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Table 1. Surface Water Quality Scoring and Grading System

Total Phosphorus (mg/l)	Bacteria (<i>E. coli</i> / 100 ml)	Benthic Score (FBI)	Points	Grades	Final Points	Final Grade
<0.020	0 - 30	0.00 - 4.25	5	A	> 4.5	A
0.020 - 0.030	31 - 100	4.26 - 5.00	4	B	3.5 - 4.5	B
0.031 - 0.060	101 – 300	5.01 - 5.75	3	C	2.5 - 3.4	C
0.061 - 0.180	301 - 1000	5.76 - 6.50	2	D	1.5 - 2.4	D
>0.180	>1000	6.51 - 10.00	1	F	<1.5	F

NOTES:

Final grades are determined by adding the points for each indicator and dividing by three.

Source: Conservation Ontario, 2022. *Guide to Developing 2023 Conservation Authority Watershed Report Cards.*

FBI = Family Biotic Index

Table 2. Surface Water Quality Grades

Watershed	Total Phosphorus (mg/L)					Bacteria <i>E.coli</i> CFU per 100 ml					Benthic (FBI)					2022 Final				
	2007	2012	2017	2022	2022	2007	2012	2017	2022	2022	2007	2012	2017	2022	2022	2022	2022	Grade	Status	
				Grade	Status				Grade	Status				Grade	Status					
Avon	0.128	0.116	0.155	0.174	D	Steady	415	315	378	309	D	Improved	6.23	5.93	5.79	5.77	D	Steady	D	Steady
Black	0.065	0.056	0.109	0.074	D	Improved	125	233	186	167	C	Steady	5.49	5.57	5.62	5.64	C	Steady	C	Steady
Cedar	0.154	0.110	0.093	0.151	D	Declined	414	389	370	383	D	Steady	7.11	6.98	7.33	7.04	F	Improved	D	Steady
Dingman	0.104	0.106	0.112	0.176	D	Declined	480	300	341	321	D	Steady	6.07	5.81	6.11	5.85	D	Improved	D	Steady
Dorchester	0.170	0.170	0.100	0.060	C	Improved	203	250	202	172	C	Steady	6.53	6.08	5.83	5.66	C	Improved	C	Improved
Fish	0.066	0.058	0.077	0.103	D	Steady	386	130	163	135	C	Steady	6.15	6.42	5.91	6.02	D	Steady	D	Steady
Flat	0.085	0.060	0.034	0.079	D	Declined	226	167	108	91	B	Steady	6.02	5.88	6.06	6.03	D	Steady	C	Steady
Forks	0.220	0.190	0.150	0.158	D	Steady	396	617	404	321	D	Improved	6.38	6.17	6.36	6.42	D	Steady	D	Steady
Fullarton	ND	0.060	0.135	0.053	C	Improved	ND	84	157	128	C	Steady	5.82	5.62	5.38	5.34	C	Steady	C	Improved
Gregory	0.067	0.047	0.086	0.121	D	Declined	155	133	162	211	C	Steady	5.46	6.03	5.49	5.87	D	Declined	D	Declined
Ingersoll	0.164	0.132	0.117	0.176	D	Declined	354	343	377	252	C	Improved	6.92	6.72	6.41	6.48	D	Steady	D	Steady
Komoka	0.032	0.032	0.025	0.040	C	Steady	304	288	167	219	C	Steady	6.26	6.03	5.45	5.48	C	Steady	C	Steady
Medway	0.155	0.120	0.070	0.059	C	Steady	157	184	174	157	C	Steady	6.20	5.87	5.99	5.96	D	Steady	C	Improved
Mid Thames	0.062	0.045	0.055	0.082	D	Steady	185	105	109	90	B	Steady	5.95	5.77	5.13	5.63	C	Declined	C	Steady
Mud	ND	0.037	0.068	0.059	C	Steady	ND	223	265	217	C	Steady	6.68	6.20	6.05	6.09	D	Steady	C	Improved
N Mitchell	0.169	0.165	0.144	0.180	D	Declined	394	252	256	223	C	Steady	6.48	6.28	5.79	5.92	D	Steady	D	Steady
N Woodstock	0.074	0.082	0.106	0.152	D	Declined	191	195	179	119	C	Improved	5.94	5.91	5.42	5.73	C	Declined	C	Steady
Otter	0.037	0.029	0.057	0.074	D	Steady	223	318	167	145	C	Steady	6.15	5.85	5.49	5.59	C	Steady	C	Steady
Oxbow	0.076	0.072	0.089	0.097	D	Steady	343	177	165	214	C	Steady	5.92	5.96	5.99	6.19	D	Steady	D	Steady
Plover Mills	0.077	0.087	0.114	0.115	D	Steady	99	35	80	75	B	Steady	5.66	5.60	4.99	5.37	C	Declined	C	Steady
Pottersburg	0.113	0.100	0.040	0.040	C	Steady	448	433	373	346	D	Steady	7.38	6.91	7.46	6.91	F	Improved	D	Steady
Reynolds	0.108	0.151	0.175	0.244	F	Declined	682	567	429	510	D	Steady	6.44	5.87	5.75	5.78	D	Steady	D	Declined
River Bend	0.140	0.135	0.163	0.192	F	Steady	143	202	245	176	C	Improved	6.19	5.90	6.22	6.69	F	Declined	D	Steady
Stoney	0.119	0.039	0.044	0.044	C	Steady	554	267	221	281	C	Steady	6.03	6.32	6.25	6.33	D	Steady	C	Steady
Trout	0.091	0.093	0.103	0.118	D	Steady	478	300	258	186	C	Improved	6.76	6.17	5.92	6.24	D	Declined	D	Steady
Waubuno	0.116	0.027	0.037	0.043	C	Steady	301	153	111	125	C	Steady	5.99	5.63	5.91	5.96	D	Steady	C	Steady
Whirl	ND	0.084	0.120	0.081	D	Improved	ND	153	238	193	C	Steady	6.04	5.81	5.67	5.69	C	Steady	C	Steady
Wye	0.098	0.138	0.184	0.127	D	Improved	249	161	170	141	C	Steady	6.12	5.80	5.84	6.17	D	Declined	D	Improved
Mean	0.108	0.091	0.099	0.110	D	Steady	316	249	231	211	C	Steady	6.23	6.04	5.91	5.99	D	Steady	D	Steady

NOTES:

See Table 1 for the scoring and grading grid.
 2022 Status shows change between the 2017 and 2022 watershed report cards (WRCs).
 2001 results based on 1996 - 2000 data; 2007 results based on 2001 - 2005 data; 2012 results based on 2006 - 2010 data; 2017 results based on 2011 - 2015 data; 2022 results based on 2016 - 2020 data; CFU = Colony Forming Unit. FBI = Family Biotic Index.

Table 3. Watersheds Sorted by Surface Water Quality Grades and Ranking

A (Points >4.5)	B (Points 3.5 - 4.5)	C (Points 2.5 - 3.4)	D (Points 1.5 - 2.4)	F (Points <1.5)
		Komoka Creek (3.0)	Fish Creek (2.3)	
		Fullarton (3.0)	Gregory Creek (2.3)	
		Plover Mills (3.0)	Wye Creek (2.3)	
		Middle Thames (3.0)	Oxbow Creek (2.3)	
		Dorchester (3.0)	Trout Creek (2.3)	
		Otter Creek (2.7)	North Mitchell (2.3)	
		Mud Creek (2.7)	Ingersoll (2.3)	
		Waubuno Creek (2.7)	Avon River (2.0)	
		Black Creek (2.7)	Forks (2.0)	
		Flat Creek (2.7)	Pottersburg Creek (2.0)	
		Medway Creek (2.7)	Dingman Creek (2.0)	
		North Woodstock (2.7)	River Bend (1.7)	
		Whirl Creek (2.7)	Cedar Creek (1.7)	
		Stoney Creek (2.7)	Reynolds Creek (1.7)	
		14 Watersheds	14 Watersheds	

NOTES:

Final grades are the average of the point scores for the three surface water quality indicators. Watersheds are listed in descending order of final points. Watersheds with equal final points are listed in descending order, based on a qualitative assessment of the three indicator results.

Table 4. Forest Conditions Scoring and Grading System

% Forest Cover	% Forest Interior	% Riparian Zone Forested	Points	Grade	Final Points	Final Grade
>35.0	>11.5	>57.5	5	A	>4.4	A
25.1 - 35.0	8.6 - 11.5	42.6 - 57.5	4	B	3.5 - 4.4	B
15.1 - 25.0	5.6 - 8.5	27.6 - 42.5	3	C	2.5 - 3.4	C
5.0 - 15.0	2.5 - 5.5	12.5 - 27.5	2	D	1.5 - 2.4	D
<5.0	<2.5	<12.5	1	F	<1.5	F

NOTES:

Final grades for forest conditions are determined by adding the points for each indicator and dividing by three.

This grading system has been developed by Conservation Ontario and is used by all CAs preparing standardized WRCs.

Source: Conservation Ontario, 2022, *Guide to Developing 2023 Conservation Authority Watershed Report Cards*.

Forest Information created by UTRCA and based on SWOOP 2015 ortho-imagery.

Table 5. Forest Conditions Grades

Watershed	Forest Cover		Forest Interior		Riparian Zone Forested		Final Grade	Change Status
	%	Grade	%	Grade	%	Grade		
Avon	11.0	D	2.5	D	30.6	C	D	slight improvement
Black	14.4	D	6.1	C	27.7	C	C	slight improvement
Cedar	11.1	D	2.4	F	37.5	C	D	slight decline
Dingman	12.1	D	1.0	F	34.4	C	D	steady
Dorchester	18.8	C	3.5	D	50.5	B	C	slight improvement
Fish	8.2	D	0.9	F	31.5	C	D	steady
Flat	10.3	D	0.9	F	35.0	C	D	steady
Forks	8.2	D	0.1	F	49.6	B	D	slight improvement
Fullarton	9.8	D	0.7	F	37.4	C	D	slight improvement
Gregory	7.8	D	0.3	F	29.0	C	D	steady
Ingersoll	10.9	D	1.3	F	39.8	C	D	steady
Komoka	19.8	C	2.4	F	44.3	B	C	steady
Medway	9.2	D	0.9	F	29.3	C	D	slight decline
Middle Thames	13.1	D	1.6	F	44.5	B	D	steady
Mud	11.4	D	1.3	F	41.2	C	D	steady
North Mitchell	4.7	F	0.4	F	12.0	F	F	steady
North Woodstock	11.4	D	1.6	F	35.0	C	D	slight improvement
Otter	9.6	D	0.9	F	34.3	C	D	slight decline
Oxbow	14.2	D	1.2	F	43.2	B	D	slight improvement
Plover Mills	11.5	D	0.5	F	37.6	C	D	slight improvement
Pottersburg	6.1	D	0.4	F	18.5	D	D	slight decline
Reynolds	10.7	D	1.3	F	31.9	C	D	steady
River Bend	20.0	C	1.7	F	55.3	B	C	steady
Stoney	10.7	D	0.8	F	33.6	C	D	slight improvement
Trout	17.6	C	2.3	F	48.5	B	C	slight improvement
Waubuno	11.5	D	1.1	F	37.9	C	D	steady
Whirl	7.2	D	0.7	F	18.6	D	D	slight improvement
Wye	8.0	D	0.7	F	34.7	C	D	steady
Watershed AVG	11.3	D	1.5	F	35.7	C	D	
EC Target	30.0	B	10.0	B	50.0	B	B	

NOTES:

2022 WRC data is based on 2015 spring colour aerial photography (digital ortho-imagery). UTRCA data.

See Table 4 for the scoring and grading system.

EC Guideline – Environment Canada guideline based on “How much habitat is enough?” 2013.

Forest cover has increased slightly in many watersheds due to improved mapping resolution and gains from forest succession (i.e., young plantations maturing to woodland). However, there has been real loss where woodlands (or parts of a woodland) have been removed and converted to other land uses. Forest loss is often seen a little here and a little there, which adds up.

Watershed boundaries were corrected in 2021 using Digital Elevation Modeling (LiDAR) software. Some watershed areas

have increased in size slightly and others have decreased. Overall, there is a 906 ha (0.9 km²) increase in the size of the Upper Thames River Watershed as compared to figures reported in earlier WRCs.

Chance Status since the 2017 WRCs is somewhat subjective and reflects the balance of forest gains and losses.

Summary of Indicator Grades for Forest Conditions

Number of	Cover	Interior	Riparian	Final
A's	0	0	0	0
B's	0	0	7	0
C's	4	1	18	5
D's	23	2	2	22
F's	1	25	1	1

Table 6. Watersheds Sorted by Forest Conditions Grades and Ranking

A (Points >4.5)	B (Points 4.5-3.5)	C (Points 3.4-2.5)	D (Points 2.4-1.5)	F (Points <1.5)
		Dorchester (3.0)	Avon (2.3)	North Mitchell (1.0)
		Black (2.7)	Forks (2.3)	
		Komoka (2.7)	Middle Thames (2.3)	
		River Bend (2.7)	Oxbow (2.3)	
		Trout (2.7)	Cedar (2.0)	
			Dingman (2.0)	
			Fish (2.0)	
			Flat (2.0)	
			Fullarton (2.0)	
			Gregory (2.0)	
			Ingersoll (2.0)	
			Medway (2.0)	
			Mud (2.0)	
			North Woodstock (2.0)	
			Otter (2.0)	
			Plover Mills (2.0)	
			Reynolds (2.0)	
			Stoney (2.0)	
			Waubuno (2.0)	
			Wye (2.0)	
			Pottersburg (1.7)	
			Whirl (1.7)	
		5 Watersheds	22 Watersheds	1 Watershed

NOTES:

Final grades are the average of the point scores for the three forest conditions indicators. Watersheds are listed in descending order of final points. Watersheds with equal final points are listed in alphabetical order.

Table 7. Watershed Area, Old Vs. New Measurements

Watershed	Old Watershed Area (2017)		New Watershed Area (2021)		Difference (New Minus Old)	
	ha	sq. km	ha	sq. km	ha	sq. km
Avon	16,790	168	16,277	163	-513	-5
Black	13,866	139	13,993	140	127	1
Cedar	9,515	95	9,725	97	210	2
Dingman	17,007	170	16,896	169	-111	-1
Dorchester	13,717	137	14,035	140	318	3
Fish	14,877	149	14,895	149	18	0
Flat	9,000	90	9,053	91	53	1
Forks	8,796	88	8,691	87	-105	-1
Fullarton	11,440	114	11,777	118	337	4
Gregory	5,917	59	5,995	60	78	1
Ingersoll	22,407	224	21,524	215	-883	-9
Komoka	2,145	21	2,263	23	118	2
Medway	20,492	205	20,475	205	-17	0
Middle Thames	17,120	171	17,449	175	329	4
Mud	15,650	157	15,444	154	-206	-3
North Mitchell	17,368	174	17,307	173	-61	-1
North Woodstock	24,563	246	24,702	247	139	1
Otter	5,873	59	5,973	60	100	1
Oxbow	8,899	89	8,748	88	-151	-1
Plover Mills	11,934	119	12,187	122	253	3
Pottersburg	4,548	45	4,753	48	205	3
Reynolds	15,246	152	16,904	169	1,658	17
River Bend	5,828	58	5,607	56	-221	-2
Stoney	3,776	38	3,799	38	23	0
Trout	16,189	162	15,933	159	-256	-3
Waubuno	10,507	105	9,975	100	-532	-5
Whirl	13,019	130	13,309	133	290	3
Wye	5,574	56	5,282	53	-292	-3
Total	342,063	3,421	342,969	3,430	906	9

NOTES:

New: New watershed areas created by UTRCA using 2017 Digital Terrain Model on 2015 ortho-imagery.

Difference in area (New Minus Old): Negative results mean the new area is smaller than the old (previous) area measurement.

Table 8. Watershed Area Information

Watershed	Area (ha)	Area (sq. km)	% of Total Watershed	Area Lying Upstream (sq. km)	Receiving Branch of the Thames River
Avon	16,277	163	4.7		North Thames
Black	13,993	140	4.1		North Thames
Cedar	9,725	97	2.8		South Thames
Dingman	16,896	169	4.9		Thames River
Dorchester	14,035	140	4.1	1,205	South Thames
Fish	14,895	149	4.3		North Thames
Flat	9,053	91	2.6		North Thames
Forks	8,691	87	2.5	2,879	Confluence of North and South Thames to form the Thames
Fullarton	11,777	118	3.4	700	North Thames
Gregory	5,995	60	1.7		North Thames
Ingersoll	21,524	215	6.3	513	South Thames
Komoka	2,263	23	0.7		Thames River
Medway	20,474	205	6.0		North Thames
Middle Thames Cor.	17,449	175	5.1	154	Middle and South Thames
Mud	15,444	154	4.5		Middle Thames
North Mitchell	17,307	173	5.0		North Thames
North Woodstock	24,702	247	7.2		South Thames
Otter	5,973	60	1.7		North Thames
Oxbow	8,748	88	2.6		Thames River
Plover Mills	12,187	122	3.6	1,169	North Thames
Pottersburg	4,753	48	1.4		South Thames
Reynolds	16,904	169	4.9		South Thames
River Bend	5,607	56	1.6	3,246	Thames River
Stoney	3,799	38	1.1		North Thames
Trout	15,933	159	4.6		North Thames
Waubuno	9,975	100	2.9		South Thames
Whirl	13,309	133	3.9		North Thames
Wye	5,282	53	1.5		North Thames
Total	342,970	3,430	100.0		

NOTES:

Cor. = Corridor (e.g., not a true subwatershed but a section of the Thames River or its main branches and associated lands draining to that corridor section).

Watershed areas based on 2017 Digital Terrain Model based on 2015 ortho-imagery, completed by UTRCA staff. Watershed areas calculated using GIS software.

Table 9. Municipalities within each Watershed

Watershed	Municipalities in declining order of area	% of Watershed	Watershed	Municipalities in declining order of area	% of Watershed
Avon	Perth East (84) Perth South (51) Stratford (28)	51 31 17	North Mitchell	West Perth (161) Perth East (4) North Perth (5) Huron East (3)	93 2 3 2
Black	Perth East (104) West Perth (17) Perth South (19)	74 12 14	North Woodstock	East Zorra-Tavistock (143) Perth East (41) Blandford-Blenheim (37) Woodstock (25)	58 17 15 10
Cedar	Norwich (45) Southwest Oxford (31) Woodstock (21)	47 32 21	Otter	Perth South (60)	100
Dingman	London (126) Thames Centre (31) Middlesex Centre (12)	75 18 7	Oxbow	Middlesex Centre (86) London (2)	98 2
Dorchester Cor.	Thames Centre (106) Zorra (19) London (16)	75 13 12	Plover Mills Cor.	Perth South (45) Thames Centre (42) St. Marys (10) Zorra (9) London (5) Middlesex Centre (4) Lucan-Biddulph (3)	37 36 8 7 5 4 3
Fish	Perth South (91) South Huron (27) West Perth (16) Lucan-Biddulph (14)	61 18 11 10	Pottersburg	London (29) Thames Centre (19)	61 39
Flat	West Perth (65) Perth South (26)	71 29	Reynolds	South-West Oxford (109) Thames Centre (52) Malahide (5) Norwich (3) Ingersoll (1)	64 31 3 2 <1
Forks Cor.	London (87)	100	River Bend Cor.	London (29) Middlesex Centre (16) Strathroy-Caradoc (11)	52 29 19
Fullarton Cor.	West Perth (76) Perth South (42)	64 36	Stoney	Middlesex Centre (20) London (18)	53 47
Gregory	Thames Centre (31) Zorra (28) Perth South (1)	52 47 2	Trout	Zorra (70) Perth South (52) Perth East (34) St. Marys (3) Stratford (<1)	44 33 21 2 <1
Ingersoll Cor.	South-West Oxford (94) Zorra (76) East Zorra-Tavistock (25) Ingersoll (12) Woodstock (7) Thames Centre (1)	44 35 12 6 3 1	Waubuno	Zorra (47) Thames Centre (43) London (9)	47 43 9
Komoka	Middlesex Centre (14) Strathroy-Caradoc (9)	61 39	Whirl	Perth East (90) West Perth (43)	67 33
Medway	Middlesex Centre (134) Lucan-Biddulph (39) London (19) Thames Centre (13)	65 19 9 6	Wye	Thames Centre (53)	100
Middle Thames	Zorra (175)	100			
Mud	Zorra (109) East Zorra-Tavistock (46)	71 29			

NOTES:

Figures in brackets () represent the area in sq. km of the watershed that lies in each municipality.

The % of Watershed is the fraction that each municipality makes up of the watershed.

Municipal boundaries were supplied by Land Information Ontario. These boundaries may not reflect the boundaries adopted by the Municipalities and slight variations in areas may exist between data sets. Information licensed under the Open Government License - Ontario (<https://www.ontario.ca/page/open-government-licence-ontario>)

Source: UTRCA data. Watershed areas based on 2017 Digital Terrain Model (UTRCA data).

Table 10. Watersheds Within Each Municipality

Municipality	Subwatersheds	Municipality	Subwatersheds
Malahide	Reynolds (5)	Oxford Continued	
Huron		Norwich	Cedar (45) Reynolds (3) North Woodstock (<1)
South Huron	Fish (27)	South-West Oxford	Reynolds (109) Ingersoll (94) Cedar (31)
Huron East	North Mitchell (3)	Zorra	Middle Thames (175) Mud (109) Ingersoll (76) Trout (70) Waubuno (47) Gregory (28) Dorchester (18) Plover Mills (7) North Woodstock (<1)
Ingersoll	Ingersoll Corridor (12) Reynolds (1)	Perth	
London	Dingman (126) Forks (87) River Bend (29) Pottersburg (29) Medway (19) Stoney (18) Dorchester Corridor (16) Waubuno (9) Plover Mills (7) Oxbow (2)	North Perth	North Mitchell (5) Black (104) Whirl (90) Avon (84)
Middlesex		Perth East	North Woodstock (41) Trout (34) North Mitchell (4) Fish (91) Otter (60) Trout (52) Avon (51) Plover Mills (45) Fullarton (42) Flat (26) Black (17) Gregory (1)
Lucan-Biddulph	Medway (39) Fish (14) Plover Mills (3)	Perth South	North Mitchell (161) Fullarton (76) Flat (65) Whirl (43) Black (19) Fish (16)
Middlesex Centre	Medway (134) Oxbow (86) Stoney (20) River Bend (16) Komoka (14) Dingman (12) Plover Mills (5) River Bend (11) Komoka (9) Dorchester (106) Wye (53) Reynolds (52) Waubuno (43) Plover Mills (44) Gregory (31) Dingman (31) Pottersburg (19) Medway (13) Ingersoll (1)	West Perth	
Strathroy-Caradoc		St. Marys	Plover Mills (10) Trout (3)
Thames Centre		Stratford	Avon (28) Trout (<1)
Oxford		Woodstock	North Woodstock (25) Cedar (21) Ingersoll (7)
Blandford-Blenheim	North Woodstock (37)		
East Zorra-Tavistock	North Woodstock (143) Mud (46) Ingersoll (25)		

NOTES:

Figures in brackets () represent the area in sq. km of the subwatershed that lies in each municipality. Municipal boundaries were supplied by Land Information Ontario. These boundaries may not reflect the boundaries adopted by the Municipalities and slight variations in areas may exist between data sets. Information licensed under the Open Government License - Ontario (<https://www.ontario.ca/page/open-government-licence-ontario>)

Watershed areas based on 2017 Digital Terrain Model (UTRCA data).

Table 11. Watershed Area by County, City, and Town

Middlesex	Oxford	Perth	Huron	Elgin
Dingman (43) Dorchester (106) Fish (14) Gregory (31) Ingersoll (1) Komoka (14) Medway (186) Oxbow (86) Plover Mills (52) Pottersburg (19) Reynolds (52) River Bend (16) Stoney (20) Waubuno (43) Wye (53)	Cedar (76) Dorchester (18) Gregory (28) Ingersoll (195) Mid Thames (175) Mud (155) N Woodstock (180) Plover Mills (7) Reynolds (112) Trout (70) Waubuno (47)	Avon (135) Black (140) Fish (107) Flat (91) Fullarton (118) Gregory (1) North Mitchell (170) N Woodstock (41) Otter (60) Plover Mills (45) Trout (86) Whirl (133)	Fish (27) North Mitchell (3)	Reynolds (5)
Total Area (km²) of UTRCA Watersheds by County				
Total (756)	Total (1,063)	Total (1,127)	Total (30)	Total (5)

London	Ingersoll	St. Marys	Stratford	Woodstock
Dingman (126) Dorchester (16) Forks (87) Medway (19) Oxbow (2) Plover Mills (7) Pottersburg (29) River Bend (29) Stoney (18) Waubuno (9)	Ingersoll (12) Reynolds (1)	Plover Mills (10) Trout (3)	Avon (28) Trout (<1)	Cedar (21) Ingersoll (7) N Woodstock (25)
Total Area (km²) of UTRCA Watersheds by City or Town				
Total (342)	Total (13)	Total (13)	Total (28)	Total (53)

NOTES:

Figures in brackets () represent the area in sq. km of the watershed within the municipality.

Watershed areas based on 2017 Digital Terrain Model (UTRCA data).

Municipal boundaries were supplied by Land Information Ontario. These boundaries may not reflect the boundaries adopted by the Municipalities and slight variations in areas may exist between data sets. Information licensed under the Open Government License - Ontario (<https://www.ontario.ca/page/open-government-licence-ontario>)

Table 12. Major Watercourses, Creeks, and Drains

Watershed	Creeks and Drains	Tributary of
Avon	Avon, Dunseith, Douglas, Roadhouse, Hislop, Court, Kuhns, Central School, Sheerer	North Thames
Black	Black, Schellenberger, Ehgoetz, Centre Black, Corcoran, East Black, Cawston	North Thames
Cedar	Cedar, Mud, Yeoman, Lampman, Sweaburg, Rice, Harvey	South Thames
Dingman	Dingman, College, Anquish, Kransnicki, CB Smith, Pincombe, Bannister Johnson, Murray, Elliot-Laidlaw, Hampton/Scott, Moore	Thames
Dorchester	South Thames, A Lawson, Fekete, Harris-Connors, Shaw, Crocket Munro, Hunt, Dorchester Pond, Lawton, Caddy, Norsworthy, Caddybott, Day-McCleod	South Thames
Fish	Fish, Rathburn, Nineteen, Berry, Youngson, Hodgins, Morphy, Blackler, Washburn, Stone, Gardiner	North Thames
Flat	Flat, Murray-McIntosh, Sparling, Twelfth Concession, Russeldale, Hocking, Parson, Mahaffy	North Thames
Forks	Thames, West Mud, Trott Award, The Coves, South Thames, Dayus, North Thames, Masonville, McNay, Meander	Thames
Fullarton	North Thames, Hepburn, Motherwell, Ballentyne, Apel	North Thames
Gregory	Gregory, Pickel, Murray, Wakem, Cole	North Thames
Ingersoll	South Thames, Dick-Telfer, Whittings, Halls, Henderson, WW Sutherland, Patterson & Robbins, Foster, Carr, Hendry, Golspie, Thornton, Huggins, Hart, Walker, Moon, Sally	South Thames
Komoka	Komoka, Walters-Arnold	Thames
Medway	Medway, Snake, Colbert, Medway East Branch, Mills-Guest, Needham-Moir, Needham, White-Fitzgerald, Dickenson, Edgewood, Elginfield, Cook	North Thames
Middle Thames	Middles Thames, Golding-Baigent, Woods, Quinn, Arthur Vannater, Borland, Pearson & Cucksey, Nissouri, McCall-McCorquodale, McKenzie, Munroe	South Thames
Mud Creek	Mud, Embro, H-Veale, North Branch West, Youngsville, McRae, Swanson, Maplewood, Burns-Master, Dibble	Middle Thames
North Mitchell	North Thames, Rolph, Northeast, Hagarty, Logan Road, Ritz, Northwest, Nicholson	North Thames
North Woodstock	South Thames, Lampman-Lock, Timms, Matheson, Scott, Laister, Trout, Phelan, Thames Ditch, Goring, Stan Erb, Wilhelm	South Thames
Otter	Otter, Shabel, Laing, Clifford, Richardson, Pollard, Herman, St. Pauls, Gillard, Gibb	North Thames
Oxbow	Oxbow (Springers), Mason, Ettrick, Holden, Flood, Patrick, Irwin	Thames River
Plover Mills	North Thames, Piper, McGuffin, Harris, Fox Schuller, Skinner, Sommerville, Sgarglia, Cooper, Barnette	North Thames
Pottersburg	Pottersburg, Flannigan, Beeton, Hunter, Bailey, Government, Lee	South Thames
Reynolds	Reynolds, Alex Wallis, Adam, Piney, Mud Lakes, Newell, North Branch Reynolds, Teskey, Deer, Warren	South Thames
River Bend	Thames, Van Hecke, GM Ireland, Kelly, Stanton	Thames River
Stoney	Stoney, Powell, West Stoney, Armitage, Harris, NE Stoney, Wonnacott	North Thames
Trout	Trout, Rolston, Bernard Murray, Harrington-West, McCorquodale-Innes, Young, Raper, Kerr Lupton, Hosford, Lowe, Lawtone, Rae, Central	North Thames
Waubuno	Waubuno, Crumlin, Taylor, Wellington-McLeod, Goarley, Pearson Sim, Buchner, Muir, Taylor Award	South Thames
Whirl	Whirl, Seeback, Watt, Thiel, Herboth, Schellenburger, Stock, Foley, Kuhryville, Rostock	North Thames
Wye	Wye, Duffin-Wakeling, Elliot, East Wye, Switzer, Wisemans	North Thames

NOTES:

Only major open watercourses (rivers, creeks, drains) included (i.e., not buried/tiled drains).

Source: UTRCA GIS data.

Table 13. Significant Natural Sites

Watershed	Evaluated Wetlands (Significant or Other)	Life Science ANSI (Provincial or Regional)	London ESA	Earth Science ANSI (Provincial or Regional)
Avon	(1) Little Lakes Wetland Complex (Sig)* (2) Gads Hill Swamp South (Sig) (3) Shakespeare Avon Wetland Complex (Other) (4) Stratford Wetland Complex (Other)	(5) Little Lakes Bog and Swamp Forest Complex (Reg)*		
Black	(1) Ellice Swamp (Sig)* (2) Gads Hill Swamp South (Sig) (3) Gads Hill Swamp North (Other) (4) Sebringville Woods (Other)	(1) Ellice Huckleberry Swamp (Reg)*		Carlingford Spillway (Prov) Warburg Road Cut (Prov) Seebach Hill Spillway (Reg)
Cedar	(1) Brick Ponds Wetland (Sig) (2) Cedar Creek Swamp (Sig) (3) Oxford Centre Swamp (Sig) (4) Thames River Wetland (Sig) (5) Cedar Creek Source Complex Part I (Other) (6) Cedar Creek Source Complex Part II (Other) (7) Gunn's Hill Rd Wetland TRT1 (Other)	(8) Trillium Woods Provincial Nature Reserve (Prov)		
Dingman	(1) Beattie Ponds Wetland Complex (Sig) (2) Hearns Wetland Complex (Sig) (3) Dingman Creek Fen Wetland Complex (Sig)* (4) Regina Mundi Kirk-Cousins Wetland (Sig)* (5) Westminster Ponds/ Pond Mills Wetland Complex (Sig)* (6) Westminster Wetland Complex (Sig)* (7) Brigham Road Wetland (Sig) (8) Circle R Ranch (Sig) (9) Foster Ponds (Sig)* (10) North Talbot Wetlands (Sig) (11) Meadowlily Woods (Sig) (12) Mud Lakes Swamp (Sig)* (13) Decker Road Wetland (Other) (14) Silver Swamp ESA (Other)	(5) Westminster Ponds (Reg)* (9) Foster Ponds (Reg)* (12) Mud Lakes/ Dingman Lakes (Prov)*	(3) Dingman Creek Fen Wetland Complex ESA* (4) Regina Mundi/ Kirk Cousins Wetland ESA* (5) Westminster Ponds / Pond Mills ESA* (6) Tenants Pond ESA* (part of Westminster Wetlands) (15) Delaware East Woodland ESA (16) Lower Dingman Corridor ESA (17) East Lambeth Forest ESA	Kilworth Lake Maumee (Prov)
Dorchester	(1) South Dorchester Swamp (Sig)* (2) Putnam/Ivey Tract (Sig) (3) Meadowlily Woods (Sig)* (4) North Dorchester Swamp (Sig) (5) Tamarack Swamp (Sig) (6) Banner Swamp (Other) (7) West Nissouri Swamp WN2D (Other)	(1) Dorchester Swamp (Prov)*	(3) Meadowlily Woods ESA*	

Table 13. Significant Natural Sites (Continued)

Watershed	Evaluated Wetlands (Significant or Other)	Life Science ANSI (Provincial or Regional)	London ESA	Earth Science ANSI (Provincial or Regional)
Fish				Prospect Hill Moraine Topography (Reg) Science Hill Hummocky Topography (Reg) Lucan Moraine (Prov)
Flat	(1) McGrath Swamp (Other)			Staff Kame Complex (Prov) North Thames Valley (Prov) Staffa-Dublin Moraine (Prov, Candidate) Fullarton Moraine (Prov, Candidate)
Forks	(1) Westminster Ponds/Pond Mills Wetland Complex (Sig)* (2) Arva Moraine Wetland Complex (Sig)* (3) Highbury Swamp (Sig)	(4) Westminster Ponds (Reg) (8) Byron Bog	(1) Westminster Ponds/ Pond Mills ESA* (2) Arva Moraine ESA* (5) Kilally Meadows ESA (6) The Coves ESA (7) Meadowlilly Woods ESA (8) Sifton Bog ESA	
Fullarton	(1) Motherwell Blue Heron Swamp (Other)			Fullarton Moraine (Prov, Candidate) North Thames Valley (Prov)
Gregory	(1) Lakeside Wildwood Complex (Sig) (2) Belton/Wellburn Swamp WN10D (Other)	(3) St. Ives River Valley (Reg ANSI)		
Ingersoll	(1) Five Points Woods (Sig) (2) Golspie Swamp (Sig) (3) Foldens Swamp (Sig) (4) Burgess Park Wetland (Sig) (5) Thames River Wetland (Sig) (6) Heslop Swamp (Other) (7) Rayside Swamp (Other)	(8) Trillium Woods Provincial Nature Reserve (Prov ANSI) (9) Karn's Maple Bush (Reg ANSI)		Stelco Quarry, Stelco Company of Canada (Prov)
Komoka	(1) Komoka/South Strathroy Creek Wetlands (Sig)			Komoka Lake Maumee (Prov)
Medway	(1) Arva Moraine Wetland Complex (Sig) (2) Elginfield Wetland (Other) (3) Maple Grove Swamp (Other) (4) Valleyview / Plover Mills Wetland WN18D (Other)		(5) Medway Valley Heritage Forest ESA (6) Arva Moraine ESA	Elginfield Area (Prov)

Table 13. Significant Natural Sites (Continued)

Watershed	Evaluated Wetlands (Significant or Other)	Life Science ANSI (Provincial or Regional)	London ESA	Earth Science ANSI (Provincial or Regional)
Middle Thames	(1) Kintore Swamp (Sig) (2) Lakeside Wildwood Complex (Sig)* (3) Golspie Swamp (Sig) (4) Medina Bush (Sig) (5) Banner Swamp (Other)	(2) Lakeside Swamp (Prov)* (6) Embro-Upland Forest / Unopened Twelfth Woodlots (Prov)		Thamesford Meltwater Channel (Prov)
Mud	(1) Lakeside Wildwood Complex (Sig) (2) Upper Mud Creek Banks Wetland (Other) (3) Middle Mud Creek Banks (Other) (4) Lower Mud Creek Banks (Other) (5) Youngsville Forest (Other) (6) Strathallan Swamp (Other) (7) Braemer Swamp (Other)			Mud Creek Meltwater Channel (Prov) Brooksdale Glacial Complex (Prov) Mud Creek and Braemer Outwash (Prov)
North Mitchell	(1) Kuhryville Wetland Complex (Other) (2) McKillop Northeast Wetland Complex (Other)			
North Woodstock	(1) Pittock Reservoir (Sig) (2) Central Whiteman/Horner Creek Complex (Sig) (3) Kenny Creek Wetland Complex GR15 (Sig) (4) Zorra Swamp (Other) (5) Lovey's Rd Wetland ZT26B (Other) (6) Duffy Drain Wetland (Other) (7) Stock Drain Wetland (Other)	(8) Fowlers Pond (Reg) (9) Trotters Lake (Prov)		Innerkip Quarry (Prov)
Otter	(1) Gillard Drain Wetland Complex (Sig) (2) Conroy Woods (Other)			
Oxbow	(1) Oxbow Creek Wetland (Sig) (2) Hyde Park Wetland (Other)	(3) Komoka Park Reserve /Springer Cr Woodlot (Prov ANSI)		Elginfield Area Moraines
Plover Mills		(1) St. Ives River Valley (Reg)		Rannock Road Cut (Reg)
Pottersburg	(1) Airport Wetlands WN11D (Other)			
Reynolds	(1) Five Points Woods (Sig) (2) Dereham Wetland Complex (Sig) (3) Deer Creek Wetland Complex (Sig) (4) North Crampton Swamp (Sig) (5) Lawson Swamp / Salford Woods (Sig)* (6) Mud Lakes Wetland Complex (Sig) (7) Sholdice Swamp (Sig) (8) Vershoyle Wetlands (Sig) (9) NW Crampton Wetlands (Other) (10) Avon Wetland (Other) (11) Zenda Tract (Other)* (12) Crampton Rd / Piney Cr Headwaters Wetland ND17E (Other)	(5) Salford Woods (Reg)* (11) Zenda Tract (Reg)*		

Table 13. Significant Natural Sites (Continued)

Watershed	Evaluated Wetlands (Significant or Other)	Life Science ANSI (Provincial or Regional)	London ESA	Earth Science ANSI (Provincial or Regional)
River Bend	(1) Sifton Bog (Sig)* (2) Komoka /South Strathroy Creek Wetland (Sig) (3) Dingman Creek Fen Wetland Complex (Sig)* (4) Komoka Park Wetland Complex (Sig)*	(1) Byron/Sifton Bog (Reg)* (4) Komoka Park Reserve (Prov)* (5) Kains Road River Valley (Reg)*	(5) Kains Woods ESA* (6) Warbler Woods ESA	Kilworth Lake Maumee (Prov)
Stoney	(1) Fanshawe Wetlands Complex (Sig)* (2) Arva Moraine Wetlands (Sig)		(1) Fanshawe Wetland ESA* (3) Ballymote Wetland ESA	
Trout	(1) Lakeside Wildwood Complex (Sig) (2) Gillard Drain Wetland Complex (Sig) (3) Little Lakes Wetland Complex (Sig) (4) Stratford Wetland Complex (Other) (5) Zorra Swamp (Other)	(6) Lakeside Swamp (Prov)		Brooksdale Glacial Complex (Prov) Wildwood Silts (Prov) Harmony Road Cut (Prov) Lakeside Moraine / Harrington Highlands (Other)
Waubuno	(1) Lakeside Wildwood Complex (Sig) (2) Cobble Hills Swamp (Sig)* (3) Medina Bush (Sig) (4) West Nissouri Swamp WN2D (Other) (5) Airport Wetlands WN11D (Other)	(2) Cobble Hills (Reg)*		
Whirl	(1) Brunner Complex (Other) (2) Whirl Creek Woods Wetland Complex (Other) (3) Kuhryville Complex			Brunner Spillway (Reg)
Wye				

NOTES:

The numbered sites are shown as a point on the corresponding WRC maps. The point represents an approximation of the location of the feature. Some features have many components (e.g., a complex of wetlands) so the point is a generalization of the centre point of the location of the overall feature. Some features may be located in more than one watershed.

*Asterisk signifies a site has more than one designation (e.g., wetland and ANSI) and is listed in more than one column with the same number identifier.

Evaluated Wetlands = Evaluated by MNRF. Sig = Provincially Significant Wetland; Other = Other wetlands (e.g., locally important).

ANSI = Area of Natural and Scientific Interest, Life Science or Earth Science categories. Prov - Provincial ANSI; Reg -- Regional ANSI designation. "Other" refers to a locally recognized Earth Science feature.

London ESA = Environmentally Significant Area (public or private).

Source: Wetlands (2021) and Earth and Life Science Areas of Scientific Interest (2021) from Open Government License, Ontario. London ESAs (2018) from City of London data.

Table 14. Land Cover Changes

Land Cover	2010	2015	2015-2010	2010	2015	2015-2010
	ha	ha	ha (change)	% watershed	% watershed	% watershed (change)
Agricultural Fields	228,405	229,308	903	66.6	66.9	0.3
Pasture	8,434	6,585	-1,849	2.5	1.9	-0.5
Orchard/Nursery	335	258	-77	0.1	0.1	0.0
Farmstead	7,968	7,529	-439	2.3	2.2	-0.1
Agriculture Total	245,142	243,679	-1,463	71.5	71.1	-0.4
Marsh	252	290	38	0.1	0.1	0.0
Meadow	9,030	8,513	-516	2.6	2.5	-0.2
Thicket	1,210	1,349	139	0.4	0.4	0.0
Woodland	38,231	39,061	831	11.2	11.4	0.2
Other Treed Areas	1,680	1,520	-160	0.5	0.4	0.0
Natural Vegetation Total	50,402	50,733	331	14.7	14.8	0.1
Open Space, Parkland	4,443	4,498	55	1.3	1.3	0.0
Golf Course	1,814	1,804	-10	0.5	0.5	0.0
Manicured Lands Total	6,257	6,302	45	1.8	1.8	0.0
Urban/Built-up	20,102	21,006	904	5.9	6.1	0.3
Rural Residential	1,576	1,687	110	0.5	0.5	0.0
Transportation	13,647	13,781	133	4.0	4.0	0.0
Built up/Transport Total	35,326	36,473	1,148	10.3	10.6	0.3
Aggregate Total	2,811	2,619	-192	0.8	0.8	-0.1
Water Total	2,824	2,955	131	0.8	0.9	0.0
Total	342,762	342,762	0	100.0	100.0	0.0

NOTES:

Aggregate: Disturbed lands associated with active extraction of aggregate (pits, quarries).

Agricultural Fields: Farm fields of primarily row crops or hay.

Built-up: Includes all lands within the urban setting that is not included in another land use type listed. The lands surrounding existing urban areas that are in the process of being cleared for development are included as built-up. In rural settings, built-up may include plots that are utility, industrial, etc., and contain no residential areas.

Farmstead: Residential area that usually has one or more barns present. All sizes of operation included. Polygons include buildings, lawns, and living spaces surrounding buildings.

Golf Courses: Includes all lands associated with the golf course.

Marsh: Wetland with standing water with visible vegetation inside.

Meadow: Naturally grassed areas (includes all meadow with wetlands).

Open Space: Includes urban parks (manicured and unkempt), recreational fields (e.g., baseball, soccer), school playgrounds, larger yards (e.g., lawn area around industries), pre-development sites, and cemeteries. The buildings associated with these areas (e.g., schools) are not included in these polygons.

Orchard/Nursery: Rows of larger-sized crops (e.g., trees, vines). These are similar in appearance to a young plantation but areas between rows and trees are bare or mowed (bright green in imagery).

Table 14. Land Cover Changes in the Upper Thames River Watershed Based on 2010 vs. 2015 Aerial Photography (Continued)

NOTES (Continued):

Other Treed Areas: Includes all hedge rows and small woodlands that do not fall into the previous natural heritage categories (e.g., Woodland). Only treed features included, not narrow meadow watercourse buffers.

Pasture: Grassy areas that can vary in grass length that are used/grazed by livestock.

Rural Residential: Rural residential homes and yards without an agricultural influence. Usually single homes with occasional smaller buildings (e.g., shed) on the parcel. Often strips of residences on rural roads. Polygons include buildings, lawns, and living spaces surrounding buildings.

Thicket: Also known as shrublands. Dominated by woody plants that do not grow to tree height (includes all thickets with wetlands).

Transportation: Roads, railways, and paved airport runways. In general, includes the road and railway plus the allowance (e.g., road and road shoulder/ditch).

Water: Waterbodies and watercourses greater than 20 metres wide (may vary to less than 20 metres in some areas). Includes ponds in retired aggregate pits.

Woodland: All coniferous, deciduous, mixed woodlots, connecting hedge rows, and plantations (includes all woodlands with wetlands) of at least 0.5 ha and 30m width.

Source: UTRCA data based on 2015 ortho-imagery.

Table 15. Land Cover by Watershed (2015 Photography)

Watershed	% of Watershed Area						Significant changes noted from 2010 to 2015 photography
	Agri.	Nat. Veg	Open Space, Golf	Urban, Built Up, Transport.	Aggr.	Water	
Avon	69	14	2	14	<1	1	
Black	79	16	0	4	<1	1	
Cedar	63	16	2	18	1	<1	0.5% less agri., 0.5% more urban
Dingman	50	19	4	26	0	1	1.5% less agri., 0.5% more open space, 0.7% more urban
Dorchester	55	24	3	14	2	2	0.5% less agri., 1% more urban
Fish	86	10	0	3	<1	<1	
Flat	85	12	0	3	<1	<1	
Forks	2	14	9	71	1	2	1% more nat. veg., 1% less open space
Fullarton	82	12	1	4	0	1	
Gregory	86	10	0	3	<1	0	
Ingersoll	69	16	2	11	3	1	0.5% more agri., 1% less nat. veg.
Komoka	47	28	4	15	2	6	2% less agri., 1% more nat. veg., 1% more urban, 1% less aggr.
Medway	77	12	2	9	<1	<1	0.6% less agri., 0.8% more urban
Middle Thames	76	16	1	4	2	<1	0.8% less agri., 0.5% more aggr.
Mud	81	14	1	4	<1	<1	
North Mitchell	89	6	1	4	<1	<1	
N Woodstock	74	14	1	9	<1	1	0.7% less agri., 0.4% more urban
Otter	82	12	1	4	1	1	0.7% less agri.
Oxbow	73	18	2	6	0	<1	
Plover Mills	63	18	3	8	3	4	0.8% less agri., 0.5% more nat. veg., 0.3% more urban
Pottersburg	44	9	9	38	0	<1	
Reynolds	78	15	1	6	<1	1	0.5% less agri., 0.5% more nat. veg., 0.3% more urban
River Bend	28	29	7	32	1	4	1.3% less agri., 1% more nat. veg., 1% less open space, 1.5% more urban, 0.3% more water
Stoney	51	16	6	23	4	1	1.3% less agri., 1.5% more urban
Watershed Average	71	15	2	11	1	1	0.4% less agri., 0.1% more nat. veg., 0.3% more built-up, 0.1% more water

Table 15. Land Cover by Watershed (2015 Photography) (Continued)

Watershed	% of Watershed Area						Significant changes noted from 2010 to 2015 photography
	Agri.	Nat. Veg	Open Space, Golf	Urban, Built Up, Transport.	Aggr.	Water	
Trout	70	22	1	5	1	2	
Waubuno	77	15	1	7	<1	<1	
Whirl	87	8	0	4	0	0	
Wye	80	11	1	7	1	1	0.8% less agri., 0.4% more open space, 1% more urban, 0.6% less aggr.
Watershed Average	71	15	2	11	1	1	0.4% less agri., 0.1% more nat. veg., 0.3% more built-up, 0.1% more water

NOTES:

Agriculture (Agri.): Includes crop fields, pasture, orchard/nursery, and farmsteads.

Natural Vegetation (Nat. Veg.): Includes marsh, meadow, thicket, woodland, and other treed areas.

Open Space, Golf: Includes urban/rural parks, recreational fields, school playgrounds, large lawn areas around industries, and cemeteries.

Urban/Built-up/Transport: Includes lands within urban settings, rural residential, industrial areas, all roads and railways, and paved airport runways

Aggregates (Aggr.): Active aggregate pits and quarries (disturbed land).

Water: Water bodies and water courses greater than 20 m wide; includes ponds in retired aggregate pits.

Source: UTRCA data based on 2015 ortho-imagery.

Table 16. Population, 2011, 2016, and 2021

Watershed	Population			Change 2016 to 2021		Area (sq. km)	2021 Population per sq. km
	2011	2016	2021	Population	%		
Avon	32,390	32,918	34,900	1,982	6%	163	214
Black	2,350	2,346	2,331	-15	-1%	140	17
Cedar	20,340	21,463	20,461	-1,002	-5%	97	210
Dingman	74,620	77,977	84,135	6,158	8%	169	498
Dorchester	16,870	16,662	21,313	4,651	28%	140	152
Fish	1,500	1,401	1,355	-46	-3%	149	9
Flat	600	588	623	35	6%	91	7
Forks	182,800	188,846	203,174	14,328	8%	87	2,338
Fullarton	1,430	1,490	1,723	233	16%	118	15
Gregory	680	674	687	13	2%	60	11
Ingersoll	20,870	22,147	25,113	2,966	13%	215	117
Komoka	1,460	1,807	3,285	1,478	82%	23	145
Medway	26,040	29,483	35,028	5,545	19%	205	171
Middle Thames	3,170	3,394	3,815	421	12%	175	22
Mud	2,460	2,480	2,513	33	1%	154	16
North Mitchell	4,870	4,814	4,685	-129	-3%	173	27
North Woodstock	21,500	23,225	28,645	5,420	23%	247	116
Otter	740	878	643	-235	-27%	60	11
Oxbow	3,210	3,478	3,370	-108	-3%	88	39
Plover Mills	5,670	5,915	6,746	831	14%	122	55
Pottersburg	25,680	25,334	29,121	3,787	15%	48	613
Reynolds	2,360	2,441	2,933	492	20%	169	17
River Bend	29,600	33,208	37,937	4,729	14%	56	677
Stoney	20,240	22,372	26,565	4,193	19%	38	699
Trout	3,600	3,701	3,391	-310	-8%	159	21
Waubuno	7,290	6,956	5,033	-1,923	-28%	100	50
Whirl	2,030	2,026	2,148	122	6%	133	16
Wye	1,270	1,541	2,025	484	31%	53	38
Total	515,640	539,565	593,699	54,134		3,430	
Average					10%		157

NOTES:

Population per watershed estimated by the UTRCA by combining population densities in the various dissemination blocks of the census data, overlaid with the watershed boundaries.

Watershed boundaries were updated using 2017 Digital Terrain Model, resulting in some watershed boundary corrections from the previous WRCs. As a result, some neighbourhoods/communities moved from one watershed to another. Notable changes: Pottersburg gained population from Waubuno and North Woodstock gained population from Cedar.

Source: Statistics Canada. 2022. Census Profile. 2021 Census of Population. Statistics Canada Catalogue number 98-316-X2021001. Ottawa. Released April 27, 2022.

www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (Accessed April 28, 2022).

Table 17. Soil Type (% Area)

Watershed	Bottom Land	Organic	Coarse Sand	Loamy Sand	Sandy Loam	Loam	Silt Loam	Silty Clay	Clay Loam	Not Mapped
Avon	7	4			1		78		10	1
Black	5	10					80		5	
Cedar		3			14	4	45		20	14
Dingman	8	1	5		8		15	44		20
Dorchester	6	7	10		38		16	12	2	9
Fish	7	1				10	18	8	56	
Flat	9					6	12		73	
Forks	1		3				1			95
Fullarton	8					2	50		39	1
Gregory	6	2	1		1		41	21	28	
Ingersoll	3	3			39	9	33		6	7
Komoka	2	4	6	63			8	5		12
Medway	6		3				32	20	33	6
Middle Thames	2	2			42	11	42			1
Mud	3	1			25	3	68		2	
N Mitchell	3	2					1		93	
N Woodstock	2	2		5	22	4	48		12	5
Otter	8	2				1	84		5	
Oxbow	9	1	3				49	22	15	1
Plover Mills	13		5			1	16	4	52	9
Pottersburg	1		6		8		17	2	11	56
Reynolds	2	5	1		9	5	10	19	48	1
River Bend	15		13	9	5		21	6	6	25
Stoney	9		16		4		36	1	13	22
Trout	7	4			10	3	42		33	2
Waubuno	6	1	5		12		58	2	13	5
Whirl	8						14		78	
Wye	10		12		2		43		33	1
Average	6	2	2	1	11	3	36	6	26	8

NOTES:

Figures represent the percentage of the watershed in each soil type.

“Not Mapped” usually refers to urban or built-up areas.

Source: Derived from Ontario Ministry of Agriculture, Food, and Rural Affairs data layer “Soils Ontario Version 1.0.”

Table 18. Physiography (% Area)

Watershed	Esker, Kame, Drumlin	Till Moraine	Sand Plain	Clay Plain	Drum-linized Till Plain	Undrum-linized Till Plain	Peat Muck	Spill-way	Water
Avon	6	4				75	3	12	1
Black		15				69	9	7	
Cedar	9	29			27			35	
Dingman		31	3	4		46		14	
Dorchester		13	3			27	1	55	1
Fish		9				75		16	
Flat		19				57		24	
Forks		18	19			7		54	2
Fullarton		12				71		17	
Gregory	3	6				89		2	
Ingersoll	9	6		1	62			22	
Komoka		6	90					4	1
Medway		16				67		16	
Mid Thames	7			1	54	16		23	
Mud	1				75			24	
N Woodstock	5	7		13	44	16		15	
North Mitchell	1	8		3	37	46		5	
Otter						100			
Oxbow		40	6			27		27	
Plover Mills		1	2			61		33	4
Pottersburg			66			22		11	
Reynolds		41				16		43	
River Bend		13	22			22		40	3
Stoney		6				45		49	
Trout	6	7		1	14	54		16	1
Waubuno	13	1	18			45		22	
Whirl		17				83			
Wye		6	4			75		14	
Average	2	12	3	1	17	42	1	21	0

NOTES:

Figures represent the percentage of the watershed area under each physiographic unit.

Source: Derived from Chapman, L.J. and D.F. Putnam, 1984. The Physiography of Southern Ontario.

Table 19. Soil Erosion and Delivery (% Area)

Watershed	Soil Loss Category			
	Unclassified	Low	Average	High
Avon	15	72	8	6
Black	3	86	6	5
Cedar	18	30	36	16
Dingman	28	57	11	5
Dorchester	13	67	8	13
Fish	1	87	6	6
Flat	1	83	6	10
Forks	95	4	1	0
Fullarton	3	79	5	13
Gregory	1	86	8	6
Ingersoll	12	48	23	16
Komoka	28	66	2	4
Medway	8	83	4	5
Middle Thames	3	58	17	21
Mud	2	65	13	20
North Mitchell	5	94	1	1
North Woodstock	9	64	12	15
Otter	2	82	11	6
Oxbow	2	76	12	10
Plover Mills	17	69	3	11
Pottersburg	53	47	0	0
Reynolds	5	46	23	26
River Bend	31	56	7	6
Stoney	20	70	5	5
Trout	7	69	8	16
Waubuno	6	83	5	6
Whirl	2	84	14	1
Wye	3	90	5	2
Average	14	68	9	9

NOTES:

Figures represent the potential for land to deliver specific volumes of soil to a watercourse based on modeling parameters such as slope and soil type.

Unclassified = unclassified lands (i.e., forested or urban/paved lands).

Low = 0.1 - 2.24 tonnes/ha of soil delivered to a watercourse per year.

Average = 2.25 - 6.7 tonnes/ha of soil delivered to a watercourse per year.

High = >6.7 tonnes/ha of soil delivered to a watercourse per year.

Source: Geomatics, Aug. 1991. SW Ontario Universal Soil Loss Equation GIS: A Manual to Accompany the GIS Database.

Table 20. Main Channel Slope

Watershed	Specific Watercourse(s)	Greatest Elevation (m)	Elevation at Outlet (m)	Fall in Elevation (m)	Length (m)	Slope (%)	Slope Description (comparative)
Avon	Avon River	389	310	79	30,740	0.26	low (flat)
Black	Black Creek	380	320	60	28,845	0.21	low (flat)
Cedar	Cedar Creek	319	278	41	15,108	0.27	low (flat)
	Mud Creek Drain	307	286	21	5,402	0.39	moderate
Dingman	Dingman Creek	290	207	83	34,411	0.24	low (flat)
Dorchester	South Thames River	318	238	80	29,022	0.28	low (flat)
	Humphrey Drain, Caddy Creek	322	255	67	20,019	0.33	moderate
	Big Swamp Drain	292	251	41	7,270	0.56	high (steep)
Fish	Fish Creek	332	285	47	25,669	0.18	very low (very flat)
Flat	Flat Creek	339	305	34	22,555	0.15	very low (very flat)
Forks	North Thames River and Thames River	277	226	51	28,300	0.18	very low (very flat)
	South Thames River and Thames River	238	226	12	13,085	0.09	very low (very flat)
Fullarton	North Thames River	361	304	57	22,212	0.26	low (flat)
	McEwan and 20th Concession Drain	358	319	39	11,090	0.35	moderate
Gregory	Gregory Creek	378	277	101	16,344	0.62	high (steep)
Ingersoll	South Thames River	340	259	81	29,244	0.28	low (flat)
Komoka	Komoka Creek	279	207	72	5,833	1.23	very high (very steep)
	Walter's Arnold Drain	246	237	9	7,156	0.13	very low (very flat)
Medway	Medway Creek	315	235	80	29,575	0.27	low (flat)
	Medway East Creek	312	263	49	21,904	0.22	low (flat)
Middle Thames	Middle Thames River	364	258	106	25,057	0.42	moderately high
	Nissouri Creek	370	288	82	11,849	0.69	high (steep)
Mud	Mud Creek	356	295	61	18,506	0.33	moderate
	North Branch Creek	354	295	59	20,081	0.29	low (flat)
North Mitchell	Northeast Drain	368	340	28	13,198	0.21	low (flat)
	North Thames River	356	331	25	20,912	0.12	very low (very flat)
	Ritz Drain	364	345	19	12,841	0.15	very low (very flat)
North Woodstock	South Thames River above reservoir	376	286	90	30,750	0.29	low (flat)
Otter	Otter Creek	372	304	68	16,941	0.40	moderately high
Average		331	272	60	19,649	0.37	moderate

Table 20. Main Channel Slope (Continued)

Watershed	Specific Watercourse(s)	Greatest Elevation (m)	Elevation at Outlet (m)	Fall in Elevation (m)	Length (m)	Slope (%)	Slope Description (comparative)
Oxbow	Oxbow Creek	313	217	96	26,461	0.36	moderate
Plover Mills	North Thames River	347	268	79	34,543	0.23	low (flat)
Pottersburg	Pottersburg Creek	310	239	71	19,583	0.36	moderate
Reynolds	Reynolds Creek	330	260	70	27,044	0.26	low (flat)
River Bend	Thames River	280	205	75	18,883	0.40	moderately high
	Van-Hecke Drain	249	207	42	4,231	0.99	very high (very steep)
	Stranton Drain	273	222	51	4,060	1.26	very high (very steep)
Stoney	Stoney Creek	293	239	54	10,629	0.51	high (steep)
Trout	Trout Creek	365	301	64	29,221	0.22	low (flat)
	Trout Creek above Wildwood reservoir	365	324	41	17,931	0.23	low (flat)
	Harrington Creek above Mill Pond	364	329	35	5,390	0.65	high (steep)
Waubuno	Waubuno Creek	375	242	133	29,405	0.45	moderately high
Whirl	Whirl Creek	383	330	53	29,516	0.18	very low (very flat)
Wye	Wye Creek	335	262	73	14,085	0.52	high (steep)
Upper Thames	South Thames River & Thames River (Tavistock to Delaware)	376	205	171	112,000	0.15	very low (very flat)
Average		331	272	60	19,649	0.37	moderate

NOTES:

All values are approximate. Data collected from SWOOP 2015 Ortho Digital Elevation Model (DEM) by randomly picking an elevation at the top of each watershed and at the mouth of the watershed outlet.

Greatest Elevation (m) was manually captured from a DEM at the top end of the main watershed channels

Elevation at Outlet (m) was manually captured from a DEM at the mouth of the watercourse, either where it meets the Thames or connecting channel.

Fall in Elevation (m) defines the difference in metres from the Outlet to the Greatest Elevation.

Length (m) is "as the crow flies", manually measured from the location of greatest elevation and following the main watercourse to the outlet.

Percent Slope = Fall divided by Length

Slope Description based on the range in Upper Thames subwatersheds: 0.09-0.19 = very low (flat), 0.20-0.29 = low (flat), 0.30-0.39 = moderate, 0.40-0.49 = moderately high, >0.50-0.69 = high (steep), >0.70 = very high (very steep).

Upper Thames slope was calculated using the highest point in North Woodstock to the outlet at River Bend.

Range for Upper Thames subwatersheds (all data above) is 0.09 to 1.26%.

Table 21. Impervious Cover (% Area)

Watershed	Watershed Area (ha)	Impervious Area (ha)	% Watershed in Impervious Cover
Avon	16,277	1,152	7.1
Black	13,993	266	1.9
Cedar	9,725	941	9.7
Dingman	16,896	2,251	13.3
Dorchester	14,035	881	6.3
Fish	14,895	239	1.6
Flat	9,053	132	1.5
Forks	8,691	3,439	39.6
Fullarton	11,777	253	2.1
Gregory	5,995	121	2.0
Ingersoll	21,524	1,197	5.6
Komoka	2,263	114	5.1
Medway	20,475	888	4.3
Middle Thames	17,449	470	2.7
Mud	15,444	344	2.2
North Mitchell	17,307	364	2.1
North Woodstock	24,702	1,113	4.5
Otter	5,973	119	2.0
Oxbow	8,748	240	2.7
Plover Mills	12,187	460	3.8
Pottersburg	4,753	1,094	23.0
Reynolds	16,904	528	3.1
River Bend	5,607	779	13.9
Stoney	3,799	432	11.4
Trout	15,933	392	2.5
Waubuno	9,975	348	3.5
Whirl	13,309	288	2.2
Wye	5,282	151	2.9
Total	342,969	18,994	
Average			5.5

NOTES:

Impervious surface areas includes features that do not allow water to readily infiltrate into the ground. These features include buildings, roads, sidewalks, driveways, and parking lots.

Source: The impervious surface mapping was created using 2015 ortho-imagery by the UTRCA.

Table 22. Mean Yearly Stream Flow, 2016 to 2020

Mean Yearly Flow (cubic metres per second - cms) at Thames Watershed Stations, 2016 to 2020

Watershed	Station Name	Station ID	2016	2017	2018	2019	2020	Long-Term Mean Record
Avon	Avon River below Stratford	02GD018	1.6	2.0	2.4	2.2	1.5	2.0
Black								
Cedar	Cedar at Woodstock	02GD011	inc.	inc.	1.3	1.5	1.1	1.0
Dingman	Dingman below Lambeth	02GE005	1.5	1.7	2.1	1.9	1.6	1.6
Dorchester	Thames near Ealing	02GD001	15.4	18.1	21.3	20.4	15.6	15.5
Fish	Fish near Prospect Hill	02GD010	1.7	1.9	2.8	2.1	1.7	1.9
Flat								
Forks	Thames River at Byron**	02GE002	39.6	48.2	53.3	50.2	37.7	41.8
Fullarton	North Thames at St. Marys	02GD005	13.0	16.9	17.6	15.6	11.9	14.2
Gregory								
Ingersoll	Thames at Ingersoll	02GD016	5.6	6.8	7.3	7.6	5.6	6.0
Komoka								
Medway	Medway at London	02GD008	2.4	2.6	3.8	3.3	2.1	2.6
Middle Thames	Middle Thames at Thamesford	02GD004	3.7	4.5	5.4	5.0	3.4	3.9
Mud								
North Mitchell	North Thames near Mitchell	02GD014	4.1	5.3	4.9	4.3	3.7	4.5
North Woodstock	Thames at Innerkip	02GD021	1.9	2.3	2.7	3.3	1.7	2.0
Otter								
Oxbow	Oxbow near Kilworth	02GE008	1.0	1.1	1.7	1.4	0.9	1.2
Plover Mills	North Thames near Thorndale	02GD015	17.2	21.4	23.0	20.3	15.4	17.9
Pottersburg								
Reynolds	Reynolds near Putnam	02GD027	1.5	1.8	2.3	2.4	2.0	1.8
River Bend	see Forks, Thames at Byron							
Stoney	Stoney Creek at London	02GD028	0.4	0.4	0.6	0.5	0.4	0.5
Trout	Trout near St. Marys	02GD009	1.8	2.3	2.3	2.4	1.6	1.9
Waubuno	Waubuno near Dorchester	02GD020						1.1
Whirl								
Wye	Wye near Thorndale	02GD013						0.5
Average Annual Flow			7.0	8.6	9.6	8.9	6.7	7.4
Avg Annual Flow divided by Long Term Mean Flow of 7.4 cms			0.9	1.2	1.3	1.2	0.9	
Wetter or drier compared to 5 yr mean flow			drier	wetter	wetter	wetter	drier	

NOTES:

inc. = incomplete data set.

Where a watershed has more than one flow station, the most downstream station data is shown above.

*Station retired. Only the previous long-term mean is available.

**The Thames River at Byron station is the farthest downstream station within the Upper Thames (see Forks).

Long-Term Record Mean = mean of all available data for that station. The number of years varies by station.

Source: HYDAT.

Source: HYDAT data from Environment Canada, Water Survey of Canada, www.wateroffice.ec.gc.ca/search/historical_e.html.

See Table 22 for more details on stream gauges.

Table 23. Stream Flow Gauges and Weather Stations

Watershed	Real Time Data							Sample Data
	Station Name	River Stage, Water level	Tipping Bucket Rain Gauge	Air Temp	Other Data	Accum. Precip. (snow/ rain)	Snow Depth*	Snow
Avon	Avon Upstream	X	X	X	X			
	Orr Dam	X	X					
	Avon	X	X	X	X			
Black	--							Sebringville
Cedar	Cedar	X						
Dingman	Dingman Upstream	X						
	Dingman Below Lambeth	X	X	X	X			
	Dingman Cr., White Oak Rd.*	X*						
	White Oak Dr., Blakie Rd.*	X*						
	Thornicroft Dr., Hamlyn St.*	X*						
	Dingman Roundhouse*			X*	X	X*	X*	
Fish	Fish	X		X				Kirkton
	Woodham/ Kirkton		X	X				
Flat	--							
Forks	Below Fanshawe Dam	X						
	Byron	X		X				
	Ealing	X						
	Coves Pond	X						
	Thames at Coves	X						
Fullarton	Mitchell PC					X		Fullarton
	Mitchell	X	X	X				
Ingersoll	Ingersoll	X	X					Foldens
	Pittock Dam	X	X		X			
Medway	Medway	X	X					Observatory
Middle Thames	Thamesford	X	X					Kintore and Embro
Total		34	21	19		3	2	11

Table 23. Stream Flow Gauges and Weather Stations (Continued)

Watershed	Real Time Data							Sample Data
	Station Name	River Stage, Water level	Tipping Bucket Rain Gauge	Air Temp	Other Data	Accum. Precip. (snow/rain)	Snow Depth*	Snow
Mud	Highland Garage		X	X	X	X		
North Mitchell	Mitchell Dam	X						Bornholm + Mitchell
	Milverton					X*	X*	
North Woodstock	Tavistock	X	X					Woodstock
	Innerkip	X	X	X				
Oxbow	Oxbow	X	X	X	X			
Plover Mills	Plover Mills	X	X	X				Hwy 7 and Fanshawe
	St. Marys	X	X	X				
	Fanshawe Dam	X	X	X	X			
	Highway 7		X	X	X	X		
Pottersburg	Pottersburg	X						
Reynolds	Reynolds	X	X	X				
Stoney	Stoney	X		X				
Trout	Wildwood Dam	X						Wildwood
	Below Wildwood	X		X				
	Fairview	X	X	X				
Waubuno	Waubuno	X	X					
Whirl								Rostock
Total		34	21	19		3	2	11

NOTES:

X = Currently present. * = New station added since 2017.

Other = Other data collected (may include Water Temperature, Wind Direction and Speed, Global Radiation, Relative Humidity, Barometric Pressure)

Watersheds not listed have no gauges or weather stations: Dorchester, Flat, Gregory, Komoka, Otter, River Bend, Wye).

Source: UTRCA data. Gauges and stations maintained in partnership with UTRCA and Water Survey Canada.

Table 24. Agricultural Tiling and Urban Drainage (% Area of Watershed)

Watershed	Agricultural Field Tiling			Urban Drainage	No Artificial Drainage	% More Artificial Drainage Since 2017
	Total	Random	Systematic			
Avon	61	19	43	14	25	1
Black	62	24	38	4	34	0
Cedar	30	15	15	18	52	3
Dingman	28	19	9	26	47	1
Dorchester	24	11	13	14	62	2
Fish	69	21	48	3	28	3
Flat	67	23	43	3	30	1
Forks	0	0	0	71	29	n/a
Fullarton	72	21	51	4	24	0
Gregory	63	25	38	3	34	2
Ingersoll	33	8	24	11	57	6
Komoka	1	1	0	15	84	10
Medway	63	22	41	9	28	0
Middle Thames	51	14	37	4	45	4
Mud	51	6	44	4	46	3
North Mitchell	65	7	58	4	31	5
North Woodstock	38	5	33	9	53	4
Otter	71	15	56	4	25	3
Oxbow	58	35	23	6	36	5
Plover Mills	47	15	32	8	45	1
Pottersburg	33	7	25	38	30	n/a
Reynolds	36	15	21	6	58	7
River Bend	14	12	2	32	54	n/a
Stoney	30	8	21	23	48	n/a
Trout	48	10	38	5	47	3
Waubuno	57	20	37	7	36	3
Whirl	66	22	44	4	30	2
Wye	66	13	52	7	28	5
2022 Average	48	15	33	11	41	1
2017 Average	48	17	31	10	42	-
2012 Average	46	18	28	10	44	-

NOTES:

Agricultural Tiling: Random = Tiles through wet spots only. Systematic = Tiles laid throughout a field in equal spacing. Based on OMAFRA information, etc.

Urban Drainage: Urban stormwater drainage. These figures are based on the percentage of the watershed that is urban, with the assumption that most built-up areas have stormwater drainage systems in place.

No Artificial Drainage: Land without agricultural tiles or urban drainage. Calculated by taking the percentage of the watershed remaining after subtracting the agricultural and urban drainage areas.

2017 Average and 2012 Average: Results from the 2017 and 2012 WRCs, presented for comparison.

% More Artificial Drainage Since 2017 shows the gain in area that is now drained vs. five years ago as calculated in the 2017 WRCs. N/A: Data not available in some urban areas.

Source: Based on UTRCA data (urban boundary delineation), and Ontario Ministry of Agriculture, Food, and Rural Affairs (OMFRA) Constructed Drains and Agriculture Resource Inventory, current as of June 2021.

Table 25. Watercourse Type (Natural, Channelized, or Buried)

Watershed	Total Length (km)	Length (km) by Type			Percent of Total Length		
		Natural	Channel	Buried	Natural	Channel	Buried
Avon	259	59	139	61	23	54	24
Black	220	35	163	21	16	74	10
Cedar	131	34	55	42	26	42	32
Dingman	391	138	165	88	35	42	22
Dorchester	312	139	84	89	45	27	28
Fish	225	63	95	67	28	42	30
Flat	140	46	64	31	33	46	22
Forks	98	52	34	13	53	34	13
Fullarton	189	76	78	34	40	42	18
Gregory	127	30	32	65	24	25	51
Ingersoll	374	116	111	147	31	30	39
Komoka	43	15	21	7	35	50	16
Medway	298	76	113	110	25	38	37
Middle Thames	360	115	91	154	32	25	43
Mud	311	81	60	170	26	19	55
North Mitchell	235	12	185	38	5	79	16
North Woodstock	429	90	156	182	21	36	43
Otter	99	28	38	34	28	38	34
Oxbow	156	70	47	40	45	30	25
Plover Mills	224	96	70	58	43	31	26
Pottersburg	66	8	43	16	12	65	23
Reynolds	273	49	118	106	18	43	39
River Bend	109	75	22	11	69	20	10
Stoney	77	28	27	22	36	35	29
Trout	348	134	104	111	38	30	32
Waubuno	195	54	70	71	28	36	36
Whirl	206	25	132	49	12	64	24
Wye	81	22	25	34	27	31	42
Total	5976	1766	2340	1869			
Average					30	39	31

NOTES:

Total km: Total length of all open and buried watercourses in kilometres.

Natural: Watercourses with natural meanders and topography, not under a Drainage Report.

Channel: Channelized drains (e.g., straightened and deepened) and under a Drainage Report.

Buried: Watercourses buried underground in pipes (tiled) and under a Drainage Report.

Unknown: Watercourses where it is unclear if the water flows overland or is ephemeral or buried underground.

Source: UTRCA/DFO Drain Classification Data (2015). Many mapping improvements were made since the last WRCs, allowing more watercourses to be identified.

Table 26. Watercourse Channel Change, 2010 to 2015 (Length in km)

Watershed	Channel Closed	Channel Opened	New Open Channel	New Closed Channel	New Natural Watercourse	Unchanged	Total
Avon	1.0	0.0	0.0	0.0	0.0	258.0	259.0
Black	0.4	0.1	0.0	0.0	0.0	219.1	219.6
Cedar	0.8	0.4	0.0	0.0	0.0	130.0	131.2
Dingman	2.8	0.9	1.2	0.0	0.0	385.9	390.8
Dorchester	1.6	0.1	0.0	0.0	0.0	310.2	311.9
Fish	0.2	0.0	0.0	0.0	0.0	224.6	224.9
Flat	0.3	0.0	0.0	0.0	0.0	140.0	140.3
Forks	0.3	0.0	0.0	0.0	0.0	97.9	98.1
Fullarton	0.9	0.1	0.0	0.0	0.0	187.8	188.8
Gregory	0.1	0.0	0.0	0.0	0.0	127.0	127.1
Ingersoll	2.3	0.4	0.3	0.0	0.0	370.8	373.9
Komoka	0.1	0.0	0.0	0.0	0.0	43.4	43.5
Medway	0.4	0.2	0.0	0.0	0.0	297.6	298.2
Middle Thames	1.9	0.9	0.0	0.0	0.1	357.2	360.0
Mud	1.1	0.0	0.0	0.0	0.0	310.1	311.2
N Mitchell	2.8	0.1	0.0	0.0	0.0	232.2	235.1
N Woodstock	2.1	0.6	0.4	0.0	0.0	425.8	428.8
Otter	0.3	0.0	0.0	0.0	0.0	98.8	99.1
Oxbow	0.1	0.0	0.0	0.0	0.0	155.8	155.9
Plover Mills	1.0	0.7	0.1	0.0	0.0	222.0	223.7
Pottersburg	0.2	0.0	0.0	0.0	0.0	65.8	66.0
Reynolds	1.2	1.0	0.0	0.0	0.0	270.3	272.5
River Bend	1.2	0.0	0.0	0.0	0.0	107.6	108.8
Stoney	0.7	0.0	0.7	0.0	0.0	75.6	77.1
Trout	0.7	0.0	0.0	0.0	0.0	347.7	348.3
Waubuno	0.7	0.3	0.0	0.0	0.0	194.4	195.4
Whirl	1.8	0.0	0.0	0.0	0.0	203.7	205.5
Wye	0.2	0.0	0.0	0.0	0.0	80.7	80.9
Total	27.1	5.8	2.8	0.1	0.1	5939.9	5975.7

NOTES

Channel Closed = was open channel and is now closed/buried.

Channel Open = was closed/buried and now an open channel (sections are often reopened following plugging or clean outs).

New Open Channel = new open channel where no channel existed before.

New Closed Channel = new closed channel where no channel existed before.

New Natural Watercourse = new watercourse or flow path.

Unchanged = status from natural, channelized, or closed has not changed from 2010 to 2015.

Table 27. Watercourse Temperature Regime

Watershed	Total Length (km)	Length (km)		Percent of Total Length	
		Cool, Cold	Warm, Unconfirmed	Cool, Cold	Warm, Unconfirmed
Avon	259	71	188	27	73
Black	220	50	170	23	77
Cedar	131	23	108	17	83
Dingman	392	86	306	22	78
Dorchester	312	70	242	22	78
Fish	140	29	111	21	79
Flat	225	34	190	15	84
Forks	98	36	62	37	63
Fullarton	189	39	150	21	79
Gregory	127	27	100	22	78
Ingersoll	374	72	302	19	81
Komoka	43	7	36	16	84
Medway	289	72	226	24	76
Middle Thames	360	68	292	19	81
Mud	311	52	259	17	83
North Mitchell	235	42	193	18	82
North Woodstock	429	83	346	19	81
Otter	99	23	76	23	77
Oxbow	156	26	130	17	83
Plover Mills	224	47	177	21	79
Pottersburg	66	12	54	18	82
Reynolds	273	35	238	13	87
River Bend	109	33	76	30	70
Stoney	77	16	61	21	79
Trout	349	69	280	20	80
Waubuno	195	47	148	24	76
Whirl	206	33	173	16	84
Wye	81	26	55	32	68
Average	5978			21	79
Total		1228	4750		

NOTES:

Total km = Total length of all open and buried watercourses in kilometres.

Watercourse temperature class is determined using fish species presence in conjunction with species thermal preference. Fish species records from 1929-2018 for the Upper Thames watershed were used to determine fishes thermal associations. Other factors or features supporting the classification include watercourse permanency, surficial geology, and source of baseflow. The current Hydrography Thermal Regime Classification was adopted in 2020.

Warm, unconfirmed temperature streams have not been sampled, for the most part, and are assumed to be warm water (e.g., support a warm water fishery).

Source: Upper Thames River Conservation Authority (Hydrography Thermal Regime Classification, Fish Method, 2020).

Table 28. Dams and Barriers to Fish Movement

Watershed	Number of Dams and Barriers			Names of Public Dams and Barriers	Previously Removed by UTRCA or Municipality (Not Included in Total)
	Total	On-site Identified	Air Photo Identified		
Avon	19	5	14	Shakespeare CA Dam, Thomas Orr Dam, John St. Weir	
Black	10	1	9		
Cedar	8	3	5	Southside Park Dam	Hodge's Pond Dam
Dingman	103	13	90		Dingman CA Dam (2005)
Dorchester	54	13	41	Dorchester CA Dam, Dorchester Mill Pond Dam	
Fish	17	5	12		
Flat	11	1	10		
Forks	26	5	21	Hunt Weir, Coves Flood Gates	Springbank Dam (decommissioned 2018)
Fullarton	9	5	4	Fullarton CA Dam	
Gregory	4		4		
Ingersoll	48	30	18	Centreville Dam	
Komoka	5		5		
Medway	43	23	20	St. John Estate Dam	Legg Dam (2010)
Middle Thames	13	2	11	Thamesford Dam	
Mud	21	11	10	Embro CA Dam	Brenneman Dam (2010-2015)
N Mitchell	5	1	4	Mitchell CA Dam	
N Woodstock	29	2	27	Pittock CA Dam	
Otter	4		4		
Oxbow	17	2	15		
Plover Mills	18	7	11	Fanshawe CA Dam, St. Marys Weir	Cade Dam (2013)
Pottersburg	8	4	4		
Reynolds	22		22		
River Bend	50	24	26		
Stoney	29	12	17		Several removed by City in 2008
Trout	29	13	16	Harrington CA Dam, Wildwood CA Dam, Wildwood DU berm	
Waubuno	10	3	7		
Whirl	1		1		
Wye	4	1	3		
Total	617	186	431	21	

NOTES:

Dams are structures that hold back water and increase the water level behind them. Barriers block passage and prevent movement or migration of aquatic species.

Table 29. Sewage Treatment Plant Facilities

Watershed	Plant Discharging within Watershed *	Plant Servicing Area Only, Discharging Elsewhere **
Avon	Stratford WWTP	
Black		
Cedar		Woodstock WWTP
Dingman	Southland Park/Lambeth WWTP (decommissioned in 2017)****	Greenway WWTP
Dorchester	Dorchester WWTP	Pottersburg WWTP
Fish		
Flat		
Forks	Adelaide WWTP, Greenway WWTP, Vauxhall WWTP, Pottersburg WWTP	
Fullarton	Mitchell WWTP	
Gregory		
Ingersoll	Woodstock WWTP, Ingersoll WWTP	
Komoka		Komoka WWTP
Medway	Granton WWTP	Adelaide WWTP, Greenway WWTP
Middle Thames	Thamesford WWTP	
Mud		Woodstock WWTP
North Mitchell		Mitchell WWTP
North Woodstock	Tavistock Lagoons (via Hohner Drain to S. Thames), Shakespeare WWTP (via Shakespeare Drain to S. Thames)	Woodstock WWTP
Otter		
Oxbow	Ilderton WWTP	
Plover Mills	St. Marys WWTP, Thorndale WWTP	
Pottersburg		Pottersburg WWTP
Reynolds	Mt. Elgin WWTP***	
River Bend	Oxford WWTP, Kilworth Heights WWTP, Komoka WWTP, Mount Brydges WWTP	
Stoney		Adelaide WWTP
Trout		St. Marys WWTP
Waubuno		Pottersburg WWTP
Whirl		Mitchell WWTP
Wye		Thorndale WWTP
Total Number of Plants = 22		

NOTES:

WWTP = Wastewater Treatment Plant

* Plants that service areas within the watershed and also discharge to the creek/river within the watershed.

** Plants that service areas within the watershed, but discharge to creeks/streams outside the watershed.

*** Does not discharge to Reynolds Creek watercourse, but to a septic field in the Reynolds watershed.

**** Decommissioned in 2017 and replaced with a pumping station to direct sewage to Greenway WWTP.

Source: Municipal information compiled by UTRCA.

Table 30. Spills Reported

Watershed	Total 2001 - 2005	Total 2006 - 2010	Total 2011 - 2015	Total 2016 - 2020	Material Type (2016-2020)						
					Fuels	Industry Chemical	Industry Food	Sewage	Manure	Pesticide	Other
Avon	36	30	14	19	7	7	2	3			
Black	3	0	1	0							
Cedar	10	34	21	23	9	10	2	2			2
Dingman	53	109	46	70	21	39	5	5			2
Dorchester	15	26	16	17	4	11		2			3
Fish	2	7	1	2	1				1		
Flat	0	5	2	1		1					
Forks	95	143	82	129	25	75	9	18	1	1	5
Fullarton	1	3	1	1		1					
Gregory	1	2	2	0							
Ingersoll	22	51	44	32	9	11	2	8	2		2
Komoka	0	1	2	4		2		2			
Medway	10	19	14	10	5	4			1		2
Middle Thames	8	16	11	4	1	2			1		1
Mud	3	3	8	12	5	5	1		1		
North Mitchell	3	11	7	0							
North Woodstock	14	37	19	14	4	6		4			2
Otter	0	3	3	4	1	3					
Oxbow	6	8	4	11	5	3		3			
Plover Mills	26	34	11	9	1	5	1	2			1
Pottersburg	51	42	32	42	15	24	1	2			
Reynolds	2	15	8	18	5	8	2	3			
River Bend	8	31	25	31	5	13	2	11			
Stoney	5	9	2	3		3					
Trout	3	7	5	5		4			1		
Waubuno	6	10	4	5	1	3		1			
Whirl	2	7	3	4		3			1		
Wye	1	3	2	2		2					
Total	386	666	390	472	124	245	27	66	9	1	20
% Material Type					26	52	6	14	2	0	4

NOTES:

A spill is a discharge of a pollutant that impairs the quality of a watercourse and/or the natural environment. Fuels include diesel, transformer oil, furnace oil, etc. Sewage spills are mostly wastewater treatment plant bypasses. Pesticides include herbicides and insecticides. Gaseous or vapour spills are not included here. This data represents the number of spills reported to the MECP Spills Action Centre, and may not represent all spills that have occurred.

Source: Ministry of Environment, Conservation, and Parks Spills Action Centre.

Table 31. Wetland Cover

Watershed	Watershed Area (ha)	Evaluated Wetlands (ha)	Unevaluated Wetlands (ha)	Total Wetland Area (ha)	% Wetland Cover	Wetland Grade	Wetland Removed since 2010 (ha)	% Removed
Avon	16,277	665	264	929	5.7	C	2	0.2
Black	13,993	1117	387	1,504	10.7	B	3	0.2
Cedar	9,725	434	245	679	7.0	C	3	0.5
Dingman	16,896	497	409	906	5.4	D	13	1.4
Dorchester	14,035	1055	636	1,690	12.0	A	12	0.7
Fish	14,895	0	298	298	2.0	F	1	0.4
Flat	9,053	7	206	213	2.4	F	0	0.0
Forks	8,691	40	78	118	1.4	F	0	0.1
Fullarton	11,777	10	379	388	3.3	D	0	0.0
Gregory	5,995	28	107	135	2.3	F	1	1.0
Ingersoll	21,524	692	395	1,087	5.1	D	7	0.7
Komoka	2,263	238	54	292	12.9	A	3	1.0
Medway	20,475	65	733	798	3.9	D	8	1.0
Mid Thames	17,449	195	775	970	5.6	C	2	0.2
Mud	15,444	216	605	821	5.3	D	3	0.4
N Mitchell	17,307	84	383	467	2.7	D	1	0.1
N Woodstock	24,702	556	828	1,385	5.6	C	8	0.6
Otter	5,973	131	144	274	4.6	D	0	0.1
Oxbow	8,748	45	528	572	6.5	C	2	0.3
Plover Mills	12,187	0	103	103	0.8	F	0	0.4
Pottersburg	4,753	3	90	94	2.0	F	2	2.4
Reynolds	16,904	612	677	1,290	7.6	C	8	0.6
River Bend	5,607	163	146	310	5.5	D	2	0.5
Stoney	3,799	106	90	196	5.2	D	4	2.2
Trout	15,933	289	874	1,163	7.3	C	2	0.2
Waubuno	9,975	88	276	365	3.7	D	2	0.4
Whirl	13,309	72	403	474	3.6	D	1	0.2
Wye	5,282	0	155	155	2.9	D	0	0.0
Total	342,969	7,408	10,268	17,676			90	0.5
Average					5.2	D		

NOTES:

Wetlands include swamps, marshes, bogs, and fens. Swamps are the dominant wetland type in the Upper Thames River watersheds.

Evaluated wetlands are wetlands evaluated by the MNRF and include both Provincially Significant Wetlands and other wetlands. Evaluated wetlands values are based on wetland data acquired from MNRF in June 2015.

Unevaluated wetlands are wetlands interpreted from aerial photography (orthoimagery) by UTRCA staff. These sites have not been inventoried or evaluated and can be considered potential wetlands.

Percent Wetland Cover is the percentage of the watershed that is in wetlands.

Wetland Grade is based on the Conservation Ontario grading system (2022) where 10% is in the middle of the B grade.

Wetland Removed since 2010 is the area (ha) removed/lost and converted to other land uses between the 2015 and 2010 aerial photography.

Source: UTRCA wetland mapping updated to 2015 ortho-imagery and MNRF Evaluated Wetland layer (acquired May 2020).

Table 32. Woodlot/Woodland Size

Watershed	Number of Woodlots				Total Woodlot Area (ha)				% of Woodlot Area			Average Size (ha)			Largest Woodlot (ha)
	S	M	L	Total	S	M	L	Total	S	M	L	S	M	L	
Avon	161	25	12	198	424	441	926	1790	24	25	52	3	18	77	377
Black	107	30	5	142	342	501	1166	2008	17	25	58	3	17	233	867
Cedar	96	14	8	118	210	205	666	1082	19	19	62	2	15	83	196
Dingman	194	27	11	232	538	436	1064	2037	26	21	52	3	16	97	452
Dorchester	166	36	19	221	402	592	1648	2642	15	22	62	2	16	87	272
Fish	116	23	7	146	343	373	510	1226	28	30	42	3	16	73	208
Flat	62	22	5	89	204	434	291	929	22	47	31	3	20	58	96
Forks	115	18	4	137	249	316	144	709	35	45	20	2	18	36	41
Fullarton	121	16	9	146	351	299	510	1159	30	26	44	3	19	57	157
Gregory	79	9	2	90	211	136	123	470	45	29	26	3	15	61	90
Ingersoll	270	46	11	327	786	730	829	2344	34	31	35	3	16	75	266
Komoka	33	6	4	43	86	89	271	447	19	20	61	3	15	68	116
Medway	185	37	13	235	609	607	676	1892	32	32	36	3	16	52	108
Mid Thames	200	42	18	260	575	711	1006	2292	25	31	44	3	17	56	191
Mud	196	30	12	238	609	487	664	1759	35	28	38	3	16	55	128
N Mitchell	146	18	2	166	425	299	84	808	53	37	10	3	17	42	43
N Woodstock	252	53	15	320	816	807	1204	2826	29	29	43	3	15	80	504
Otter	48	10	5	63	157	154	262	573	27	27	46	3	15	52	70
Oxbow	111	25	6	142	334	428	476	1238	27	35	38	3	17	79	169
Plover Mills	149	32	11	192	340	518	539	1398	24	37	39	2	16	49	75
Pottersburg	61	9	0	70	151	137	0	289	52	48	0	2	15	0	27
Reynolds	160	44	10	214	458	691	663	1812	25	38	37	3	16	66	208
River Bend	93	11	9	113	205	208	710	1123	18	19	63	2	19	79	148
Stoney	38	12	2	52	114	199	92	405	28	49	23	3	17	46	61
Trout	180	31	22	233	442	514	1852	2808	16	18	66	2	17	84	362
Waubuno	114	27	7	148	284	496	364	1143	25	43	32	2	18	52	84
Whirl	110	26	4	140	301	410	240	951	32	43	25	3	16	60	108
Wye	56	12	2	70	162	157	101	420	39	37	24	3	13	51	59
Total	3619	691	235	4545	10128	11375	17079	38581							
Average	129	25	8	162	362	406	610	1378	26	32	40	3	16	68	196

NOTES:

S (Small) is < 10 ha (min. 0.5 ha); M (Medium) is 10-30 ha; L (Large) is > 30 ha

Method: Woodland areas were cut by watershed boundaries. The areas displayed represent the woodland area contained within a watershed and not the total size of woodland that may be shared by adjoining woodlands in other watersheds.

Largest Woodland: Calculated using the largest woodland area contained in the watershed (See Method above). Woodlands have been clustered, merging woodlands separated by narrow (< 20 m) secondary roads. Large woodlands are often long and narrow, not square shaped.

Source: Derived by UTRCA using woodland data interpreted from 2015 aerial photography.

Table 33. Vegetation Cover Types as a Percentage of Total Vegetation Cover

Watershed	Total Vegetation Cover (ha)	Total Vegetation as a % of Watershed	Percent (%) of Total Vegetation Cover						
			Forest				Meadow and Thicket		
			Deciduous	Mixed	Coniferous, Plantation	Total	Meadow	Thicket	Total
Avon	2,188	13.4	67	10	4	82	16	2	18
Black	2,172	15.5	53	31	9	92	7	1	8
Cedar	1,486	15.3	52	16	5	73	20	7	27
Dingman	3,105	18.4	59	4	2	66	31	3	34
Dorchester	3,290	23.4	50	27	4	80	16	3	20
Fish	1,487	10.0	61	13	9	82	16	2	18
Flat	1,056	11.7	81	4	3	88	10	2	12
Forks	1,166	13.4	53	5	3	61	33	7	39
Fullarton	1,425	12.1	69	3	9	81	15	4	19
Gregory	587	9.8	68	5	7	80	16	4	20
Ingersoll	3,198	14.9	59	11	3	73	22	4	27
Komoka	610	27.0	68	3	3	73	22	5	27
Medway	2,351	11.5	74	4	3	81	17	3	19
M Thames	2,739	15.7	69	11	3	83	13	4	17
Mud	2,078	13.5	68	10	6	85	12	3	15
N Mitchell	934	5.4	80	6	1	87	11	2	13
N Woodstock	3,368	13.6	61	16	7	84	14	2	16
Otter	690	11.6	68	11	4	83	15	2	17
Oxbow	1,550	17.7	67	8	5	80	15	5	20
Plover Mills	2,154	17.7	48	10	7	65	30	5	35
Pottersburg	429	9.0	57	1	8	67	25	8	33
Reynolds	2,401	14.2	61	10	4	75	21	4	25
River Bend	1,550	27.6	44	24	4	72	23	4	28
Stoney	585	15.4	54	14	1	69	26	5	31
Trout	3,332	20.9	47	16	21	84	12	3	16
Waubuno	1,384	13.9	72	4	6	83	14	3	17
Whirl	1,062	8.0	77	10	2	90	9	2	10
Wye	536	10.1	73	4	1	79	18	3	22
Total	48,913	14.3							
Average			61	12	6	79	18	3	21

NOTES:

Deciduous Forest: Mature treed habitats (> 60% closed canopy) dominated by broad-leaved deciduous trees.

Mixed Forest: Mature treed habitats dominated by a mix of deciduous and coniferous trees.

Coniferous Forest: Mature treed habitats dominated by coniferous (evergreen) trees.

Plantation: Treed areas consisting of visible rows of planted trees, usually conifers. Mature plantations that have diversified naturally with deciduous trees and the rows are no longer very visible, are classified as Mixed Forest.

Meadow: Habitats dominated by grasses and wildflowers (e.g., goldenrod) with only a scattering of trees and/or shrubs. Includes young plantations where the trees are < 2 m tall and meadow plants grow between the rows.

Thicket: Habitats dominated by shrubs < 2 m tall (e.g., dogwoods, hawthorns). May include early successional woodlands.

Source: UTRCA Vegetation mapping data using 2015 aerial photography/imagery.

Table 34. Vegetation Cover Type Areas and Percentage of Watershed

Watershed	Watershed Area (ha)	Total Veg Cover		ha and % (Proportion of Watershed Area)					
		Area (ha)	% of Watershed	Forest		Meadow (ha)		Thicket (ha)	
				ha	%	ha	%	ha	%
Avon	16,277	2,188	13.4	1,787	11.0	352	2.2	49	0.3
Black	13,993	2,172	15.5	2,008	14.4	143	1.0	21	0.2
Cedar	9,725	1,486	15.3	1,082	11.1	295	3.0	109	1.1
Dingman	16,896	3,105	18.4	2,038	12.1	960	5.7	107	0.6
Dorchester	14,035	3,290	23.4	2,643	18.8	538	3.8	109	0.8
Fish	14,895	1,487	10.0	1,225	8.2	233	1.6	29	0.2
Flat	9,053	1,056	11.7	929	10.3	102	1.1	25	0.3
Forks	8,691	1,166	13.4	709	8.2	381	4.4	76	0.9
Fullarton	11,777	1,425	12.1	1,156	9.8	217	1.8	52	0.4
Gregory	5,995	587	9.8	470	7.8	92	1.5	25	0.4
Ingersoll	21,524	3,198	14.9	2,341	10.9	715	3.3	142	0.7
Komoka	2,263	610	27.0	447	19.8	134	5.9	29	1.3
Medway	20,475	2,351	11.5	1,893	9.2	398	1.9	60	0.3
Mid Thames	17,449	2,739	15.7	2,285	13.1	357	2.0	97	0.6
Mud	15,444	2,078	13.5	1,759	11.4	251	1.6	68	0.4
N Mitchell	17,307	934	5.4	809	4.7	107	0.6	18	0.1
N Woodstock	24,702	3,368	13.6	2,826	11.4	477	1.9	65	0.3
Otter	5,973	690	11.6	573	9.6	102	1.7	15	0.3
Oxbow	8,748	1,550	17.7	1,238	14.2	231	2.6	81	0.9
Plover Mills	12,187	2,154	17.7	1,398	11.5	647	5.3	109	0.9
Pottersburg	4,753	429	9.0	288	6.1	107	2.3	34	0.7
Reynolds	16,904	2,401	14.2	1,812	10.7	501	3.0	88	0.5
River Bend	5,607	1550	27.6	1,123	20.0	362	6.5	65	1.2
Stoney	3,799	585	15.4	405	10.7	150	3.9	30	0.8
Trout	15,933	3,332	20.9	2,808	17.6	412	2.6	112	0.7
Waubuno	9,975	1,384	13.9	1,144	11.5	192	1.9	48	0.5
Whirl	13,309	1,062	8.0	951	7.1	92	0.7	19	0.1
Wye	5,282	536	10.1	420	8.0	98	1.9	18	0.3
Total	342,971	48,913		38,567		8,646		1,700	
Average			14.3		11.2		2.5		0.5

NOTES:

Forest: All forest habitats (deciduous, coniferous, mixed, and plantation). See previous table for habitat descriptions.

Source: UTRCA vegetation mapping data using 2015 aerial photography/imagery.

Table 35. Vegetation Cover Removed Between 2010 and 2015 Air Photography

Watershed	Watershed Area (ha)	Total Veg Cover		Forest		Meadow		Thicket	
		Area (ha)		Area (ha)		Area (ha)		Area (ha)	
		Present in 2015	Removed since 2010	Present in 2015	Removed since 2010	Present in 2015	Removed since 2010	Present in 2015	Removed since 2010
Avon	16,277	2,188	28	1,787	7	352	21	49	0
Black	13,993	2,172	27	2,008	6	143	21	21	0
Cedar	9,725	1,486	39	1,082	7	295	28	109	4
Dingman	16,896	3,105	132	2,038	40	960	89	107	3
Dorchester	14,035	3,290	65	2,643	21	538	43	109	1
Fish	14,895	1,487	31	1,225	15	233	16	29	0
Flat	9,053	1,056	6	929	1	102	4	25	1
Forks	8,691	1,166	30	709	15	381	13	76	2
Fullarton	11,777	1,425	11	1,156	3	217	8	52	0
Gregory	5,995	587	20	470	7	92	12	25	1
Ingersoll	21,524	3,198	85	2,341	24	715	55	142	6
Komoka	2,263	610	10	447	7	134	3	29	1
Medway	20,475	2,351	71	1,893	40	398	27	60	4
Mid Thames	17,449	2,739	47	2,285	19	357	27	97	0
Mud	15,444	2,078	25	1,759	13	251	12	68	0
N Mitchell	17,307	934	15	809	3	107	12	18	0
N Woodstock	24,702	3,368	57	2,826	15	477	32	65	10
Otter	5,973	690	8	573	4	102	3	15	1
Oxbow	8,748	1,550	29	1,238	13	231	13	81	3
Plover Mills	12,187	2,154	58	1,398	16	647	40	109	2
Pottersburg	4,753	429	17	288	4	107	12	34	1
Reynolds	16,904	2,401	46	1,812	18	501	27	88	1
River Bend	5,607	1,550	46	1,123	18	362	26	65	2
Stoney	3,799	585	34	405	9	150	25	30	0
Trout	15,933	3,332	52	2,808	11	412	39	112	2
Waubuno	9,975	1,384	27	1,144	12	192	13	48	1
Whirl	13,309	1,062	3	951	1	92	2	19	0
Wye	5,282	536	19	420	4	98	15	18	0
Total	342,969	48,913	1,039	38,567	353	8,646	638	1,700	49
% of UTR watershed		14.26	0.30	11.25	0.10	2.52	0.19	0.50	0.01

NOTES:

Present in 2015: Vegetation existing as shown on the 2015 ortho imagery.

Removed since 2010: Vegetation present in 2010 but cleared and converted to other uses (e.g., urban, agriculture, aggregate) in 2015 air photography. Does NOT include vegetation that was re-interpreted to another vegetation type (e.g., matured from meadow to thicket) or rule changes regarding definitions of woodlands and meadows for GIS mapping purposes.

Source: UTRCA data, interpretation from 2010 and 2015 ortho imagery.

Table 36. Forest Loss/Clearing, 2000 to 2015

Watershed	Forest Cover (ha) *				Area of Forest Removal/Loss (ha)			% Forest Cover Loss		
	2000	2006	2010	2015	2000 - 2006	2006 - 2010	2010 - 2015	2000 - 2006	2006 - 2010	2010 - 2015
Avon	1,777	1,769	1,761	1,787	8	8	7	0.5	0.5	0.4
Black	1,973	1,970	1,968	2,008	2	3	6	0.1	0.1	0.3
Cedar	1,099	1,084	1,074	1,082	16	10	7	1.4	0.9	0.7
Dingman	2,176	2,094	2,061	2,038	82	34	40	3.8	1.6	2.0
Dorchester	2,560	2,542	2,538	2,643	18	4	21	0.7	0.2	0.8
Fish	1,238	1,231	1,224	1,225	7	7	15	0.6	0.6	1.2
Flat	928	926	926	929	2	0	1	0.2	0.0	0.1
Forks	781	721	706	709	60	15	15	7.7	2.1	2.1
Fullarton	1,077	1,074	1,073	1,156	3	0	3	0.3	0.0	0.3
Gregory	469	462	460	470	8	2	7	1.6	0.3	1.5
Ingersoll	2,507	2,476	2,455	2,341	31	22	24	1.2	0.9	1.0
Komoka	428	427	427	447	0	1	7	0.0	0.1	1.5
Medway	1,990	1,943	1,931	1,893	47	12	40	2.4	0.6	2.0
Middle Thames	2,261	2,244	2,238	2,285	17	5	19	0.8	0.2	0.9
Mud	1,796	1,784	1,781	1,759	12	3	13	0.6	0.2	0.7
North Mitchell	801	797	795	809	4	2	3	0.5	0.3	0.4
North Woodstock	2,759	2,737	2,710	2,826	22	28	15	0.8	1.0	0.5
Otter	594	584	581	573	10	2	4	1.7	0.4	0.7
Oxbow	1,235	1,218	1,200	1,238	17	19	13	1.3	1.5	1.1
Plover Mills	1,351	1,334	1,332	1,398	17	2	16	1.3	0.2	1.2
Pottersburg	307	286	285	288	21	0	4	7.0	0.1	1.4
Reynolds	1,567	1,546	1,539	1,812	22	7	18	1.4	0.5	1.2
River Bend	1,202	1,144	1,123	1,123	59	21	18	4.9	1.8	1.6
Stoney	430	394	390	405	36	4	9	8.3	0.9	2.2
Trout	2,802	2,780	2,768	2,808	22	11	11	0.8	0.4	0.4
Waubuno	1,205	1,197	1,194	1,144	8	2	12	0.7	0.2	1.0
Whirl	882	877	875	951	6	2	1	0.6	0.2	0.1
Wye	463	449	449	420	14	0	4	3.0	0.1	0.9
Total	38,659	38,089	37,862	38,567	571	227	353	1.5	0.6	0.9

NOTES:

Forest Loss data based on mapping/GIS comparisons of 2000, 2006, 2010, and 2015 aerial photography. Loss is recorded when GIS tagged woodland polygons are seen on one photograph and not present in the next as they were converted to another land use such as urban, aggregates, or agriculture.

Forest Cover for 2006 and 2000 based on 2010 cover with Forest Loss ha added back in to estimate the cover in 2006 and 2000.

Forest Cover area increased slightly overall in 2015 compared to 2010 due to improved mapping which picked up more woodland features and the edges of woodlands. Increase was also the result of the maturation of some young plantations and thickets into the mature woodland category. This “gain” in forest/woodland cover was not able to be calculated in the past, so is only available for the 2010 to 2015 photography.

% Forest Cover Loss is calculated by dividing the area of forest loss over the area of the forest cover in the previous aerial photography.

Source: UTRCA data.

Table 37. Forest/Woodland Change (Loss and Gain), 2010 to 2015

Watershed	Loss (ha)	Gain (ha)	Net Gain or Loss (-) (ha)
Avon	7.1	44.7	37.6
Black	6.3	18.3	12.0
Cedar	7.2	14.6	7.4
Dingman	40.3	37.0	-3.3
Dorchester	21.1	70.2	49.1
Fish	14.8	23.3	8.5
Flat	0.9	10.5	9.6
Forks	15.0	24.2	9.2
Fullarton	3.0	61.9	58.9
Gregory	6.7	14.1	7.4
Ingersoll	23.8	39.7	15.9
Komoka	6.6	8.1	1.5
Medway	39.5	16.3	-23.2
Middle Thames	19.2	39.9	20.7
Mud	13.3	25.0	11.7
North Mitchell	2.9	11.6	8.7
North Woodstock	14.6	51.9	37.3
Otter	4.0	10.2	6.2
Oxbow	12.9	47.1	34.2
Plover Mills	16.2	59.7	43.5
Pottersburg	4.0	10.6	6.6
Reynolds	18.1	24.9	6.8
River Bend	18.4	15.0	-3.4
Stoney	8.5	12.6	4.1
Trout	10.5	55.1	44.6
Waubuno	12.3	16.2	3.9
Whirl	1.2	11.4	10.2
Wye	4.1	7.4	3.3
Total	352.5	781.5	429.0

NOTES:

Loss: Woodland cover that was removed for other land uses between 2010 and 2015 as seen on air photography. Some woodlands were already converted to other land uses by the 2015 photography and others were cleared but awaiting the next land use.

Gain: New woodland gained is the result of forest succession whereby young tree plantations or thickets matured to the woodland category. In addition, some new woodland areas were picked up in the new photography (these areas were in a different vegetation category in the past so not a net gain in overall vegetation cover).

Source: UTRCA data.

Table 38. Other/Linear Vegetation Cover (Hectares)

Watershed	Connected Veg Feature	Isolated Wooded	Hedge Row	Tree Line	Windbreak	Watercourse Buffer	Total Area
Avon	3	8	23	4	31	15	84
Black	1	4	10	3	23	7	48
Cedar	3	4	14	2	15	3	41
Dingman	5	11	40	4	18	10	87
Dorchester	4	8	41	3	32	7	96
Fish	1	7	12	3	36	21	80
Flat	1	5	7	2	18	7	40
Forks	4	7	46	1	4	2	64
Fullarton	1	6	11	2	17	6	43
Gregory	0	4	7	3	24	5	43
Ingersoll	12	13	63	5	60	6	159
Komoka	0	1	7	2	7	1	18
Medway	1	9	29	3	56	22	119
Middle Thames	8	6	31	5	44	15	110
Mud	6	7	34	4	47	8	106
North Mitchell	1	10	11	3	28	17	70
North Woodstock	8	12	49	6	54	15	144
Otter	0	4	6	1	15	4	30
Oxbow	1	7	30	3	16	16	73
Plover Mills	6	7	34	3	31	7	88
Pottersburg	0	3	7	1	11	1	24
Reynolds	1	9	15	3	30	24	82
River Bend	4	5	25	1	7	0	43
Stoney	0	2	5	0	5	2	15
Trout	2	9	29	5	31	7	83
Waubuno	1	3	21	5	31	9	70
Whirl	1	4	11	2	37	7	62
Wye	1	3	9	2	24	11	49
TOTAL	76	177	627	83	754	255	1971

NOTES:

Linear Vegetation Cover includes tree/shrub cover that is too narrow to fall within the definitions of a woodland/forest, thicket, or meadow.

Connected Vegetation Feature: A linear feature (> 20 m long and 20-30 m wide) comprised of woody plants that connects two or more Vegetation Communities.

Isolated Wooded: Wooded lands that are not attached to natural heritage features and are > 30 m wide and > 30 m long but less than 0.5 ha in size.

Hedgerow: A linear feature, 10-30 m wide and > 100 m long comprised of shrubs and trees, often separating farm fields.

Tree Line: A row of trees, < 10 m wide and 100-250 m long. Can be planted or naturally occurring.

Windbreak: A row of trees, usually planted coniferous trees, < 10 m wide and > 250 m long, comprised of one to three rows of trees that separate farm fields for the purpose of breaking the wind.

Watercourse Buffer: Narrow meadows, < 30 m wide and > 100 m long, within the 30 m riparian zone of a watercourse.

Source: UTRCA GIS mapping using 2015 imagery.

Table 39. Riparian Zone Forested and Vegetated

Watershed	Riparian Zone Area (ha)	Hectares			Percent (%) of Riparian Zone		
		Forest	Meadow & Thicket	Total	Forest	Meadow & Thicket	Total
Avon	1,157	354	155	509	30.6	13.4	44.0
Black	1,154	320	75	395	27.7	6.5	34.2
Cedar	510	191	105	297	37.5	20.6	58.1
Dingman	1,737	597	329	926	34.4	18.9	53.3
Dorchester	1,293	653	179	831	50.5	13.8	64.3
Fish	915	288	109	397	31.5	11.9	43.4
Flat	638	224	59	282	35.0	9.2	44.2
Forks	481	239	80	318	49.6	16.6	66.2
Fullarton	898	336	111	447	37.4	12.4	49.8
Gregory	375	109	59	168	29.0	15.7	44.7
Ingersoll	1,259	501	240	741	39.8	19.0	58.8
Komoka	214	95	34	129	44.3	16.0	60.4
Medway	1,085	318	173	491	29.3	16.0	45.2
Middle Thames	1,166	519	170	689	44.5	14.6	59.1
Mud	832	343	142	485	41.2	17.1	58.2
North Mitchell	1,169	140	73	213	12.0	6.2	18.2
North Woodstock	1,415	495	219	715	35.0	15.5	50.5
Otter	390	134	45	179	34.3	11.6	46.0
Oxbow	684	295	94	389	43.2	13.8	56.9
Plover Mills	975	367	215	581	37.6	22.0	59.6
Pottersburg	313	58	49	107	18.5	15.7	34.2
Reynolds	940	300	151	450	31.9	16.0	47.9
River Bend	518	286	98	384	55.3	18.9	74.1
Stoney	323	109	70	178	33.6	21.7	55.3
Trout	1,357	659	194	853	48.5	14.3	62.8
Waubuno	736	279	96	375	37.9	13.1	51.0
Whirl	933	173	55	229	18.6	5.9	24.5
Wye	277	96	36	132	34.7	13.0	47.7
Total	23,744	8,476	3,414	11,890			
Watershed Average					35.8	14.6	50.5
EC Guideline					50.0	25.0	75.0

NOTES:

The riparian zone is a 30 m swath of land on both sides of an open watercourse.

EC Guideline: Environment Canada guideline is taken from "How Much Habitat is Enough" 3rd Edition, 2013. Riparian Habitat Guideline: 75% of stream length naturally vegetated; 30 m wide stream buffers (to avoid stream degradation). The UTRCA has broken the 75% into 50% forest and 25% other cover types for the purposes of this report card.

Watershed Average is derived by taking the total hectares divided by the total riparian area.

Source: UTRCA GIS mapping using 2015 ortho-imagery.

Table 40. UTRCA Owned Land

Watershed	Hectares Owned	Examples
Avon	320	Wetlands: Gads Hill Swamp. Conservation Areas: Shakespeare. Floodplains: Tabour, Mountain, and Mclver Tracts
Black	791	Wetlands: North Gads Hill Swamp, Ellice Swamp
Cedar	<1	Floodplains: tiny parcels in Woodstock
Dingman	45	Wetlands: Westminster/Dingman Source Wetland, Westminster Ponds ESA Floodplains: Greenhills GC
Dorchester	440	Wetlands: Dorchester Swamp (including 2 ha new), North Dorchester Swamp Floodplains: Mill Pond, Ivey Tract, Meadowlily Woods, various Conservation Areas: Dorchester, Dorchester Mill Pond
Fish	47	Conservation Areas: Fish Creek Tract
Flat	56	Floodplains
Forks	159	Floodplains: various, Kilally Meadows. Conservation Areas: Fanshawe CA. Wetlands: Westminster Ponds, Sifton Bog
Fullarton	422	Floodplains Conservation Areas: Fullarton
Gregory	8	Conservation Areas: Wildwood CA
Ingersoll	308	Wetlands and Floodplains: Burgess Park, Golspie Swamp Valley land: Ingersoll Channel, Conservation Areas: Beachville, Pittock CA
Komoka	0	
Medway	28	Floodplains: Medway Valley ESA
Middle Thames	20	Wetlands: Kintore Swamp
Mud	9	Conservation Areas: Embro CA
North Mitchell	14	Floodplains
North Woodstock	635	Wetlands: Downey Tract Conservation Areas: Pittock CA
Otter	0	
Oxbow	0	
Plover Mills	1,012	Conservation Areas: Fanshawe CA Floodplains; Tracts: Cade Tract
Pottersburg	2	Floodplains
Reynolds	0	(UTRCA manages Five Points Woods Wetland McLaughlin Tract)
River Bend	67	Floodplains: Lowthian Flats Wetlands: Sifton Bog
Stoney	22	Floodplains
Trout	1,345	Conservation Areas: Wildwood CA, Harmony, Harrington
Waubuno	1	Floodplains
Whirl	4	Floodplains
Wye	4	Conservation Areas: Part of Fanshawe CA
Total	5,761	

NOTES:

Many lands are owned by the Upper Thames River Conservation Authority (UTRCA) but managed by another agency or group. For example, the small, rural Conservation Areas are managed by the municipality or local service clubs.

Many floodplain lands are managed by the municipality as parkland or open space.

UTRCA owns land in 24 of 28 watersheds. UTRCA owns 1.7% (5,761 ha) of the UTRCA watershed (342,062 ha).

Source: UTRCA data.

Table 41. Fish Species Occurrences (1990 to 2020)

Common Name	Avon	Black	Cedar	Dingman	Dorchester	Fish	Flat	Forks	Fullarton	Gregory	Ingersoll	Komoka	Medway	Middle Thames	Mud Creek	North Mitchell	North Woodstock	Otter	Oxbow	Plover Mills	Pottersburg	Reynolds	River Bend	Stoney	Trout	Waubuno	Whirl	Wye	Total counts	
Am. Brook Lamprey												H		X	X							X			X				5	
Bigmouth Buffalo								X																					1	
Black Bullhead	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X		X	X		X	X	X	X		X	X	22	
Black Crappie				X	X			X					X									X	X						6	
Black Redhorse SAR					X		X	X	X				X	X						X			X	X		X		X	11	
Blacknose Dace	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	28
Blacknose Shiner				X	X		X	H	X					H			X							X		H			9	
Blackside Darter	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	26
Bluegill	X		X	X	X			X	X		X	X	X		X					X	X			X	X				14	
Bluntnose Minnow	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	27	
Bowfin								X																					1	
Brassy Minnow	X	X	X		H			X					X						X			X	X	X	X				10	
Brook Stickleback	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	28
Brook Trout	X				X	X				X	X	X		X	X					X		X	X		X				12	
Brown Bullhead	X		X		X		X	X	X		X						X			X					X				10	
Brown Trout NN				X	X						X	X	X						X			X	X			X			9	
Central Mudminnow	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X		X	X		X	X	X	X	X	X	X	23	
Central Stoneroller	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	28
Channel Catfish																							X						1	
Coho Salmon NN												H												X					2	
Common Carp NN	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X		X	X	X	X	X	X	X	X	23	
Common Shiner	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	27	
Creek Chub	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	28	
E. Sand Darter SAR												H											X						2	
Emerald Shiner								H						H	X								X						4	
Fantail Darter	X	X	X		X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	25	
Fathead Minnow	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	28	
Freshwater Drum																							X						1	
Gizzard Shad				X				X					X						X				X						5	
Golden Redhorse	H				X	X	X	X	X		X		X	X		H			X	X			X	X		X	X	X	17	
Golden Shiner	X		X		X	X		X	X		X		X		X		X		X	X				X	X				14	
Goldfish NN					X	X		X						X								X	X	X		X		X	10	
Greater Redhorse				X	X	X		X	X	X	X		X	X					X				X				X		12	
Green Sunfish	X	X		X	H	X	X	X	X		X	X		X	X	X	X	X	X	X	X		X				X		17	
Greenside Darter	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	27	
Hornyhead Chub	X	X		X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	24	
Iowa Darter	X			X	X			X	X	X	X		X	X					X	X	X	X	X	X					16	
Johnny Darter	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	27	
Largemouth Bass	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	26	
Least Darter	X	X		X	X	X	X		X	X	X		X	X	X	X	X	X	X	X	X	X	X	H	X	X	X	X	25	
Logperch				X				X					X						X					X					5	
Longnose Dace	H			X				X					X						X				X	X					7	
Longnose Gar								X					X										X						3	
Mimic Shiner	X	X	X	X	X	X	X	X	X		X		X	X	X	X		X	X	X			X	X	X	X	X	X	23	
Mooneye								X																					1	
Mottled Sculpin	X								X	X															X			X	5	
Muskellunge								X															X						2	
Total (80 species)	45	35	33	48	47	39	37	63	48	32	38	24	54	42	37	29	33	31	46	47	23	32	57	49	41	34	35	37		

Table 41. Fish Species Occurrences (1990 to 2020) (Continued)

Common Name	Avon	Black	Cedar	Dingman	Dorchester	Fish	Flat	Forks	Fullarton	Gregory	Ingersoll	Komoka	Medway	Middle Thames	Mud Creek	North Mitchell	North Woodstock	Otter	Oxbow	Plover Mills	Pottersburg	Reynolds	River Bend	Stoney	Trout	Waubuno	Whirl	Wye	Total counts	
N Brook Lamprey SAR								H						X					X						H	X			5	
Northern Hog Sucker	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	26	
Northern Pike	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X		X	X	X	X	X	X	X	X	X	22	
N. Redbelly Dace	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X		X	X		X	X	24
Northern Sunfish* SAR	X	X	X	X	X	X	X	X	X	X			X	X	X	X	H	X	X	X			H		X	X	X	X	23	
Pearl Dace	X	X				X	X		X			X		X	X	X			X	X					X		X	X	14	
Pugnose Minnow SAR																								H					1	
Pumpkinseed	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	28
Quillback								X					X								X							X	5	
Rainbow Darter	X	X		X	X	X	X	X	X	X	X		X	X		X		X	X	X	X	X	X	X	X	X	X	X	24	
Rainbow Trout ^{NN}	X			X				X	X			X	X	X	X				X					X	X	X			12	
Redfin Shiner			H	X		X			H				X	H				X						X					8	
River Chub					X		X	X	X				X	X	X		X	X	X	X				X	X		X	X	15	
Rock Bass	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	27
Rosyface Shiner	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	X	X		X	X		X	X	X	24	
Sea Lamprey ^{NN}								X																					1	
Shorthead Redhorse				H				X					X						X					X					5	
Silver Redhorse								X					X											X	X				4	
Silver Shiner ^{SAR}	X	X		X	X			X	X				X	X		X			X	X				X	X	X		X	X	16
Smallmouth Bass	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	27
Spotfin Shiner	X			X		X		X	H	X			X		X				X	X				X	X			X	13	
Spottail Shiner																								X					1	
Spotted Sucker ^{SAR}								X																X					2	
Stonecat	X	X	X	X	X	X		X	X	X	X		X	X	X		X	X	X	X				X	X	X	X	X	23	
Striped Shiner	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	28
Tadpole Madtom				X																									1	
Walleye								X					X							X									3	
White Bass								X																					1	
White Crappie				X										X															2	
White Perch																								X					1	
White Sucker	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	28
Yellow Bullhead				X				X	X				X						X	X		X	X				X		9	
Yellow Perch	X	X	X	X	X	X	X	X	H		X	X	X				X			X				X	X	X		X	18	
Total (80 species)	45	35	33	48	47	39	37	63	48	32	38	24	54	42	37	29	33	31	46	47	23	32	57	49	41	34	35	37		

NOTES:

There are 80 species in total, including one species with historic records only (Pugnose Minnow), seven species at risk, and six non-native species.

“X” denotes species recorded from that watershed since 1990.

“**X**” in bold denotes species newly recorded within the last 10 years for that watershed.

“H” denotes species recorded historically (last record was prior to 1990). The total for each subwatershed includes historic records.

“**H**” in bold denotes species newly historic for that watershed within last 5 years.

SAR denotes a federally and/or provincially designated species at risk.

NN denotes a species that is non-native, exotic, or introduced to the watershed.

* Northern Sunfish was previously called Longear Sunfish.

Source: Based on sampling records from UTRCA, Fisheries and Oceans Canada, Royal Ontario Museum, and Ontario Ministry of Natural Resources. Current as of 2020.

Table 42. Freshwater Mussel Species Occurrences (1980 to 2020)

Common Name	Avon	Black	Cedar	Dingman	Dorchester	Fish	Flat	Forks	Fullarton	Gregory	Ingersoll	Komoka **	Medway	Mid Thames	Mud Creek	North Mitchell	N Woodstock	Otter	Oxbow	Plover Mills	Pottersburg **	Reynolds	River Bend	Stoney	Trout	Waubuno	Whirl	Wye	Total
Black Sandshell						X		X	X					X								X							5
Creek Heelsplitter	X	X		X	X	X		X			X		X	X	X	H	X		X	X		X			X		X		17
Creeper	X			X	X	X		X	X		X		X	X		H	X	X	X	X		X	X			X	X		18
Cylindrical Floater/ Papershell	H	X		X	X								X	X	X	H	X			X		X				X	X	X	14
Deertoe								X															X						2
Elktoe				X	X	X		X	X				X	X				X		X			X						10
Fat Mucket				X		X		H	X				X	X		X	X			X			X	X	X	X	X		13
Fawnsfoot ^{SAR}																							X						1
Fluted Shell	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	X		X	X			X	X		22
Fragile Papershell								X	X										X	X			X						5
Giant Floater	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X		X	X		X	X	X	X	25
Kidneyshell ^{SAR}													X																1
Mapleleaf ^{SAR}								X															X						2
Mucket				X	X	X	X	X	X				X	X						X			X						10
Pimpleback																							X						1
Pink Heelsplitter								X												X			X						3
Plain Pocketbook				X	X	X							X							X			X						6
Pocketbook									X														X						2
Purple Wartyback ^{SAR}					X			X												X			X						4
Rainbow ^{SAR}		X		X	X	X		X	X		X		X	X		H	X	X	X	X				X			X		16
Rayed Bean ^{SAR}					X			H												X									3
Round Pigtoe ^{SAR}					X			X			X			X															4
Salamander Mussel* ^{SAR}								X															X						2
Slippershell Mussel	H	X			X		X	H	X	H		H	X	X	H	X	X	X	X							X	X		16
Spike		X	X	X	X	X		X	X	X		X	X	X	X	X	X	X	X	X			X			X	X		19
Threeridge								X															X						2
Wabash Pigtoe			X	X	X			X		X			X	X		X		X	X			X	X			X			13
Wavy-rayed Lampmussel ^{SAR}					X	X	X	X	X				X	X						X									8
White Heelsplitter				X	X	X		X								X							X				X		7
Zebra Mussel ^{NN}								X												X			X						3
Total (30 species)	6	7	4	13	17	13	5	24	13	1	9	0	15	15	6	9	11	7	9	18	0	6	22	2	2	8	10	2	

NOTES:

There are a total of 30 species, including one non-native species and nine species at risk.

“X” denotes species has been recorded from that watershed since 1980.

“H” denotes species recorded historically, with the last record prior to 1980.

SAR denotes a federally and/or provincially designated species at risk (endangered, threatened, and special concern).

NN = a species that is non-native, exotic, or introduced to the watershed.

* Salamander Mussel was previously called Mudpuppy Mussel

** Lack of mussel records in Komoka and Pottersburg watersheds is due to lack of sampling effort.

Source: Based on sampling records from UTRCA, Fisheries and Oceans, and Environment and Climate Change Canada. Current as of 2020.

Table 43. Species at Risk, 1989 to 2020 Records

Watershed	Common Name	Scientific Name	Taxon Group	SARO	Freq
Avon River	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	25
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	388
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	20
	Canada Warbler	<i>Cardellina canadensis</i>	Birds	SC	19
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	432
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	41
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	10
	Peregrine Falcon	<i>Falco peregrinus</i>	Birds	SC	7
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	18
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	19
	Silver Shiner	<i>Notropis photogenis</i>	Fish	THR	2
	Monarch	<i>Danaus plexippus</i>	Insect	SC	5
	American Badger	<i>Taxidea taxus</i>	Mammal	END	1
	Gray Fox	<i>Urocyon cinereoargenteus</i>	Mammal	THR	1
	Midland Painted Turtle	<i>Chrysemys guttata</i>	Reptiles and Turtles	SC	9
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	18
	Cucumber Tree	<i>Magnolia acuminata</i>	Vascular Plants	END	1
	Kentucky Coffee-tree	<i>Gymnocladus dioicus</i>	Vascular Plants	THR	1
Black Creek	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	2
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	83
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	37
	Canada Warbler	<i>Cardellina canadensis</i>	Birds	SC	1
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	5
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	6
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	5
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	
	Silver Shiner	<i>Notropis photogenis</i>	Fish	THR	2
	Monarch Butterfly	<i>Danaus plexippus</i>	Insect	SC	1
	Rainbow Mussel	<i>Cambarunio iris</i>	Molluscs	SC	1
	Midland Painted Turtle	<i>Chrysemys guttata</i>	Reptiles and Turtles	SC	2
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	6
Cedar Creek	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	7
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	47
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	5
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	35
	Peregrine Falcon	<i>Falco peregrinus</i>	Birds	SC	1
	Piping Plover	<i>Charadrius melodus</i>	Birds	END	1
	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Birds	SC	1
	Short-eared Owl	<i>Asio flammeus</i>	Birds	SC	1
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	5
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	3
	Midland Painted Turtle	<i>Chrysemys guttata</i>	Reptiles and turtles	SC	2
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	37
	American Chestnut	<i>Castanea dentata</i>	Vascular Plants	END	1
	Butternut	<i>Juglans cinerea</i>	Vascular Plants	END	6
	Kentucky Coffee-tree	<i>Gymnocladus dioicus</i>	Vascular Plants	THR	1

Table 43. Species at Risk, 1989 to 2020 Records (Continued)

Watershed	Common Name	Scientific Name	Taxon Group	SARO	Freq
Dingman Creek	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Birds	SC	2
	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	49
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	362
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	17
	Canada Warbler	<i>Cardellina canadensis</i>	Birds	SC	28
	Cerulean Warbler	<i>Setophaga cerulea</i>	Birds	THR	1
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	51
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	96
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	14
	Grasshopper Sparrow	<i>Ammadramus savannarum</i>	Birds	SC	7
	Horned Grebe	<i>Podiceps auritus</i>	Birds	SC	5
	Least Bittern	<i>Ixobrychus exilis</i>	Birds	THR	9
	Peregrine Falcon	<i>Falco peregrinus</i>	Birds	SC	8
	Prothonotary Warbler	<i>Protonotaria citrea</i>	Birds	END	3
	Short-eared Owl	<i>Asio flammeus</i>	Birds	SC	1
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	71
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	
	Silver Shiner	<i>Notropis photogenis</i>	Fish	THR	3
	Monarch	<i>Danaus plexippus</i>	Insect	SC	8
	American Badger	<i>Taxidea taxus</i>	Mammals	END	3
	Mapleleaf Mussel	<i>Quadrula quadrula</i>	Molluscs	SC	1
	Rainbow	<i>Cambarunio iris</i>	Molluscs	THR	4
	Blanding's Turtle	<i>Emydoidea blandingii</i>	Reptiles and Turtles	THR	1
	Butler's Gartersnake	<i>Thamnophis butleri</i>	Reptiles and Turtles	END	4
	Eastern Hog-nosed Snake	<i>Heterodon platirhinos</i>	Reptiles and Turtles	THR	6
	Midland Painted Turtle	<i>Chrysemys guttata</i>	Reptiles and turtles	SC	36
	Northern Map Turtle	<i>Graptemys geographica</i>	Reptiles and Turtles	SC	5
	Queensnake	<i>Regina septemvittata</i>	Reptiles and Turtles	END	2
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	39
	Spiny Softshell	<i>Apalone spinifera</i>	Reptiles and Turtles	END	26
	Spotted Turtle	<i>Clemmys guttata</i>	Reptiles and Turtles	END	1
	American Chestnut	<i>Castanea dentata</i>	Vascular Plants	END	19
	Blue Ash	<i>Fraxinus quadrangulata</i>	Vascular Plants	THR	8
Broad Beech Fern	<i>Phegopteris hexagonoptera</i>	Vascular Plants	SC	1	
Butternut	<i>Juglans cinerea</i>	Vascular Plants	END	43	
Eastern Flowering Dogwood	<i>Cornus florida</i>	Vascular Plants	END	1	
False Hop Sedge	<i>Carex lupuliformis</i>	Vascular Plants	END	10	

Table 43. Species at Risk, 1989 to 2020 Records (Continued)

Watershed	Common Name	Scientific Name	Taxon Group	SARO	Freq
Dorchester	Acadian Flycatcher	<i>Empidonax vireescens</i>	Birds	END	2
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Birds	SC	3
	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	15
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	73
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	4
	Canada Warbler	<i>Cardellina canadensis</i>	Birds	SC	3
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	8
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	4
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	2
	Golden-winged Warbler	<i>Vermivora chrysoptera</i>	Birds	SC	2
	Northern Bobwhite	<i>Colinus virginianus</i>	Birds	END	2
	Peregrine Falcon	<i>Falco peregrinus</i>	Birds	SC	3
	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Birds	SC	2
	Short-eared Owl	<i>Asio flammeus</i>	Birds	SC	2
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	27
	Black Redhorse	<i>Moxostomoa duquesnei</i>	Fish	THR	9
	Silver Shiner	<i>Notropis photogenis</i>	Fish	SC	3
	Monarch	<i>Danaus plexippus</i>	Insect	SC	2
	Rapids Clubtail	<i>Phanogomphus quadricolor</i>	Insects	END	1
	Purple Wartyback	<i>Rotundaria tuberculata</i>	Molluscs	UC*	
	Rainbow Mussel	<i>Cambarunio iris</i>	Molluscs	END	9
	Rayed Bean	<i>Paetulunio fabalis</i>	Molluscs	END	2
	Round Pigtoe	<i>Pleurobema sintoxia</i>	Molluscs	END	4
	Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	Molluscs	SC	23
	Blanding's Turtle	<i>Emydoidea blandingii</i>	Reptiles and Turtles	THR	3
	Midland Painted Turtle	<i>Chrysemys guttata</i>	Reptiles and Turtles	SC	25
	Northern Map Turtle	<i>Graptemys geographica</i>	Reptiles and Turtles	SC	5
	Queensnake	<i>Regina septemvittata</i>	Reptiles and Turtles	END	1
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	16
	Spiny Softshell	<i>Apalone spinifera</i>	Reptiles and Turtles	END	5
	American Ginseng	<i>Panax quinquefolius</i>	Vascular Plants	end	3
	Butternut	<i>Juglans cinerea</i>	Vascular Plants	END	6
	False Hop Sedge	<i>Carex lupuliformis</i>	Vascular Plants	END	1
	Green Dragon	<i>Arisaema dracontium</i>	Vascular Plants	SC	1
Wood-poppy	<i>Stylophorum diphyllum</i>	Vascular Plants	END	27	

Table 43. Species at Risk, 1989 to 2020 Records (Continued)

Watershed	Common Name	Scientific Name	Taxon Group	SARO	Freq
Fish Creek	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	2
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	88
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	20
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	8
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	1
	Least Bittern	<i>Ixobrychus exilis</i>	Birds	THR	1
	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Birds	SC	3
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	8
	Black Redhorse	<i>Moxostoma duquesnei</i>	Fish	THR	1
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	19
	Redside Dace	<i>Clinostomus elongatus</i>	Fish	END	1
	Monarch	<i>Danaus plexippus</i>	Insect	SC	1
	Rainbow	<i>Cambarunio iris</i>	Molluscs	THR	3
	Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	Molluscs	SC	2
	Midland Painted Turtle	<i>Chrysemys guttata</i>	Reptiles and Turtles	SC	1
	Spiny Softshell	<i>Apalone spinifera</i>	Reptiles and Turtles	END	2
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	3
	Butternut	<i>Juglans cinerea</i>	Vascular Plants	END	1
Flat Creek	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	1
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	26
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	6
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	2
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	1
	Northern Bobwhite	<i>Colinus virginianus</i>	Birds	END	1
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	7
	Black Redhorse	<i>Moxostoma duquesnei</i>	Fish	THR	2
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	2
	Rayed Bean	<i>Paetulunio fabalis</i>	Molluscs	END	1
	Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	Molluscs	THR	1
	Midland Painted Turtle	<i>Chrysemys guttata</i>	Reptiles and Turtles	SC	1
	Butternut	<i>Juglans cinerea</i>	Vascular Plants	END	1
	Green Dragon	<i>Arisaema dracontium</i>	Vascular Plants	SC	1

Table 43. Species at Risk, 1989 to 2020 Records (Continued)

Watershed	Common Name	Scientific Name	Taxon Group	SARO	Freq
Forks	Acadian Flycatcher	<i>Empidonax virescens</i>	Birds	END	2
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Birds	SC	14
	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	68
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	467
	Black Tern	<i>Chlidonias niger</i>	Birds	SC	1
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	13
	Canada Warbler	<i>Cardellina canadensis</i>	Birds	SC	26
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	704
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	50
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	9
	Northern Bobwhite	<i>Colinus virginianus</i>	Birds	END	2
	Olive-sided Flycatcher	<i>Contopus cooperi</i>	Birds	SC	1
	Peregrine Falcon	<i>Falco peregrinus</i>	Birds	SC	101
	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Birds	SC	1
	Short-eared Owl	<i>Asio flammeus</i>	Birds	SC	1
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	26
	Yellow-breasted Chat	<i>Icteria virens</i>	Birds	END	1
	Black Redhorse	<i>Moxostoma duquesnei</i>	Fish	THR	13
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	2
	Silver Shiner	<i>Notropis photogenis</i>	Fish	SC	14
	Spotted Gar	<i>Lepisosteus oculatus</i>	Fish	END	1
	Spotted Sucker	<i>Minytrema melanops</i>	Fish	SC	3
	Monarch	<i>Danaus plexippus</i>	Insect	SC	17
	Rusty-patched Bumble Bee	<i>Bombus affinis</i>	Insect	END	10
	American Badger	<i>Taxidea taxus</i>	Mammals	END	5
	Little Brown Myotis	<i>Myotis lucifugus</i>	Mammals	END	1
	Tricolored Bat	<i>Perimyotis subflavus</i>	Mammals	END	1
	Mapleleaf Mussel	<i>Quadrula quadrula</i>	Molluscs	SC	
	Purple Wartback	<i>Rotundaria tuberculata</i>	Molluscs	UC*	
	Rainbow	<i>Cambarunio iris</i>	Molluscs	THR	1
	Rayed Bean	<i>Paetulunio fabalis</i>	Molluscs	END	2
	Round Pigtoe	<i>Pleurobema sintoxia</i>	Molluscs	END	1
	Salamander Mussel	<i>Simpsonaias ambigua</i>	Molluscs	END	
	Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	Molluscs	THR	12
	Common Five-lined Skink	<i>Plestiodon fasciatus pop. 1</i>	Reptiles and Turtles	END	1
	Eastern Hog-nosed Snake	<i>Heterodon platirhinos</i>	Reptiles and Turtles	THR	7
	Midland Painted Turtle	<i>Chrysemys picta marginata</i>	Reptiles and Turtles	SC	48
	Northern Map Turtle	<i>Graptemys geographica</i>	Reptiles and Turtles	SC	397
	Queensnake	<i>Regina septemvittata</i>	Reptiles and Turtles	END	252
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	77
	Spiny Softshell	<i>Apalone spinifera</i>	Reptiles and Turtles	END	568
	American Chestnut	<i>Castanea dentata</i>	Vascular Plants	END	9
	Butternut	<i>Juglans cinerea</i>	Vascular Plants	END	43
	Cucumber Tree	<i>Magnolia acuminata</i>	Vascular Plants	END	6
	Eastern False Rue-anemone	<i>Enemion biternatum</i>	Vascular Plants	THR	2
	Eastern Flowering Dogwood	<i>Cornus florida</i>	Vascular Plants	END	1
Eastern Prickly-pear cactus	<i>Opuntia cespitosa</i>	Vascular Plants	END	1	
Green Dragon	<i>Arisaema dracontium</i>	Vascular Plants	SC	5	
Kentucky Coffee-tree	<i>Gymnocladus dioicus</i>	Vascular Plants	THR	8	

Table 43. Species at Risk, 1989 to 2020 Records (Continued)

Watershed	Common Name	Scientific Name	Taxon Group	SARO	Freq
Fullarton	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Birds	SC	1
	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	4
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	120
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	41
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	1
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	15
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	5
	Horned Grebe	<i>Podiceps auritus</i>	Birds	SC	3
	Short-eared Owl	<i>Asio flammeus</i>	Birds	SC	1
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	7
	Black Redhorse	<i>Moxostoma duquesnei</i>	Fish	THR	3
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	24
	Silver Shiner	<i>Notropis photogenis</i>	Fish	SC	13
	Monarch	<i>Danaus plexippus</i>	Insect	SC	17
	Rainbow	<i>Cambarunio iris</i>	Molluscs	THR	5
	Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	Molluscs	THR	3
	Midland Painted Turtle	<i>Chrysemys picta marginata</i>	Reptiles and Turtles	SC	6
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	21
	Kentucky Coffee-tree	<i>Gymnocladus dioicus</i>	Vascular Plants	THR	1
Gregory Creek	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	1
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	16
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	6
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	8
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	1
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	2
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	2
Ingersoll	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Birds	SC	1
	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	15
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	107
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	13
	Canada Warbler	<i>Cardellina canadensis</i>	Birds	SC	9
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	57
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	10
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	3
	Peregrine Falcon	<i>Falco peregrinus</i>	Birds	SC	17
	Prothonotary Warbler	<i>Protonotaria citrea</i>	Birds	END	1
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	11
	Monarch	<i>Danaus plexippus</i>	Insect	SC	1
	Yellow-banded Bumble Bee	<i>Bombus terricola</i>	Insect	SC	1
	American Badger	<i>Taxidea taxus</i>	Mammals	END	3
	Gray Fox	<i>Urocyon cinereoargenteus</i>	Mammals	THR	1
	Rainbow	<i>Cambarunio iris</i>	Molluscs	THR	1
	Round Pigtoe	<i>Pleurobema sintoxia</i>	Molluscs	END	1
	Midland Painted Turtle	<i>Chrysemys picta marginata</i>	Reptiles and Turtles	SC	4
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	10
	Spiny Softshell	<i>Apalone spinifera</i>	Reptiles and Turtles	END	9
	Broad Beech Fern	<i>Phegopteris hexagonoptera</i>	Vascular Plants	SC	1
Butternut	<i>Juglans cinerea</i>	Vascular Plants	END	32	
Cucumber Tree	<i>Magnolia acuminata</i>	Vascular Plants	END	1	

Table 43. Species at Risk, 1989 to 2020 Records (Continued)

Watershed	Common Name	Scientific Name	Taxon Group	SARO	Freq
Komoka Creek	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	8
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	1
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	2
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	3
	Golden-winged Warbler	<i>Vermivora chrysoptera</i>	Birds	SC	1
	Louisiana Waterthrush	<i>Parkesia motacilla</i>	Birds	SC	6
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	3
	Yellow-breasted Chat	<i>Icteria virens</i>	Birds	END	3
	Monarch	<i>Danaus plexippus</i>	Insect	SC	1
	Eastern Hog-nosed Snake	<i>Heterodon platirhinos</i>	Reptiles and Turtles	THR	1
	Midland Painted Turtle	<i>Chrysemys picta marginata</i>	Reptiles and Turtles	SC	2
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	1
	Spiny Softshell	<i>Apalone spinifera</i>	Reptiles and Turtles	END	2
	Crooked-stem Aster	<i>Symphotrichum prenanthoides</i>	Vascular Plants	SC	2
	Tuberous Indian-plantain	<i>Arnoglossum plantagineum</i>	Vascular Plants	SC	5
	Willow-leaved Aster	<i>Symphotrichum praealtum</i>	Vascular Plants	THR	1
Medway Creek	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Birds	SC	1
	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	1
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	111
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	13
	Canada Warbler	<i>Cardellina canadensis</i>	Birds	SC	4
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	26
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	19
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	5
	Olive-sided Flycatcher	<i>Contopus cooperi</i>	Birds	SC	1
	Peregrine Falcon	<i>Falco peregrinus</i>	Birds	SC	1
	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Birds	SC	1
	Short-eared Owl	<i>Asio flammeus</i>	Birds	SC	3
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	23
	Yellow-breasted Chat	<i>Icteria virens</i>	Birds	SC	1
	Black Redhorse	<i>Moxostoma duquesnei</i>	Fish	THR	13
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	29
	Silver Shiner	<i>Notropis photogenis</i>	Fish	SC	41
	Monarch	<i>Danaus plexippus</i>	Insect	SC	6
	Kidneyshell	<i>Ptychobranthus fasciolaris</i>	Molluscs	END	2
	Rainbow Mussel	<i>Cambarunio iris</i>	Molluscs	SC	16
	Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	Molluscs	THR	10
	Midland Painted Turtle	<i>Chrysemys picta marginata</i>	Reptiles and Turtles	SC	6
	Northern Map Turtle	<i>Graptemys geographica</i>	Reptiles and Turtles	SC	2
	Queensnake	<i>Regina septemvittata</i>	Reptiles and Turtles	END	4
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	14
	Spiny Softshell	<i>Apalone spinifera</i>	Reptiles and Turtles	END	13
	Butternut	<i>Juglans cinerea</i>	Vascular Plants	END	11
	Eastern False Rue-anemone	<i>Enemion biternatum</i>	Vascular Plants	THR	45
	Green Dragon	<i>Arisaema dracontium</i>	Vascular Plants	SC	18
	Kentucky Coffee-tree	<i>Gymnocladus dioicus</i>	Vascular Plants	THR	1

Table 43. Species at Risk, 1989 to 2020 Records (Continued)

Watershed	Common Name	Scientific Name	Taxon Group	SARO	Freq
Middle Thames	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Birds	SC	1
	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	3
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	91
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	31
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	7
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	8
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	12
	Peregrine Falcon	<i>Falco peregrinus</i>	Birds	SC	1
	Short-eared Owl	<i>Asio flammeus</i>	Birds	SC	1
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	5
	Yellow-breasted Chat	<i>Icteria virens</i>	Birds	END	1
	Black Redhorse	<i>Moxostoma duquesnei</i>	Fish	THR	9
	Northern Brook Lamprey	<i>Ichthyomyzon fossor</i>	Fish	SC	
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	1
	Silver Shiner	<i>Notropis photogenis</i>	Fish	SC	10
	Monarch	<i>Danaus plexippus</i>	Insect	SC	1
	American Badger	<i>Taxidea taxus</i>	Mammals	END	1
	Rainbow Mussel	<i>Cambarunio iris</i>	Molluscs	SC	10
	Round Pigtoe	<i>Pleurobema sintoxia</i>	Molluscs	END	9
	Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	Molluscs	THR	11
Midland Painted Turtle	<i>Chrysemys picta marginata</i>	Reptiles and Turtles	SC	4	
Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	4	
Spiny Softshell	<i>Apalone spinifera</i>	Reptiles and Turtles	END	2	
Green Dragon	<i>Arisaema dracontium</i>	Vascular Plants	SC	1	
Mud Creek	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Birds	SC	1
	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	6
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	30
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	1
	Canada Warbler	<i>Cardellina canadensis</i>	Birds	SC	1
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	1
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	1
	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Birds	SC	1
	Short-eared Owl	<i>Asio flammeus</i>	Birds	SC	1
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	7
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	
	American Badger	<i>Taxidea taxus</i>	Mammals	END	1
	Midland Painted Turtle	<i>Chrysemys picta marginata</i>	Reptiles and Turtles	SC	2
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	2
	Spotted Turtle	<i>Clemmys guttata</i>	Reptiles and Turtles	END	1
Green Dragon	<i>Arisaema dracontium</i>	Vascular Plants	SC	1	
North Mitchell	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	3
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	6
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	1
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	1
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	2
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	1
	Golden Eagle	<i>Aquila chrysaetos</i>	Birds	END	1
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	2
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	
	Midland Painted Turtle	<i>Chrysemys picta marginata</i>	Reptiles and Turtles	SC	3
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	3

Table 43. Species at Risk, 1989 to 2020 Records (Continued)

Watershed	Common Name	Scientific Name	Taxon Group	SARO	Freq
North Woodstock	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	24
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	110
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	10
	Canada Warbler	<i>Cardellina canadensis</i>	Birds	SC	2
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	19
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	24
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	3
	Horned Grebe	<i>Podiceps auritus</i>	Birds	SC	1
	Least Bittern	<i>Ixobrychus exilis</i>	Birds	THR	2
	Peregrine Falcon	<i>Falco peregrinus</i>	Birds	SC	2
	Prothonotary Warbler	<i>Protonotaria citrea</i>	Birds	END	1
	Short-eared Owl	<i>Asio flammeus</i>	Birds	SC	1
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	1
	Monarch	<i>Danaus plexippus</i>	Insect	SC	2
	American Badger	<i>Taxidea taxus</i>	Mammals	END	1
	Rainbow	<i>Cambarunio iris</i>	Molluscs	SC	1
	Midland Painted Turtle	<i>Chrysemys picta marginata</i>	Reptiles and Turtles	SC	16
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	16
	Butternut	<i>Juglans cinerea</i>	Vascular Plants	END	49
Otter Creek	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	3
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	12
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	4
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	1
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	4
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	1
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	1
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	5
	Gray Fox	<i>Urocyon cinereoargenteus</i>	Mammals	THR	1
	Rainbow	<i>Cambarunio iris</i>	Molluscs	SC	2
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	3
Oxbow Creek	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Birds	SC	1
	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	1
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	47
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	8
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	2
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	16
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	2
	Northern Bobwhite	<i>Colinus virginianus</i>	Birds	END	1
	Peregrine Falcon	<i>Falco peregrinus</i>	Birds	SC	1
	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Birds	SC	2
	Short-eared Owl	<i>Asio flammeus</i>	Birds	SC	1
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	4
	Northern Brook Lamprey	<i>Ichthyomyzon fossor</i>	Fish	SC	2
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	1
	Silver Shiner	<i>Notropis photogenis</i>	Fish	SC	3
	American Badger	<i>Taxidea taxus</i>	Mammals	END	1
	Rainbow	<i>Cambarunio iris</i>	Molluscs	THR	1
	Midland Painted Turtle	<i>Chrysemys picta marginata</i>	Reptiles and Turtles	SC	1
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	7
	Butternut	<i>Juglans cinerea</i>	Vascular Plants	END	3
Eastern Flowering Dogwood	<i>Cornus florida</i>	Vascular Plants	END	2	
Green Dragon	<i>Arisaema dracontium</i>	Vascular Plants	SC	8	

Table 43. Species at Risk, 1989 to 2020 Records (Continued)

Watershed	Common Name	Scientific Name	Taxon Group	SARO	Freq
Plover Mills	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Birds	SC	26
	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	27
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	249
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	54
	Canada Warbler	<i>Cardellina canadensis</i>	Birds	SC	3
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	42
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	69
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	3
	Peregrine Falcon	<i>Falco peregrinus</i>	Birds	SC	1
	Short-eared Owl	<i>Asio flammeus</i>	Birds	SC	4
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	19
	Black Redhorse	<i>Moxostoma duquesnei</i>	Fish	THR	12
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	12
	River Redhorse	<i>Moxostoma carinatum</i>	Fish	SC	1
	Silver Shiner	<i>Notropis photogenis</i>	Fish	THR	13
	American Badger	<i>Taxidea taxus</i>	Mammals	END	1
	Kidneyshell	<i>Ptychobranchus fasciolaris</i>	Molluscs	END	1
	Purple Wartyback	<i>Rotundaria tuberculata</i>	Molluscs	UC*	
	Rainbow	<i>Cambarunio iris</i>	Molluscs	SC	7
	Rayed Bean	<i>Paetulunio fabalis</i>	Molluscs	END	11
	Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	Molluscs	THR	43
	Midland Painted Turtle	<i>Chrysemys picta marginata</i>	Reptiles and Turtles	SC	3
	Northern Map Turtle	<i>Graptemys geographica</i>	Reptiles and Turtles	SC	11
	Queensnake	<i>Regina septemvittata</i>	Reptiles and Turtles	END	3
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	42
	Spiny Softshell	<i>Apalone spinifera</i>	Reptiles and Turtles	END	64
	Blue Ash	<i>Fraxinus quadrangulata</i>	Vascular Plants	THR	1
	Broad Beech Fern	<i>Phegopteris hexagonoptera</i>	Vascular Plants	SC	1
	Butternut	<i>Juglans cinerea</i>	Vascular Plants	END	2
	Cucumber Tree	<i>Magnolia acuminata</i>	Vascular Plants	END	1
Green Dragon	<i>Arisaema dracontium</i>	Vascular Plants	SC	1	
Wood-poppy	<i>Stylophorum diphyllum</i>	Vascular Plants	END	23	
Pottersburg Creek	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	32
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	5
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	9
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	28
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	3
	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Birds	SC	2
	Queensnake	<i>Regina septemvittata</i>	Reptiles and Turtles	END	1
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	2
Reynolds Creek	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	13
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	63
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	11
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	2
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	5
	Golden-winged Warbler	<i>Vermivora chrysoptera</i>	Birds	SC	1
	Least Bittern	<i>Ixobrychus exilis</i>	Birds	THR	2
	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Birds	SC	1
	Short-eared Owl	<i>Asio flammeus</i>	Birds	SC	1
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	11
	American Badger	<i>Taxidea taxus</i>	Mammals	END	3
	Midland Painted Turtle	<i>Chrysemys picta marginata</i>	Reptiles and Turtles	SC	26
Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	6	

Table 43. Species at Risk, 1989 to 2020 Records (Continued)

Watershed	Common Name	Scientific Name	Taxon Group	SARO	Freq
River Bend	American White Pelican	<i>Pelecanus erythrorhynchos</i>	Birds	THR	1
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Birds	SC	20
	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	54
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	403
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	23
	Canada Warbler	<i>Cardellina canadensis</i>	Birds	SC	6
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	36
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	303
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	1
	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	Birds	SC	2
	Horned Grebe	<i>Podiceps auritus</i>	Birds	SC	2
	Least Bittern	<i>Ixobrychus exilis</i>	Birds	THR	1
	Louisiana Waterthrush	<i>Parkesia motacilla</i>	Birds	THR	1
	Peregrine Falcon	<i>Falco peregrinus</i>	Birds	SC	4
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	36
	Black Redhorse	<i>Moxostoma duquesnei</i>	Fish	THR	5
	Eastern Sand Darter	<i>Ammocrypta pellucida</i>	Fish	END	57
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	3
	Silver Shiner	<i>Notropis photogenis</i>	Fish	THR	11
	Spotted Sucker	<i>Minytrema melanops</i>	Fish	SC	2
	Monarch	<i>Danaus plexippus</i>	Insect	SC	10
	American Badger	<i>Taxidea taxus</i>	Mammals	END	3
	Fawnsfoot	<i>Truncilla donaciformis</i>	Molluscs	END	
	Mapleleaf	<i>Quadrula quadrula</i>	Molluscs	SC	2
	Purple Wartyback	<i>Rotundaria tuberculata</i>	Molluscs	UC*	
	Salamander Mussel	<i>Simpsonaias ambigua</i>	Molluscs	END	1
	Eastern Hog-nosed Snake	<i>Heterodon platirhinus</i>	Reptiles and Turtles	THR	34
	Midland Painted Turtle	<i>Chrysemys picta marginata</i>	Reptiles and Turtles	SC	22
	Northern Map Turtle	<i>Graptemys geographica</i>	Reptiles and Turtles	SC	187
	Queensnake	<i>Regina septemvittata</i>	Reptiles and Turtles	END	4
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	10
	Spiny Softshell	<i>Apalone spinifera</i>	Reptiles and Turtles	END	832
	American Chestnut	<i>Castanea dentata</i>	Vascular Plants	END	7
	Blue Ash	<i>Fraxinus quadrangulata</i>	Vascular Plants	THR	10
Eastern False Rue-anemone	<i>Enemion biternatum</i>	Vascular Plants	THR	1	
False Hop Sedge	<i>Carex lupuliformis</i>	Vascular Plants	END	2	
Goldenseal	<i>Hydrastis canadensis</i>	Vascular Plants	THR	4	
Green Dragon	<i>Arisaema dracontium</i>	Vascular Plants	SC	1	

Table 43. Species at Risk, 1989 to 2020 Records (Continued)

Watershed	Common Name	Scientific Name	Taxon Group	SARO	Freq
Stoney Creek	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Birds	SC	3
	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	10
	Barn Owl	<i>Tyto alba</i>	Birds	END	1
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	157
	Black Tern	<i>Chlidonias niger</i>	Birds	SC	1
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	7
	Canada Warbler	<i>Cardellina canadensis</i>	Birds	SC	1
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	20
	Common Nighthawk	<i>Chordeiles minor</i>	Birds	SC	2
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	14
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	1
	Golden Eagle	<i>Aquila chrysaetos</i>	Birds	END	2
	Horned Grebe	<i>Podiceps auritus</i>	Birds	SC	1
	Olive-sided Flycatcher	<i>Contopus cooperi</i>	Birds	SC	2
	Peregrine Falcon	<i>Falco peregrinus</i>	Birds	SC	13
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	1
	Yellow-breasted Chat	<i>Icteria virens</i>	Birds	END	3
	Black Redhorse	<i>Moxostoma duquesnei</i>	Fish	THR	9
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	13
	Silver Shiner	<i>Notropis photogenis</i>	Fish	THR	4
	Monarch	<i>Danaus plexippus</i>	Insect	SC	20
	Rainbow	<i>Cambarunio iris</i>	Molluscs	SC	12
	Midland Painted Turtle	<i>Chrysemys picta marginata</i>	Reptiles and Turtles	SC	4
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	6
	Spiny Softshell	<i>Apalone spinifera</i>	Reptiles and Turtles	END	2
	Butternut	<i>Juglans cinerea</i>	Vascular Plants	END	5
Dense Blazing-star	<i>Liatris spicata</i>	Vascular Plants	THR	1	
Trout Creek	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Birds	SC	1
	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	22
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	82
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	14
	Canada Warbler	<i>Cardellina canadensis</i>	Birds	SC	2
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	7
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	2
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	7
	Least Bittern	<i>Ixobrychus exilis</i>	Birds	THR	1
	Peregrine Falcon	<i>Falco peregrinus</i>	Birds	SC	11
	Piping Plover	<i>Charadrius melodus</i>	Birds	END	2
	Short-eared Owl	<i>Asio flammeus</i>	Birds	SC	1
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	11
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	2
	Silver Shiner	<i>Notropis photogenis</i>	Fish	THR	2
	Monarch	<i>Danaus plexippus</i>	Insect	SC	2
	Eastern Ribbonsnake	<i>Thamnophis sauritus</i>	Reptiles and Turtles	SC	4
	Midland Painted Turtle	<i>Chrysemys picta marginata</i>	Reptiles and Turtles	SC	3
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	10
	Butternut	<i>Juglans cinerea</i>	Vascular Plants	END	16

Table 43. Species at Risk, 1989 to 2020 Records (Continued)

Watershed	Common Name	Scientific Name	Taxon Group	SARO	Freq
Waubuno Creek	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	32
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	5
	Canada Warbler	<i>Cardellina canadensis</i>	Birds	SC	2
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	1
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	1
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	5
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	4
	Black Redhorse	<i>Moxostoma duquesnei</i>	Fish	THR	12
	Northern Brook Lamprey	<i>Ichthyomyzon fossor</i>	Fish	SC	5
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	2
	Butternut	<i>Juglans cinerea</i>	Vascular Plants	END	2
Whirl Creek	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	93
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	321
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	29
	Canada Warbler	<i>Cardellina canadensis</i>	Birds	SC	1
	Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	122
	Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	133
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	5
	Horned Grebe	<i>Podiceps auritus</i>	Birds	SC	1
	Peregrine Falcon	<i>Falco peregrinus</i>	Birds	SC	22
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	13
	Northern Sunfish	<i>Lepomis peltastes</i>	Fish	SC	5
	Silver Shiner	<i>Notropis photogenis</i>	Fish	THR	1
	Rainbow	<i>Cambarunio iris</i>	Molluscs	SC	
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	2
Wye Creek	Bank Swallow	<i>Riparia riparia</i>	Birds	THR	2
	Barn Swallow	<i>Hirundo rustica</i>	Birds	THR	20
	Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	4
	Canada Warbler	<i>Cardellina canadensis</i>	Birds	SC	1
	Eastern Wood-pewee	<i>Contopus virens</i>	Birds	SC	3
	Peregrine Falcon	<i>Falco peregrinus</i>	Birds	SC	1
	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Birds	SC	1
	Wood Thrush	<i>Hylocichla mustelina</i>	Birds	SC	2
	Black Redhorse	<i>Moxostoma duquesnei</i>	Fish	THR	1
	Silver Shiner	<i>Notropis photogenis</i>	Fish	THR	2
	Monarch	<i>Danaus plexippus</i>	Insect	SC	5
	Snapping Turtle	<i>Chelydra serpentina</i>	Reptiles and Turtles	SC	4

NOTES:

COSEWIC = Committee on the Status of Endangered Wildlife in Canada.

SARO = Species at Risk in Ontario, designated by the Ontario Ministry of Natural Resources and Forestry in accordance with the provincial Endangered Species Act (ESA, 2007).

END = Endangered, THR = Threatened, SC = Special Concern, NAR = Not at Risk, UC = Under Consideration

Freq = Frequency or number of locations recorded (from NHIC records)

GL = Great Lakes/St. Lawrence - Canadian Shield population

Total 85 species: 29 birds, 10 fish, 3 invertebrates, 4 mammals, 10 molluscs, 11 reptiles and turtles, 18 vascular plants

Source: Data provided by NHIC March 2021. Data is based on species observation but have not all been confirmed by NHIC.

A few additional records have been added based on sightings by UTRCA staff.

* COSSARO evaluated Purple Wartyback as Threatened (2021). As of Nov. 2022, it is not included in the Species at Risk in Ontario List under the Endangered Species Act.

Table 44. Municipal Well Supplies and Private Wells

Watershed	Municipal			Private
	Name of Well Supply	No. of Wells	Population Served	No. of Wells
Avon	Stratford	11	34,200	915
Black	Sebringville (supplies part of Sebringville)	1	90	461
Cedar	Woodstock (see North Woodstock)			694
Dingman				1,613
Dorchester	Dorchester Well Supply	9	4,360	1,087
Fish				398
Flat				187
Forks				1,354
Fullarton	Mitchell (see North Mitchell)			268
Gregory				231
Ingersoll	Beachville	1	210	1,568
	Ingersoll (2 of 7 wells now in Reynolds Creek watershed*)	7	13,600	
	Woodstock (see North Woodstock)			
Komoka				400
Medway	Birr	1	55	1,123
Middle Thames	Thamesford (1 added since 2017)	4	2,430	594
Mud Creek	Embro	2	850	532
North Mitchell	Mitchell	4	4,870	396
North Woodstock	Hickson (supplies part of Hickson)	1	100	1,398
	Innerkip	2	1,290	
	Shakespeare (supplies part of Shakespeare), 1 added since 2017	2	260	
	Tavistock	3	3,010	
	Woodstock	11	44,790	
Otter	St. Pauls	1	90	152
Oxbow	Melrose	2	220	594
Plover Mills	St. Marys (see Trout Creek)			473
Pottersburg				399
Reynolds	Mount Elgin (also see Ingersoll watershed)	2	605	699
River Bend	1 London Backup Wells (now decommissioned)			708
Stoney	6 London Backup Wells (now decommissioned)			260
Trout	St. Marys	3	7,390	506
Waubuno	Lakeside	1	385	509
Whirl	Mitchell (see North Mitchell)			340
Wye	Thorndale	2	800	302
Total		70	119,605	18,161

Table 44. Municipal Well Supplies and Private Wells (Continued)

NOTES:

Number of Private Wells: Includes private wells on record used for drinking water, agriculture, and industry. Some may be discontinued. Private wells do not include the many monitoring/observation wells that have been added since 2015, especially in the Forks watershed.

* Updated watershed boundary corrections have now placed some municipal wells in a different watershed compared to that reported in the 2017 WRCs.

This data set represents the point features and well summary information extracted from the Well Water Information System (WWIS). The WWIS is the authoritative well record data set maintained by the MECP. When wells are constructed, altered, or abandoned, the person who performs the work must report to the MECP under Regulation 903 (Wells) made under the Ontario Water Resources Act by completed the well record form.

Population served is approximate.

Source: Ministry of Environment, Conservation, and Parks (MECP). Data obtained from www.ontario.ca/page/open-government-licence-ontario. Data contains well locations from 1921 to 2021 from the Water Well Information System (WWIS).

Table 45. Provincial Groundwater Monitoring Network Wells

Watershed	Number of Wells	PGMN Well Numbers and Names/Locations
Avon	5	218 Shakespeare CA well nest; 503, 504 Avon well nest
Black	1	368 Ellice
Cedar		
Dingman	1	469 Westminster Ponds
Dorchester	2	487 Dorchester; 53 Thamesford
Fish	4	371 Fish Creek CA well nest; 501 and 502 Kirkton well nest
Flat	1	405 St. Marys Petroleum
Forks		
Fullarton	1	54 Motherwell
Gregory		
Ingersoll	2	481 Budd Line; 201 Golspie
Komoka		
Medway		
Middle Thames		
Mud	2	369 Embro CA well nest
North Mitchell		
North Woodstock	1	180 Innerkip
Otter		
Oxbow		
Plover Mills	2	370 Fanshawe Sugar Bush; 437 Workshop
Pottersburg		
Reynolds	1	55 Mt. Elgin (just outside watershed)
River Bend	3	56 Komoka; 217 Sifton Bog; 470 Sifton Bog conductivity
Stoney		
Trout	1	076 Wildwood
Waubuno		
Whirl	1	219 North Mitchell
Wye		
Total	28	

NOTES:

PGMN: Provincial Groundwater Monitoring Network. A program of the Ministry of Environment, Conservation and Parks (MECP).

Source: UTRCA and MECP data.

Table 46. Groundwater Information

Watershed	Watershed Area (ha)	% of Watershed	
		HVA and SGRA	WHPA
Avon	16,790	8	5
Black	13,866	1	0
Cedar	9,515	41	47
Dingman	17,007	30	0
Dorchester	13,717	68	11
Fish	14,877	7	0
Flat	9,000	6	3
Forks	8,796	70	3
Fullarton	11,440	3	8
Gregory	5,917	20	0
Ingersoll	22,407	36	27
Komoka	2,145	84	0
Medway	20,492	9	0
Middle Thames	17,120	32	17
Mud	15,650	18	2
North Mitchell	17,368	3	0
North Woodstock	24,563	22	14
Otter	5,873	6	8
Oxbow	8,899	28	0
Plover Mills	11,934	18	13
Pottersburg	4,548	52	0
Reynolds	15,246	30	3
River Bend	5,828	75	5
Stoney	3,776	33	1
Trout	16,189	25	10
Waubuno	10,507	37	1
Whirl	13,019	1	1
Wye	5,574	19	6
TOTAL	342,063		
UT Average	12,217	24	8

NOTES:

HVA = Highly Vulnerable Aquifer, where there is a relatively fast pathway from the ground's surface down to an aquifer, generally making the aquifer more vulnerable to contamination.

SGRA = Significant Groundwater Recharge Areas, where a relatively large volume of water makes its way from the ground's surface down to the aquifer.

WHPA = Wellhead Protection Areas, the area surrounding a municipal wellhead through which contaminants are reasonably likely to move toward or reach the well.

There is overlap between HVA, SGRA, and WHPA areas.

Source: Data as per the Upper Thames River Source Protection Assessment Report, September 2015.

Table 47. Trees Planted by UTRCA and Private Landowners, 2016 to 2020

Watershed	Total (UTRCA + Landowner)		UTRCA Planted				Landowner Planted	
	# Sites	# Trees	# Sites	# Trees planted by Hand	# Trees planted by Machine	Total # Trees Planted	# Sites	# Trees
Avon	22	8,504	10	1,537	3,750	5,287	12	3,217
Black	11	3,663	4	232	2,790	3,022	7	641
Cedar	13	12,869	6	0	11,550	11,550	7	1,319
Dingman	12	3,316	3	292	1,600	1,892	9	1,424
Dorchester	20	4,149	4	211	1,900	2,111	16	2,038
Fish	21	4,397	9	2,003	1,375	3,378	12	1,019
Flat	8	11,649	4	104	11,282	11,386	4	263
Forks	4	935	2	300	350	650	2	285
Fullarton	15	8,439	7	345	6,950	7,295	8	1,144
Gregory	11	3,926	3	440	1,450	1,890	8	2,036
Ingersoll	27	21,717	12	4,667	14,900	19,567	15	2,150
Komoka	2	667	2	417	250	667	0	0
Medway	17	2,499	8	627	500	1,127	9	1,372
Middle Thames	19	11,326	12	390	10,150	10,540	7	786
Mud	15	7,961	8	2,280	4,025	6,305	7	1,656
North Mitchell	6	3,824	5	950	2,850	3,800	1	24
North Woodstock	20	6,233	7	502	3,565	4,067	13	2,166
Otter	12	4,117	6	479	2,800	3,279	6	838
Oxbow	19	6,539	8	551	4,000	4,551	11	1,988
Plover Mills	28	18,732	14	5,739	9,100	14,839	14	3,893
Pottersburg	0	0	0	0	0	0	0	0
Reynolds	11	5,797	2	356	900	1,256	9	4,541
River Bend	3	8,394	1	0	8,300	8,300	2	94
Stoney	1	250	0	0	0	0	1	250
Trout	19	21,819	10	11,481	8,550	20,031	9	1,788
Waubuno	14	4,179	4	431	3,050	3,481	10	698
Whirl	7	2,448	2	200	1,400	1,600	5	848
Wye	6	8,632	4	2,532	4,050	6,582	2	2,050
Total	363	196,981	157	37,066	121,387	158,453	206	38,528

NOTES:

Trees planted under the UTRCA Private Land Reforestation Program.

UTRCA Planted includes trees ordered and planted by the UTRCA on behalf of a landowner or on UTRCA lands or public lands. Often, grants are available through Trees Ontario, the Clean Water Program, and others. Landowner Planted includes trees ordered through the UTRCA but picked up and planted by the landowners.

Total Trees includes trees planted by the UTRCA and trees planted by private landowners.

Approximately 80% of the trees are planted by the UTRCA and 20% by private landowners.

Source: Data collected from UTRCA Forestry Database. See Table 48 for trees planted under the Communities For Nature Program.

Table 48. UTRCA Partnership Project Plantings, 2016 to 2020

Watershed	Plantings			Area and Sites		Volunteers	Examples of Sites and Volunteers
	Trees	Wildflowers and Grasses	Aquatic Plants	ha	Sites	Students, Community Members	
Avon	2,170	100	1,060	1	8	820	TJ Dolan, Stratford-Perth Museum, SERC
Black							
Cedar	3,436			1	2	472	Hodges Pond
Dingman	796			0	2	25	Westmount Park
Dorchester	2,095	1,580	500	1	9	717	Thames Centre Operations Centre, Dorchester Golf Course, Harris Trail, Recreation Complex, Dorchester CA, Mill Pond
Fish							
Flat							
Forks	6,942	2,995		4	15	5,267	St. Julien Park Earth Day, Trees for Woodfield, Glen Cairn, Coves, TD Tree Days, Greenway Park, LIDs
Fullarton	100			0	1	30	
Gregory							
Ingersoll	6,886	7,170	3,000	6	7	2,309	CAMI, Burgess Park, Beachville, Memorial, Ingersoll LID, John Lawson Park
Komoka		1,493		0	1	100	Komoka LID
Medway	8,607	100	1,100	3	13	2,937	Medway ESA, Weldon property, O'Shea property, Ilderton, 13 Mile Road, 11 Mile Road
Middle Thames	12			0	1		Memorial
Mud	176		660	0	3	2	Memorial, Grieve property
North Mitchell	250	1,400		0	3	100	Husky Flats, Mitchell Wetlands
North Woodstock	3,132	4,268	300	2	7	1,449	Memorial, Pittock, City of Woodstock, TD Tree Days
Otter							
Oxbow							
Plover Mills	2,647	1,826		7	12	1,812	Memorial, St. Marys Cement, Fanshawe LID, Pioneer Village, CADE tract 5.6 ha in seed
Pottersburg	830	seed		2	1	178	DANCOR
Reynolds							
River Bend	1,223			1	8	805	
Total	44,983	26,232	8,120	31	110	18,887	

Table 48. UTRCA Partnership Project Plantings, 2016 to 2020 (Continued)

Watershed	Plantings			Area and Sites		Volunteers	Examples of Sites and Volunteers
	Trees	Wildflowers and Grasses	Aquatic Plants	ha	Sites	Students, Community Members	
Stoney	819	2,200		1	4	460	SWM Pond, Schools in Stoney Creek, along creek
Trout	3,900	3,100		2	8	1,135	Wildwood CA, St. Marys Memorial, Stratford Scouts, TD Tree Days, Sparlings Bush
Waubuno		Seed		1	1		Seeded pollinator plants at 3M
Whirl	300			0	1	55	TD Tree Day
Wye	662		1,500	0	3	214	Memorial, Thorndale Com. Centre, SWM Pond
Total	44,983	26,232	8,120	31	110	18,887	

NOTES:

The UTRCA Partnership Projects include: (a) the Communities for Nature Program that targets naturalization projects on public and private land, and involves school children and community groups, and (b) the Memorial Tree Program that partners with funeral homes to plant trees in memory of loved ones.

The 2020 plantings were reduced due to the COVID-19 pandemic. Staff planted all trees for projects that were not canceled.

685 trees were also planted at Oneida Nation of the Thames with 175 Community members (Lower Thames Valley watershed).

Source: UTRCA data.

Table 49. Estimated Hectares of Trees Planted through UTRCA Programs, 2006 to 2020

Watershed	2006 to 2020			2011 to 2015			2016 to 2020		
	PLRP	PPP	Total	PLRP	PPP	Total	PLRP	PPP	Total
Avon	6.1	2.8	8.9	4.3	2.0	6.3	2.3	1.3	3.6
Black	6.1	0.0	6.1	1.9	2.0	3.9	3.3	0.0	3.3
Cedar	1.4	5.4	6.8	6.5	3.0	9.5	3.8	2.1	5.8
Dingman	9.3	7.0	16.3	1.7	1.0	2.7	1.3	0.5	1.8
Dorchester	1.3	1.0	2.3	2.1	5.0	7.1	5.3	1.3	6.6
Fish	2.3	0.0	2.3	2.2	0.0	2.2	4.7	0.0	4.7
Flat	3.3	0.0	3.3	5.9	0.0	5.9	1.8	0.0	1.8
Forks	0.4	10.0	10.4	0.5	7.0	7.5	0.1	4.2	4.3
Fullarton	13.0	0.0	13.0	4.3	0.0	4.3	2.5	0.1	2.6
Gregory	2.8	0.4	3.2	2.0	0.0	2.0	1.9	0.0	1.9
Ingersoll	19.4	4.4	23.8	11.0	7.0	18.0	6.9	0.0	6.9
Komoka	3.9	0.2	4.1	0.3	0.0	0.3	1.3	5.2	6.4
Medway	8.9	2.7	11.6	1.3	4.0	5.3	5.5	0.0	5.5
Middle Thames	11.8	0.1	11.9	5.7	0.0	5.7	7.5	0.1	7.6
Mud	2.4	0.1	2.5	4.0	0.0	4.0	2.3	0.1	2.5
North Mitchell	0.3	0.1	0.4	1.9	0.0	1.9	0.7	1.9	2.6
North Woodstock	5.6	6.3	11.9	3.2	2.0	5.2	6.5	0.0	6.5
Otter	2.0	0.0	2.0	2.1	0.0	2.1	1.3	0.0	1.3
Oxbow	3.9	2.4	6.3	3.3	1.0	4.3	2.1	1.6	3.7
Plover Mills	2.3	4.1	6.4	9.5	3.0	12.5	13.9	0.5	14.4
Pottersburg	0.0	0.2	0.2	0.0	0.0	0.0	0.4	0.0	0.4
Reynolds	1.1	0.2	1.3	2.9	0.0	2.9	3.5	0.7	4.2
River Bend	0.3	0.1	0.4	4.2	1.0	5.2	0.6	4.1	4.8
Stoney	0.0	2.3	2.3	0.1	1.0	1.1	0.0	0.5	0.5
Trout	3.4	2.1	5.5	11.0	3.0	14.0	12.2	2.3	14.5
Waubuno	6.6	0.0	6.6	2.1	3.0	5.1	1.0	0.0	1.0
Whirl	5.9	0.0	5.9	1.2	0.0	1.2	2.1	0.2	2.3
Wye	1.6	0.6	2.2	4.4	1.0	5.4	1.1	0.4	1.5
Total	125.4	52.0	177.4	99.6	46.0	145.6	96.2	27.0	123.1

Notes:

PLRP (Private Land Reforestation Program): Estimated hectares planted based on total number of trees planted by UTRCA divided by planting rate of 1482 trees/ha (600 trees/acre) x 75%. Approximately 75% of trees planted go into block plantings to become future forests. The other 25% are linear plantings such as windbreaks and narrow riparian plantings that are not wide enough to ever be counted as future forest cover.

PPP (Partnership Project Plantings): Projects include (a) the Communities for Nature Program that targets naturalization projects on public and private land, and involves school children and community groups, and (b) the Memorial Tree Program that partners with funeral homes to plant trees in memory of loved ones.

Total number of trees planted by UTRCA also includes trees ordered by landowners who self-planted.

Table 50. Clean Water Program Projects, 2016 to 2020

Watershed	Fragile Land Retirement / Reforestation	Erosion Control Measures	Wellhead Protection	Woodlands Enhancement	Decommissioning Unused Wells	Clean Water Diversions	Septic System Upgrades	Milk House / Parlour Washwater Treatment, Disposal	Fertilizer, Chemical and Fuel Storage or Handling	Wetlands Enhancement	Manure Storage	Hazardous Waste Facility Upgrade	Nutrient Management Plans	Livestock Access Restriction to Watercourse	Total 2016-2020	Total 2011-2015	Total 2006-2010	Total 2001-2005	Total 2001-2020
Avon	4	1													5	29	12	49	95
Black	2	2													4	12	11	31	58
Cedar	1		3				1								5	29	79	8	121
Dingman	3														3	10	19	29	61
Dorchester	5	2													7	13	43	23	86
Fish	11	5				1									17	21	6	17	61
Flat	1	1													2	12	4	9	27
Forks															0	3	2	3	8
Fullarton	9	1													10	29	7	36	82
Gregory	5	2	1	1		1		1							11	11	22	21	65
Ingersoll	11				1										12	28	42	47	129
Komoka	3														3	6	5	2	16
Medway	8	8	1												17	22	38	55	132
Middle Thames	6	3	4			1									14	34	51	38	137
Mud	7	2	1	2	1										13	49	26	76	164
North Mitchell	7														7	15	9	30	61
North Woodstock	10	1	1												12	23	37	60	132
Otter	1	1													2	14	9	15	40
Oxbow	7	1													8	15	13	24	60
Plover Mills	9		1		2										12	29	27	58	126
Pottersburg	1														1	1	6	17	25
Reynolds			2												2	20	16	26	64
River Bend	1														1	1	11	12	25
Stoney															0	4	7	5	16
Trout	8	6	1	2											17	38	25	52	132
Waubuno	5		1				1								7	17	24	41	89
Whirl	4	2													6	5	8	22	41
Wye	1	1													2	19	17	34	72
Totals	130	39	16	5	4	3	2	1	0	0	0	0	0	0	200	509	294	840	2125

NOTES:

The Clean Water Program (CWP) is a municipal partnership program that funds projects to improve water quality (surface water and groundwater) on farms and rural properties.

Funding for projects is also supported by the Habitat Stewardship Program, Ontario Power Generation, MacTavish Foundation, and others. The COVID-19 pandemic lowered uptake of these programs in 2020-2021.

Source: UTRCA data.