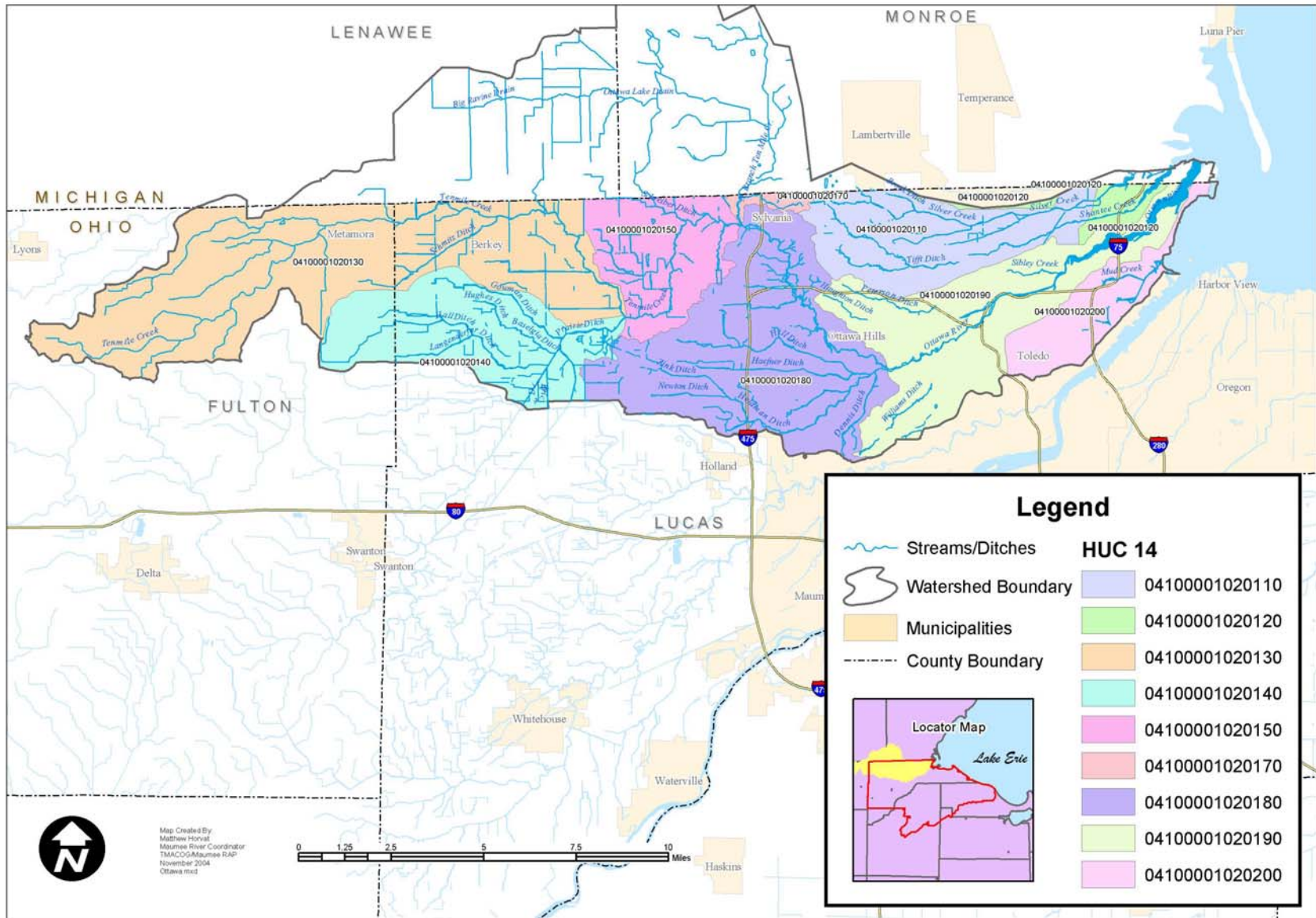
Ottawa River/Ten Mile Creek Watershed

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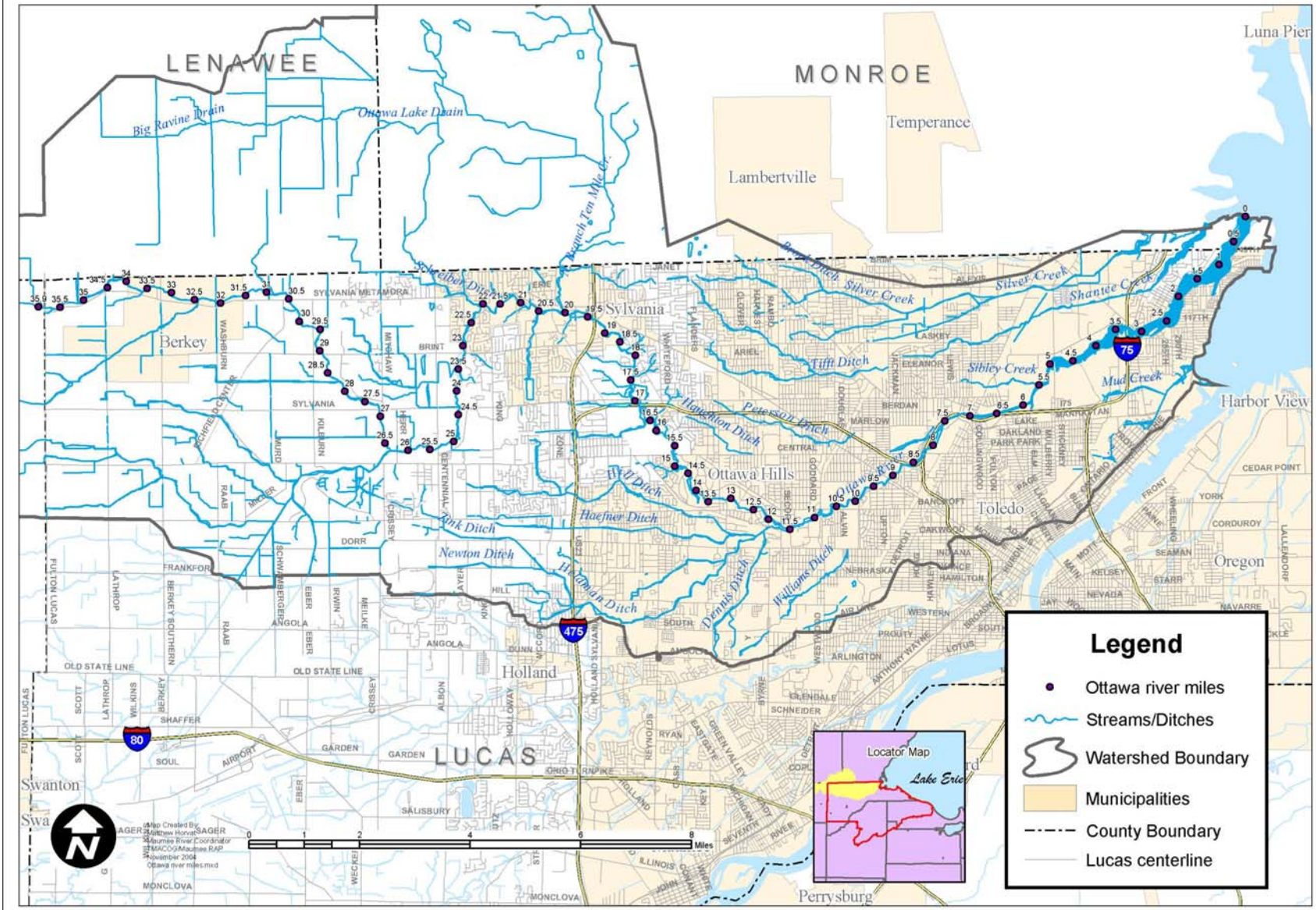
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Ottawa River/Ten Mile Creek Watershed - River Miles

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See Volume 2 for the:

- Ten Mile Creek/Ottawa River Watershed Projects Table
- Silver Creek and Shantee Creek Watershed Projects Table – NOT AVAILABLE

References

- ¹USDA Natural Resource Conservation Service website: <http://www.oh.nrcs.usda.gov/technical/>
- ² *A Study of Physical Features for the Toledo Regional Area*, Bowling Green State University Geology Department, Dr. Jane Forsyth, March 1968, pp 23-24.
- ³ USDA Natural Resource Conservation Service website: <http://www.oh.nrcs.usda.gov/technical/>
- ⁴ Ohio EPA, STORET Data, April 2004.
- ⁵ Ohio EPA, STORET Data, April 2004.
- ⁶ Ohio EPA, STORET Data, April 2004.
- ⁷ *Delisting Targets for Ohio Areas of Concern*, Ohio EPA, June 2005.
- ⁸ Ohio EPA, STORET Data, April 2004.
- ⁹ *Delisting Targets for Ohio Areas of Concern*, Ohio EPA, June 2005.
- ¹⁰ Ohio EPA, STORET Data, April 2004.
- ¹¹ *Delisting Targets for Ohio Areas of Concern*, Ohio EPA, June 2005.
- ¹² Ohio EPA, STORET Data, April 2004.
- ¹³ *Delisting Targets for Ohio Areas of Concern*, Ohio EPA, June 2005.
- ¹⁴ *Ohio EPA 305b Report*, Ohio EPA, 1996 and 2000.