

Appendix A

Watershed Features

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Appendix A
Table 1a. Municipalities within each Subwatershed

Subwatershed	Municipalities in declining order of area --->						
Avon	Perth East (93)	Perth South (55)	Stratford (21)				
Black	Perth East (106)	West Perth (21)	Perth South (17)				
Cedar	Norwich (52)	SW Oxford (32)	Woodstock (13)	Blandford (<1)			
Dingman	London (131)	Tham Centre (32)	Mid. Centre (14)				
Dorchester	Tham Centre (100)	London (14)	Zorra (13)				
Fish	Perth South (92)	South Huron (30)	West Perth (19)	Luc-Bidd (16)			
Flat	West Perth (64)	Perth South (28)					
Forks	London (87)						
Glengowan	West Perth (81)	Perth South (38)					
Gregory	Thames Centre (32)	Zorra (32)	Perth South (<1)				
Komoka	Strath-Caradoc (12)	Mid. Centre (12)					
Medway	Mid. Centre (135)	Luc-Bidd (38)	London (20)	Tham Centre (13)			
Middle Thames	Zorra (172)						
Mud	Zorra (108)	E Zor.Tav. (44)					
N Mitchell	West Perth (163)	North Perth (6)	Perth East (3)	McKillop (2)	Grey (2)		
N Woodstock	E Zor.Tav. (149)	Blandford (49)	Perth East (43)	Woodstock (8)	Zorra (1)	Norwich (<1)	
Otter	Perth South (61)	St. Marys (<1)					
Oxbow	Mid. Centre (87)	London (2)					
Plover Mills	Perth South (45)	Tham Centre (41)	St. Marys (8)	London (7)	Mid. Centre (7)	Luc-Bidd (4)	Zorra (1)
Pottersburg	London (31)	Tham Centre (20)					
Reynolds	SW Oxford (102)	Tham Centre (52)	Thames Centre (4)	Norwich (2)			
River Bend	London (30)	Mid. Centre (17)	Strath-Caradoc (9)				
South Thames	SW Oxford (98)	Zorra (81)	E Zor.Tav. (27)	Ingersoll (10)	Woodstock (4)	Tham Centre (1)	
Stoney	Mid. Centre (20)	London (18)					
Trout	Zorra (77)	Perth South (53)	Perth East (26)	St. Marys (4)	E Zor.Tav. (<1)		
Waubuno	Tham Centre (50)	Zorra (48)	London (9)				
Whirl	Perth East (90)	West Perth (40)					
Wye	Tham Centre (52)	Zorra (<1)					

Notes:

The area of land in square kilometers in each municipality is shown in brackets ().

Short Forms: SW Oxford = Southwest Oxford; Mid. Centre = Middlesex Centre; E. Zor. Tav = East Zorra Tavistock; Luc-Bidd = Lucan Biddulph; Strath-Caradoc = Strathroy Caradoc; Tham Centre = Thames Centre

Source:

GIS derived using National Topographic Series maps

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Table 1b. Subwatersheds within each Municipality

Municipality	Subwatersheds within each Municipality in declining order of area ----->					
Blandford	N Woodstock (49)	Cedar (<1)				
East Zorra Tavistock	N Woodstock (149)	Mud Cr/N. Br. (44)	South Thames (27)	Trout (<1)		
Grey	N Mitchell (2)					
Ingersoll	S Thames (10)					
London	Dingman (131)	Forks (87)	Pottersburg (31)	River Bend (30)	Medway (20)	Stoney (18)
"	Dorchester (14)	Waubuno (9)	Plover Mills (7)	Oxbow (2)		
Lucan Biddulph	Medway (38)	Fish (16)	Plover Mills (4)			
McKillop	N Mitchell (2)					
Middlesex Centre	Medway (135)	Oxbow (87)	Stoney (20)	River Bend (17)	Dingman (17)	Komoka (12)
"	Plover Mills (7)					
North Perth	N Mitchell (6)					
Norwich	Cedar (52)	Reynolds (2)	N. Woodstock (<1)			
Perth East	Black (106)	Avon (93)	Whirl (90)	N Woodstock (43)	Trout (26)	N Mitchell (6)
Perth South	Fish (92)	Otter (61)	Plover Mills (45)	Avon (55)	Trout (53)	Glengowan (38)
"	Flat (28)	Black (17)	Gregory (<1)			
South Huron	Fish (30)					
St. Marys	Plover Mills (8)	Trout (4)	Otter (<1)			
Stratford	Avon (21)					
Strathroy-Caradoc	Komoka (12)	River Bend (9)				
SW Oxford	Reynolds (102)	S Thames (98)	Cedar (32)			
Thames Centre	Dorchester (100)	Wye (52)	Waubuno (50)	Reynolds (56)	Plover Mills (41)	Dingman (32)
"	Gregory (32)	Pottersburg (20)	Medway (13)	S Thames (1)		
West Perth	N Mitchell (163)	Glengowan (81)	Flat (64)	Whirl (40)	Black (21)	Fish (19)
Woodstock	Cedar (13)	N Woodstock (8)	S Thames (4)			
Zorra	Middle Thames (172)	Mud Cr (108)	S Thames (81)	Trout (77)	Waubuno (48)	Gregory (32)
"	Dorchester (13)	N Woodstock (1)	Plover Mills (1)	Wye (<1)		

Notes:

The area of land in square kilometers in each municipality is shown in brackets (). The " indicates the information continues onto the next line.

Short Forms: SW Oxford = Southwest Oxford; Mid. Centre = Middlesex Centre; E. Zor. Tav = East Zorra Tavistock; Luc Bidd = Lucan Biddulph

Source:

GIS derived using National Topographic Series maps.

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Table 1c. Subwatersheds within each County

Middlesex County	Oxford County	Perth County	Huron County
Dingman (180)	Cedar (97)	Avon (169)	Fish (30)
Dorchester (114)	Dorchester (13)	Black (144)	North Mitchell (4)
Fish (16)	Gregory (32)	Fish (111)	
Forks (87)	Middle Thames (172)	Flat (92)	
Gregory (32)	Mud (249)	Glengowan (119)	
Komoka (24)	North Woodstock (207)	Gregory (<1)	
Medway (206)	Plover Mills (1)	North Mitchell (177)	
Oxbow (89)	Reynolds (104)	North Woodstock (43)	
Plover Mills (59)	South Thames (220)	Otter (61)	
Pottersburg (51)	Trout (77)	Plover Mills (53)	
Reynolds (56)	Waubuno (48)	Trout (83)	
River Bend (56)	Wye (<1)	Whirl (130)	
SouthThames (1)			
Stoney (38)			
Waubuno (59)			
Wye (52)			

Figures in parenthesis () represent the area of the watershed within the county in square kilometers.

Table 1d. Municipalities within each County

Middlesex County	Oxford County	Perth County	Huron County
London	Blandford	North Perth	South Huron
Lucan Biddulph	East Zorra Tavistock	Perth East	Grey
Middlesex Centre	Ingersoll	Perth South	McKillop
Strathroy Caradoc	Norwich	St. Marys	
Thames Centre	Southwest Oxford	Stratford	
	Woodstock	West Perth	
	Zorra		

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Table 2. Watershed Areas

Subwatershed	Watershed Area {sq. km}	Percentage of Upper Thames Watershed	Area Lying Upstream {sq. km}
Avon	168.92	4.9	
Black	143.90	4.2	
Cedar	97.59	2.8	
Dingman	175.86	5.1	
Dorchester	126.89	3.7	1208.94
Fish	156.69	4.5	
Flat	91.29	2.6	
Forks	87.40	2.5	3015.88
Glengowan	119.69	3.5	618.44
Gregory	64.36	1.9	
Komoka	23.72	0.7	
Medway	206.24	6.0	
Middle Thames	172.10	5.0	152.01
Mud	152.01	4.4	
North Mitchell	175.64	5.1	
North Woodstock	249.89	7.2	
Otter	61.33	1.8	
Oxbow	88.82	2.6	
Plover Mills	111.65	3.2	1324.57
Pottersburg	50.44	1.5	
Reynolds	160.61	4.7	
River Bend	55.76	1.6	3391.68
South Thames	220.05	6.4	347.48
Stoney	37.59	1.1	
Trout	161.06	4.7	
Waubuno	106.25	3.1	
Whirl	129.98	3.8	
Wye	51.71	1.5	
Total	3447.44	100.0	

Notes:

Most subwatersheds represent the entire basin of a creek or tributary. The North, Middle and South Branches of the Thames are divided somewhat arbitrarily into sections for the purposes of this study. The water quality of these sections of the river are influenced by the land draining directly into them, but also the land upstream of the imaginary watershed divide.

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Table 3. Land Use

Subwatershed	% Agric	% Woods	% Urban	% Quarry	% Water
Avon	74.5	10.9	13.8	0.2	0.5
Black	82.8	15.5	1.2	0.3	0.3
Cedar	72.5	12.1	14.2	0.9	0.3
Dingman	63.8	14.3	21.3	0.4	0.2
Dorchester	67.7	21.1	8.9	1.2	1.1
Fish	91.1	8.3	0.2	0.3	0.1
Flat	89.8	9.8	0.1	0.1	0.2
Forks	4.3	12.9	77.7	3.1	2.0
Glengowan	87.4	9.7	2.4	0.0	0.5
Gregory	90.8	8.3	0.7	0.2	0.0
Komoka	65.2	20.5	9.7	4.0	0.6
Medway	82.8	10.8	5.8	0.2	0.4
Middle Thames	84.1	13.0	1.1	1.3	0.4
Mud Creek	86.9	12.4	0.5	0.1	0.1
North Mitchell	93.0	4.9	1.8	0.2	0.1
North Woodstock	80.1	13.0	5.7	0.1	1.1
Otter	88.3	10.0	0.5	1.0	0.1
Oxbow	83.7	15.3	0.8	0.2	0.0
Plover Mills	74.4	11.8	9.1	1.0	3.7
Pottersburg	39.9	6.9	53.2	0.0	0.0
Reynolds	87.1	11.8	0.5	0.3	0.3
River Bend	48.5	24.0	19.3	5.2	2.9
South Thames	77.2	10.8	10.1	1.3	0.6
Stoney	69.0	12.4	13.6	4.9	0.5
Trout	77.3	17.4	2.6	0.4	2.3
Waubuno	83.2	11.6	4.9	0.0	0.3
Whirl	92.0	6.8	1.2	0.0	0.0
Wye	88.8	8.6	1.2	1.3	0.1
Average	77.8	12.3	8.5	0.7	0.7

Source:

GIS derived using county land use maps from:
 Ontario Ministry of Agriculture, Food and Rural Affairs, Resources and
 Regulations Branch, Geographical Information Systems Unit.
 Agricultural Land Use Systems, 1:50,000, May 1983.

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Table 4. Soil Type

Percentage of Watershed Area in Each Soil Type

Subwatershed	Muck		Loamy			Very Fine	Fine		Silty				Not Mapped
	Bottom Land	and Organic	Coarse Sand	Fine Sand	Loamy Sand	Sandy Loam	Sandy Loam	Sandy Loam	Silt Loam	Clay Loam	Clay Loam		
Avon	7	4						1		78		10	1
Black	5	10								80		5	
Cedar		3						14	4	45		20	14
Dingman	8	1	5			6	1	1		15	44		20
Dorchester	6	7	10			17	6	15		16	12	2	9
Fish	7	1							10	18	8	56	
Flat	9								6	12		73	
Forks	1		3							1			95
Glengowan	8								2	50		39	1
Gregory	6	2	1					1		41	21	28	
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	
North Mitchell	3	2								1		93	
North 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			3	5			17	2	11	56
Reynolds	2	5	1				3	6	5	10	19	48	1
River Bend	15		13	9				5		21	6	6	25
South Thames	3	3						39	9	33		6	7
Stoney	9		16				4			36	1	13	22
Trout	7	4						10	3	42		33	2
Waubuno	6	1	5			4	3	5		58	2	13	5
Whirl	8									14		78	
Wye	10		12				1	1		43		33	1

Source:

The data were derived using Geographic Information Systems technology and the following digitized county soil maps:

Soil Map of Oxford County, Ontario

Soil Map of Perth County, Ontario

Soils Map of Middlesex County, Ontario

See Bibliography for full references.

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Table 5. Soil Erosion and Delivery

Percentage of Watershed Area in each Soil Loss Category

Subwatershed	Unclass	Low	Average	High
Avon	14.7	71.9	7.6	5.9
Black	3.2	85.5	5.9	5.4
Cedar	17.5	30.0	36.4	16.0
Dingman	27.7	56.5	10.7	5.1
Dorchester	12.8	66.8	7.9	12.5
Fish	0.8	87.2	6.3	5.7
Flat	0.6	83.1	6.3	10.0
Forks	95.2	3.8	0.7	0.3
Glengowan	3.1	78.7	4.7	13.4
Gregory	0.9	85.9	7.5	5.6
Komoka	28.1	65.6	1.9	4.3
Medway	7.8	83.1	3.9	5.3
Middle Thames	3.0	58.4	17.3	21.2
Mud	1.6	65.3	13.2	19.9
North Mitchell	4.9	93.8	0.6	0.6
North Woodstock	9.1	64.1	11.6	15.3
Otter	1.7	81.7	10.8	5.8
Oxbow	2.2	76.0	11.6	10.2
Plover Mills	17.4	68.7	3.1	10.8
Pottersburg	53.3	46.7	0.0	0.0
Reynolds	4.9	45.7	23.0	26.4
River Bend	31.1	56.0	6.5	6.4
South Thames	12.4	48.0	23.2	16.4
Stoney	19.7	70.3	5.2	4.8
Trout	7.3	68.5	7.8	16.4
Waubuno	6.2	82.9	5.4	5.5
Whirl	1.7	84.0	13.6	0.7
Wye	2.6	90.0	5.0	2.3
Average	14.0	67.8	9.2	9.0

Notes:

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

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

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

Unclass = unclassified lands (i.e. forested or urban lands)

Source:

Geomatics, Aug. 1991. "SW Ontario USLE GIS: A Manual to Accompany the GIS Database".

Appendix A

Table 6. Physiography

Percentage of watershed area under each physiographic unit

Subwatershed	Beaches,		Kame	Till	Sand	Clay	Till Plain		Peat	Spill	Water	
	Sh.cliffs	Eskers					Drumlins	Moraine				Moraine
Avon				6	4				75	3	12	1
Black					15				69	9	7	
Cedar			9		29			27			35	
Dingman	2				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
Glengowan					12				71		17	
Gregory		3			6				89		2	
Komoka					6	90					4	1
Medway					16				67		16	
Middle Thames		7					1	54	16		23	
Mud			1					75			24	
North Mitchell		1			8		3	37	46		5	
North Woodstock		2	3		7		13	44	16		15	
Otter									100			
Oxbow					40	6			27		27	
Plover Mills					1	2			61		33	4
Pottersburg						66			22		11	
Reynolds					41				16		43	
River Bend	1				13	22			22		40	3
South Thames			9		6		1	62			22	
Stoney					6				45		49	
Trout		6			7		1	14	54		16	1
Waubuno		9		4	1	18			45		22	
Whirl					17				83			
Wye					6	4			75		14	

Source:

GIS derived using digitized physiographic maps of Perth, Middlesex and Oxford counties (OMAF, 1950's).

Notes:

Sh.cliff = Shore cliffs Druml = Drumlinized Undrum = Undrumlinized

Appendix A
Table 7. Stream Flow

Station Location		Mean Discharge (cms)	Total Annual Discharge (dam3)	Drainage Area (sq. km)	Years of Record
Thames River					
	West London, Byron Station	39.1	1,210,000	3110	1922-1931; 1955-1998
South Thames River					
	Ealing (Egerton Street, London)	14.9	461,000	1340	1915-1998
	Ingersoll	5.9	180,000	518	1957-1998
	Woodstock	2.9	89,900	254	1952-1997
	Innerkip	1.9	59,500	149	1978-1998
	Tavistock	0.4	11,400	34	1987-1998
North Thames River					
	London, d/s of Fanshawe Dam	17.1	526,000	1450	1915-1997
	Thorndale (Plover Mills)	17.3	536,000	1340	1953-1998
	St. Marys	13.7	422,000	1080	1951-1998
	Mitchell	4.5	138,000	319	1553-1998
Middle Thames River					
	Thamesford	3.7	116,000	306	1945-1998
Tributaries					
	Avon River d/s of Stratford	2.1	64,300	144	1964-1998
	Cedar Creek, Woodstock	1.0	29,800	93	1951-1998
	Dingman Creek near Lambeth	1.5	45,700	146	1965-1998
	Fish Creek near Prospect Hill	1.9		150	1945-1994
	Medway Creek near London	2.6	80,200	200	1945-1956; 1970-1998
	Trout Creek u/s of St. Marys	1.9	59,600	140	1945-1990
	Trout Creek u/s of Fairview	0.6	17,800	36	1966-1997
	Waubuno Creek	1.2		108	1965-1998
	Wye Creek near Thorndale	0.5		39	1974-1990

Source:

Environment Canada, 1998. "HYDAT, Surface Water and Sediment Data", Atmospheric Environment Program.

Short Forms:

d/s = downstream u/s = upstream

cms = cubic metres per second dam3 = cubic decametres (1 dam3 = 1000 m3) sq. km = square kilometres

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Table 8a. Fishery Resources - Avon River to Komoka Creek

Watershed >	Avon	Black	Cedar	Dingman	Dor-	Fish	Flat	Forks	Glen-	Gregory	Komoka
Fish Species	River	Creek	Creek	Creek	chester	Creek	Creek		gowan	Creek	Creek
Alewife											
American Brook Lamprey											x
Black Bullhead	x	x			x						
Black Redhorse							x		x		
Blacknose Dace	x	x	x	x	x	x		x		x	x
Blacknose Shiner								x			
Blackside Darter	x	x				x	x	x	x	x	x
Bluegill											
Bluntnose Minnow	x	x	x	x	x	x	x	x	x	x	x
Brassy Minnow	x	x	x		x						
Brook Silverside											
Brook Stickleback	x	x	x	x	x	x	x	x		x	x
Brook Trout					x					x	
Brown Bullhead											
Brown Trout					x						x
Central Mudminnow	x	x	x	x	x						x
Central Stoneroller	x	x	x	x	x	x	x	x	x	x	x
Channel Catfish											x
Coho Salmon											x
Common Carp	x	x	x	x			x		x		
Common Shiner	x	x	x	x	x	x	x	x	x	x	x
Creek Chub	x	x	x	x	x	x	x	x		x	x
Eastern Sand Shiner											x
Emerald Shiner								x			x
Fantail Darter	x	x			x	x			x	x	
Fathead Minnow	x	x	x		x	x		x		x	
Freshwater Drum											
Gizzard Shad				x							
Golden Redhorse	x				x	x	x	x	x		
Golden Shiner	x					x					
Greater Redhorse						x					
Green Sunfish	x	x			x	x		x	x		
Greenside Darter	x	x	x	x	x	x	x	x	x		x
Hornyhead Chub	x	x				x	x		x	x	
Iowa Darter	x				x						x
Johnny Darter	x	x	x	x	x	x	x	x	x	x	x
Largemouth Bass	x				x				x	x	
Least Darter	x	x				x	x		x		
Logperch								x			
Longear Sunfish	x	x				x	x		x		
Longnose Dace	x							x			
Mimic Shiner					x	x	x	x	x		x
Mottled Sculpin											
Northern Brook Lamprey								x			
Northern Hog Sucker		x		x	x			x	x	x	
... continued											

Table 8a. Continued
(Fishery Resources - Avon River to Komoka Creek)

Fish Species	Avon River	Black Creek	Cedar Creek	Dingman Creek	Dorchester	Fish Creek	Flat Creek	Forks	Glen-gowan	Gregory Creek	Komoka Creek
Northern Pike						x					
Northern Redbelly Dace		x	x	x	x	x				x	x
Pearl Dace	x	x									x
Pugnose Minnow											
Pumpkinseed	x	x	x						x		x
Quillback											
Rainbow Darter	x				x	x	x	x	x		
Rainbow Trout	x										x
Redfin Shiner			x			x					
River Chub					x			x	x		
Rock Bass	x	x	x	x	x	x	x	x	x	x	x
Rosyface Shiner				x	x	x	x	x	x	x	
Shorthead Redhorse				x						x	
Silver Redhorse											
Silver Shiner					x	x		x	x		
Smallmouth Bass	x	x		x	x	x	x	x	x	x	
Spotfin Shiner				x		x		x			x
Spottail Shiner											
Stonecat	x	x		x	x			x	x	x	x
Striped Shiner	x	x		x	x	x	x	x	x	x	x
Walleye											
White Sucker	x	x	x	x	x	x	x	x	x	x	x
Yellow Bullhead											
Yellow Perch	x	x				x	x	x	x		
Total no. of species	34	29	17	21	31	31	22	30	28	22	27

Sources:

UTRCA and Fisheries and Oceans Canada, 2000. *Municipal Drain Classification Project Fisheries Survey.*

Royal Ontario Museum (ROM) Fish Sampling Data Base.

Notes:

x = species recorded in sampling conducted in this watershed

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Table 8b. Fishery Resources - Medway Creek to Reynolds Creek

	Medway Creek	Middle Thames	Mud Creek	North Mitchell*	North Woodstock	Otter Creek	Oxbow Creek	Plover Mills Corridor	Pottersburg Creek	Reynolds Creek
Alewife										
American Brook Lamprey		x								
Black Bullhead	x	x	x		x		x			
Black Redhorse	x							x		
Blacknose Dace	x	x	x		x		x	x	x	x
Blacknose Shiner		x								
Blackside Darter	x		x	x			x	x		x
Bluegill										
Bluntnose Minnow	x	x	x		x	x	x	x	x	x
Brassy Minnow	x						x			
Brook Silverside										
Brook Stickleback	x	x	x		x		x	x	x	x
Brook Trout		x	x							
Brown Bullhead					x					
Brown Trout							x			x
Central Mudminnow	x	x			x		x			x
Central Stoneroller	x	x	x			x	x	x	x	x
Channel Catfish										
Coho Salmon										
Common Carp	x	x	x		x			x		x
Common Shiner	x	x	x		x		x	x	x	x
Creek Chub	x	x	x		x	x	x	x	x	x
Eastern Sand Shiner										
Emerald Shiner		x								
Fantail Darter	x	x	x		x	x	x	x		
Fathead Minnow	x	x	x		x		x		x	x
Freshwater Drum										
Gizzard Shad										
Golden Redhorse	x							x		
Golden Shiner								x		
Greater Redhorse	x							x		
Green Sunfish								x		
Greenside Darter	x	x	x		x	x	x	x	x	x
Hornyhead Chub	x	x	x		x	x	x	x		
Iowa Darter					x	x		x		
Johnny Darter	x	x	x		x	x	x	x	x	x
Largemouth Bass		x	x		x		x	x		x
Least Darter	x	x	x		x		x			
Logperch										
Longear Sunfish	x	x			x	x		x		
Longnose Dace	x						x			
Mimic Shiner	x	x						x		
Mottled Sculpin										
Northern Brook Lamprey										
Northern Hog Sucker	x	x	x			x	x	x		
... continued										

Table 8b. Continued
(Fishery Resources - Medway Creek to Reynolds Creek)

	Medway Creek	Middle Thames	Mud Creek	North Mitchell*	North Woodstock	Otter Creek	Oxbow Creek	Plover Mills Corridor	Pottersburg Creek	Reynolds Creek
Northern Pike	x	x							x	
Northern Redbelly Dace	x	x	x			x	x		x	x
Pearl Dace							x			
Pugnose Minnow										
Pumpkinseed	x	x	x		x		x	x		x
Quillback								x		
Rainbow Darter	x	x								
Rainbow Trout										
Redfin Shiner	x	x								
River Chub	x	x					x			
Rock Bass	x	x	x			x	x	x		
Rosyface Shiner	x	x	x		x		x	x		
Shorthead Redhorse										
Silver Redhorse										
Silver Shiner	x							x		
Smallmouth Bass	x	x	x			x	x	x	x	
Spotfin Shiner	x						x	x		
Spottail Shiner										
Stonecat		x	x			x	x	x		
Striped Shiner	x	x	x		x		x	x	x	x
Walleye								x		
White Sucker	x	x	x		x	x	x	x	x	x
Yellow Bullhead										
Yellow Perch	x							x		
Total no. of species	38	35	26	1	22	15	31	34	14	18

Sources:

UTRCA and Fisheries and Oceans Canada, 2000. *Municipal Drain Classification Project Fisheries Survey.*

Royal Ontario Museum (ROM) Fish Sampling Data Base.

Notes:

x = species recorded in sampling conducted in this watershed * very little fish sampling has occurred here so information is incomplete

Appendix A

Table 8c. Fishery Resources - River Bend to Wye Creek

Fish Species	Watershed River Bend	South Thames	Stoney Creek	Trout Creek	Waubuno Creek	Whirl Creek	Wye Creek
Alewife	x						
American Brook Lamprey				x			
Black Bullhead		x		x			
Black Redhorse	x				x		
Blacknose Dace	x	x	x	x	x		x
Blacknose Shiner					x		
Blackside Darter	x	x		x	x		x
Bluegill	x	x		x			
Bluntnose Minnow	x	x	x	x	x	x	x
Brassy Minnow	x			x			
Brook Silverside	x						
Brook Stickleback	x	x	x	x	x		x
Brook Trout	x	x		x			
Brown Bullhead		x					
Brown Trout		x					
Central Mudminnow		x		x	x	x	
Central Stoneroller	x	x	x	x	x	x	x
Channel Catfish	x						
Coho Salmon							
Common Carp	x			x		x	
Common Shiner	x	x	x	x	x		x
Creek Chub	x	x	x	x	x	x	x
Eastern Sand Shiner	x						
Emerald Shiner	x						
Fantail Darter	x	x	x	x	x	x	x
Fathead Minnow	x	x	x	x	x		
Freshwater Drum	x						
Gizzard Shad	x						
Golden Redhorse	x	x			x	x	
Golden Shiner	x						
Greater Redhorse	x						
Green Sunfish	x						
Greenside Darter	x	x	x		x	x	x
Hornyhead Chub	x	x	x	x	x	x	
Iowa Darter	x						
Johnny Darter	x	x	x	x	x	x	x
Largemouth Bass		x		x			x
Least Darter	x		x		x	x	x
Logperch	x						
Longear Sunfish	x				x		
Longnose Dace	x						
Mimic Shiner	x				x		
Mottled Sculpin				x			
Northern Brook Lamprey				x			
Northern Hog Sucker	x	x	x		x	x	x

... continued

Table 8c. Continued
(Fishery Resources - River Bend to Wye Creek)

	River Bend	South Thames	Stoney Creek	Trout Creek	Waubuno Creek	Whirl Creek	Wye Creek
Northern Pike	x			x			
Northern Redbelly Dace	x	x	x	x			x
Pearl Dace	x			x			
Pugnose Minnow	x						
Pumpkinseed	x	x	x	x			x
Quillback	x						
Rainbow Darter	x						x
Rainbow Trout				x			
Redfin Shiner	x		x				
River Chub	x				x	x	
Rock Bass	x	x	x	x	x	x	
Rosyface Shiner	x	x	x		x		
Shorthead Redhorse	x						
Silver Redhorse	x						
Silver Shiner	x			x			
Smallmouth Bass	x	x	x	x	x	x	x
Spotfin Shiner	x		x				
Spottail Shiner	x						
Stonecat	x	x	x	x		x	
Striped Shiner	x	x	x	x	x	x	x
Walleye	x						
White Sucker	x	x	x	x	x	x	x
Yellow Bullhead	x					x	
Yellow Perch	x	x		x			
Total no. of species	58	30	23	33	26	19	19

Sources:

UTRCA and Fisheries and Oceans Canada, 2000. *Municipal Drain Classification Project Fisheries Survey*.
Royal Ontario Museum (ROM) Fish Sampling Data Base.

Notes:

x = species recorded in sampling conducted in this watershed

Appendix A

Table 9. Dams and Impoundments

Subwatershed	Total Number of Dams/Weirs	Number of Private Dams	Number of Public Dams	Names of Public Dams
Avon	4	2	2	Shakespear CA Dam, Thomas Orr Dam
Black	1	1	0	
Cedar	2	1	1	Hodge's Pond Dam
Dingman	4	3	1	Dingman CA Dam
Dorchester	4	2	2	Dorchester CA Dam, Mill Pond Dam
Fish	1	1	0	
Flat	1	1	0	
Forks	3	1	2	Springbank Dam, Fanshawe Dam
Glengowan	3	2	1	Fullarton CA Dam
Gregory	0	0	0	
Komoka	0	0	0	
Medway	9	9	0	
Middle Thames	2	2	0	
Mud	10	9	1	Embro CA Dam
North Mitchell	2	1	1	Mitchell CA Dam
North Woodstock	1	0	1	Pittock CA Dam
Otter	0	0	0	
Oxbow	1	1	0	
Plover Mills	4	3	1	Fanshawe CA Dam
Pottersburg	1	1	0	
Reynolds	1	1	0	
River Bend	5	5	0	
South Thames	8	7	1	Centreville CA Dam
Stoney	4	4	0	
Trout	12	10	2	Harrington CA Dam, Wildwood Dam
Waubuno	2	2	0	
Whirl	0	0	0	
Wye	0	0	0	
TOTAL	78	63	15	

Source:

UTRCA, 1991. *Dam Inventory and Reservoir Assessment*. Work completed by Irene Demakos and Geri Tramutalo. Supervised by Chris Tasker and Rick Goldt. (This report is not exhaustive, but it does provide a good estimate)

Notes:

Public Dams refers to those built, maintained or owned by the Conservation Authority or Municipality. Some information listed above has been updated by UTRCA staff.

Appendix A

Table 10. Sewage Treatment Plant Facilities

Subwatershed	Plant Discharging within Watershed*	Servicing Only**
Avon	Stratford WPCP	
Black		
Cedar		Woodstock WPCP
Dingman	Westminster PCP, Southland Park/Lambeth PCP	
Dorchester		Hamilton Road PCP
Fish		
Flat		
Forks	Adelaide PCP, Greenway PCC, Vauxhall PCP	
Glengowan	Mitchell WTP	
Gregory		
Komoka		Komoka WTP
Medway	Granton STP	Adelaide PCP, Greenway PCC
Middle Thames	Thamesford WTP	
Mud		
North Mitchell		Mitchell WTP
North Woodstock	Tavistock WTP	Woodstock WPCP
Otter		
Oxbow	Ilderton PCP	
Plover Mills	St. Marys WPCP	
Pottersburg	Pottersburg PCP	
Reynolds		
River Bend	Oxford PCP, Kilworth Heights WTP	
South Thames	Woodstock WPCP, Ingersoll WPCP	
Stoney		Adelaide PCP
Trout		St. Marys WPCP
Waubuno		Pottersburg PCP
Whirl		Mitchell WTP
Wye		

Notes:

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

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

In total, there are 19 sewage treatment plants in the Upper Thames River Watershed.

Short Forms:

WTP = Wastewater Treatment Plant PCP = Pollution Control Plant STP = Sewage Treatment Plant

WPCP = Water Pollution Control Plant PCC = Pollution Control Centre

Appendix A

Table 11. Woodlot Size Distribution

Percent of the Total Number of Woodlots in the Subwatershed

Subwatershed	V. Small <4 ha	Small 4-10 ha	Mod 10-30 ha	Large 30-40 ha	V. Large >40 ha
Avon	54.0	19.3	13.6	3.3	9.9
Black	44.3	18.4	13.2	2.6	21.5
Cedar	45.0	17.4	16.8	3.7	17.1
Dingman	58.3	20.4	11.4	1.6	8.4
Dorchester	46.1	14.4	19.7	2.2	17.5
Fish	38.6	30.1	21.7	0.3	9.3
Flat	28.3	23.9	35.8	1.9	10.1
Forks	65.6	20.2	7.7	2.3	4.2
Glengowan	57.0	16.4	16.6	1.7	8.3
Gregory	52.3	32.1	8.8	3.1	3.8
Komoka	42.1	23.6	14.1	3.6	16.6
Medway	45.3	22.8	22.1	4.4	5.5
Middle Thames	48.8	24.1	18.5	3.6	5.0
Mud	52.1	21.8	16.6	3.1	6.4
North Mitchell	57.1	28.3	12.7	0.0	2.0
North Woodstock	43.9	27.6	16.0	0.8	11.7
Otter	51.0	28.0	9.8	1.4	9.8
Oxbow	48.0	20.6	17.8	2.7	10.8
Plover Mills	47.6	17.1	23.7	4.5	7.0
Pottersburg	59.5	19.3	18.2	3.0	0.0
Reynolds	43.6	23.5	24.3	2.4	6.2
River Bend	67.2	7.4	8.6	1.5	15.3
South Thames	55.0	25.7	14.0	0.0	5.3
Stoney	47.7	21.6	25.0	0.0	5.7
Trout	45.0	18.3	16.0	4.5	16.3
Waubuno	48.0	21.4	22.4	2.1	6.2
Whirl	50.8	17.8	26.0	2.1	3.3
Wye	51.0	29.3	16.0	1.5	2.2
Average	49.8	21.8	17.4	2.3	8.8

Source:

GIS derived using National Topographic Series maps

Notes:

The figures were extrapolated mathematically and do not represent an actual count of woodlots.

Appendix A

Table 12. Riparian Forest Cover

Subwatershed	Area of Buffer Zone {sq. km}	Area of Forest inside Buffer Zone {sq. km}	% of Buffer that is Forested { % }
Avon	7.21	1.35	18.7
Black	6.52	1.16	17.9
Cedar	3.63	1.00	27.6
Dingman	9.89	3.03	30.6
Dorchester	9.95	3.43	34.5
Fish	6.92	1.56	22.5
Flat	3.82	0.67	17.4
Forks	4.03	1.74	43.2
Glengowan	6.04	1.54	25.4
Gregory	3.30	0.68	20.7
Komoka	1.75	0.45	25.6
Medway	8.44	2.05	24.3
Middle Thames	9.98	2.62	26.2
Mud	7.16	1.73	24.1
North Mitchell	7.87	0.53	6.7
North Woodstock	10.28	2.63	25.5
Otter	2.80	0.62	22.3
Oxbow	4.47	1.62	36.2
Plover Mills	7.90	2.04	25.9
Pottersburg	1.72	0.24	14.2
Reynolds	9.81	1.53	15.6
River Bend	4.12	1.70	41.2
South Thames	11.83	2.72	23.0
Stoney	2.19	0.48	21.8
Trout	8.23	2.83	34.4
Waubuno	4.85	1.24	25.7
Whirl	5.72	0.38	6.6
Wye	2.29	0.65	28.2
Watershed Avg	172.70	42.21	24.4
Source: GIS derived using National Topographic Series maps			
Notes: Buffer Zone is defined as the area of land that lies within 20 meters of every watercourse in the watershed. Both sides are included.			

Appendix A

Table 13. Species At Risk

Common Name	Scientific Name	Global GRANK	COSEWIC NPROT	MNR SPROT	MNR SRANK	Last Observ.	Source
Avon River							
Greenside Darter	<i>Etheostomoa blennioides</i>	G5	SC	NIAC	S4	2000	UTRCA/ROM
Black Creek							
Ruglose Grape Fern	<i>Botrychium rugulosum</i>	G3			S2	1990	NHIC
Red-shouldered Hawk	<i>Buteo lineatus</i>	G5	SC	VUL	S4B, SZN	1983	NHIC
Yellow-breasted Chat	<i>Icteria virens</i>	G5	SC	VUL	S2S3B, SZN	1981	NHIC
Greenside Darter	<i>Etheostomoa blennioides</i>	G5	SC	NIAC	S4	1980	NHIC
Cedar Creek							
Loggerhead Shrike	<i>Lanius ludovicianus</i>	G5	END	END	S2B, SZN	1984	NHIC
E. Hognose Snake	<i>Heterodon platirhinos</i>	G5	SC	VUL	S3	1985	NHIC
Greenside Darter	<i>Etheostomoa blennioides</i>	G5	SC	NIAC	S4	2000	UTRCA/ROM
Dingman Creek							
Broad Beech Fern	<i>Phegopteris hexagonoptera</i>	G5	SC		S3	1994	NHIC
American Chestnut	<i>Castanea dentata</i>	G4	THR		S3	1993	NHIC
False Hop Sedge	<i>Carex lupuliformis</i>	G3G4	END	THR	S1	1992	NHIC
Blue Ash	<i>Fraxinus quadrangulata</i>	G5	THR	VUL	S3	1993	NHIC
E. Spiny Softshell	<i>Apalone spinifera spinifera</i>	G55G	THR	THR	S3	1997	NHIC
Spotted Turtle	<i>Clemmys guttata</i>	G5	SC	VUL	S3	1992	NHIC
E. Hognose Snake	<i>Heterodon platirhinos</i>	G5	SC	VUL	S3	1989	NHIC
Greenside Darter	<i>Etheostomoa blennioides</i>	G5	SC	NIAC	S4	1989	NHIC
Dorchester							
White Cedar-Hemlock Wetland Fores	<i>Thuja occidentalis-Tsuga canadensis We</i>	G?			S3S4	1985	NHIC
Wood Poppy	<i>Stylophorum diphyllum</i>	G5	END	END	S1	1993	NHIC
E. Spiny Softshell	<i>Apalone spinifera spinifera</i>	G5T5	THR	THR	S3	1997	NHIC
Queen Snake	<i>Regina sptemvittata</i>	G5	THR	THR	S2	1990	NHIC
Spotted Turtle	<i>Clemmys guttata</i>	G5	SC	VUL	S3	1986	NHIC
Greenside Darter	<i>Etheostomoa blennioides</i>	G5	SC	NIAC	S4	1989	NHIC
Silver Shiner	<i>Notropis photogenis</i>	G5	SC	NIAC	S2S3B, SZN	1981	NHIC
Rayed Bean	<i>Villosa fabalis</i>	G1G2	END		S1	1997	NHIC
Fish Creek							
Spotted Turtle	<i>Clemmys guttata</i>	G5	SC	VUL	S3	1980	NHIC
Greenside Darter	<i>Etheostomoa blennioides</i>	G5	SC	NIAC	S4	1984	NHIC
Silver Shiner	<i>Notropis photogenis</i>	G5	SC	NIAC	S2S3	1984	NHIC
Redside Dace	<i>Clinostomous elongatus</i>	G4	SC	THR	S3	1980	NHIC
Flat Creek							
Black Redhorse	<i>Moxostoma duquesnei</i>	G5	THR	THR	S2	1997	UTRCA/ROM
Greenside Darter	<i>Etheostomoa blennioides</i>	G5	SC	NIAC	S4	1989	NHIC
Forks							
American Chestnut	<i>Castanea dentata</i>	G4	THR		S3	1985	NHIC
False Rue-anemone	<i>Enemion biternatum</i>	G5	SC		S2	1994	NHIC
Acadian Flycatcher	<i>Empidonax virescens</i>	G5	END		S2B, SZN	1986	NHIC
Peregrin Falcon	<i>Falco peregrinus anatum</i>	G4T3	THR	END	S2S3B, SZN	1997	NHIC
E. Spiny Softshell	<i>Apalone spinifera spinifera</i>	G5T5	THR	THR	S3	1997	NHIC
E. Hognose Snake	<i>Heterodon platirhinos</i>	G5	SC	VUL	S3	1989	NHIC
Queen Snake	<i>Regina sptemvittata</i>	G5	THR	THR	S2	1990	NHIC
Greenside Darter	<i>Etheostomoa blennioides</i>	G5	SC	NIAC	S4	1999	UTRCA/ROM
Silver Shiner	<i>Notropis photogenis</i>	G5	SC	NIAC	S2S3	1988	NHIC
Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	G4	END		S1	1997	NHIC
Rayed Bean	<i>Villosa fabalis</i>	G1G2	END		S1	1997	NHIC

Table 13. Continued (Species at Risk)

Table 13. Continued (Species at Risk)								
Glengowan Corridor								
	Black Tern	<i>Chlidonias niger</i>	G4	NAR	VUL	S3B,SZN	1987	NHIC
	Black Redhorse	<i>Moxostoma duquesnei</i>	G5	THR	THR	S2	2000	UTRCA/ROM
	Greenside Darter	<i>Etheostoma blennioides</i>	G5	SC	NIAC	S4	1980	NHIC
	Silver Shiner	<i>Notropis photogenis</i>	G5	SC	NIAC	S2S3	1980	UTRCA/ROM
Gregory Creek								
	Greenside Darter	<i>Etheostoma blennioides</i>	G5	SC	NIAC	S4	1999	UTRCA/ROM
Komoka Creek								
	Ram's-head Lady's Slipper	<i>Cypripedium arietinum</i>	G3			S3	1986?	NHIC
	Tuberous Indian-plantain	<i>Arnoglossum plantaginuem</i>	G4G5	SC		S3	1993	NHIC
	Louisiana Waterthrush	<i>Seiurus motacilla</i>	G5	SC	VUL	S3B,SZN	1990	NHIC
	Yellow-breasted Chat	<i>Icteria virens</i>	G5	SC	VUL	S2S3BSZN	1989	NHIC
	Hooded Warbler	<i>Wilsonia citrina</i>	G5	THR		S3B,SZN	1991	NHIC
	Greenside Darter	<i>Etheostoma blennioides</i>	G5	SC	NIAC	S4	1989	NHIC
Medway Creek								
	False Rue-anemone	<i>Enemion biternatum</i>	G5	SC		S2	1994	NHIC
	Handsome Sedge	<i>Carex formosa</i>	G4			S3S4	1987	NHIC
	Green Dragon	<i>Arisaema dracontium</i>	G5	SC		S3	1989	NHIC
	E. Hognose Snake	<i>Heterodon platirhinos</i>	G5	SC	VUL	S3	1981	NHIC
	Queen Snake	<i>Regina sptemvittata</i>	G5	THR	THR	S2	1990	NHIC
	Spotted Turtle	<i>Clemmys guttata</i>	G5	SC	VUL	S3	1980	NHIC
	E. Spiny Softshell	<i>Apalone spinifera spinifera</i>	G5T5	THR	THR	S3	1996	UTRCA
	Black Redhorse	<i>Moxostoma duquesnei</i>	G5	THR	THR	S2	2000	UTRCA/ROM
	Greenside Darter	<i>Etheostoma blennioides</i>	G5	SC	NIAC	S4	1999	UTRCA/ROM
	Silver Shiner	<i>Notropis photogenis</i>	G5	SC	NIAC	S2S3	1981	NHIC
Middle Thames								
	E. Spiny Softshell	<i>Apalone spinifera spinifera</i>	G5T5	THR	THR	S3	1997	NHIC
	Greenside Darter	<i>Etheostoma blennioides</i>	G5	SC	NIAC	S4	1993	NHIC
	Silver Shiner	<i>Notropis photogenis</i>	G5	SC	NIAC	S2S3	1981	NHIC
Mud Creek								
	Spotted Turtle	<i>Clemmys guttata</i>	G5	SC	VUL	S3	1992	NHIC
	Greenside Darter	<i>Etheostoma blennioides</i>	G5	SC	NIAC	S4	1999	UTRCA/ROM
North Mitchell								
	none known							
North Woodstock								
	Ram's-head Lady's Slipper	<i>Cypripedium arietinum</i>	G3			S3	1987?	NHIC
	E. Hognose Snake	<i>Heterodon platirhinos</i>	G5	SC	VUL	S3	1985	NHIC
	Greenside Darter	<i>Etheostoma blennioides</i>	G5	SC	NIAC	S4	1993	NHIC
Otter Creek								
	Greenside Darter	<i>Etheostoma blennioides</i>	G5	SC	NIAC	S4	2000	UTRCA/ROM
Oxbow Creek								
	Tallgrass/Sand Herbage	<i>Schizachrium scoparium-Sorga</i>	G3			S1	1993	NHIC
	Greenside Darter	<i>Etheostoma blennioides</i>	G5	SC	NIAC	S4	1993	NHIC
Plover Mills Corridor								
	Wood Poppy	<i>Stylophorum diphyllum</i>	G5	END	END	S1	1995	NHIC
	E. Spiny Softshell	<i>Apalone spinifera spinifera</i>	G5T5	THR	THR	S3	1997	NHIC
	Black Redhorse	<i>Moxostoma duquesnei</i>	G5	THR	THR	S2	1998	UTRCA/ROM
	Greenside Darter	<i>Etheostoma blennioides</i>	G5	SC	NIAC	S4	1988	NHIC
	Silver Shiner	<i>Notropis photogenis</i>	G5	SC	NIAC	S2S3	1988	NHIC
Pottersburg Creek								
	James' or Nebraska Sedge	<i>Carex jamesii</i>	G5			S3	1985	Paragon
	Acadian Flycatcher	<i>Empidonax virescens</i>	G5	END		S2B,SZN	1985	Paragon
	Greenside Darter	<i>Etheostoma blennioides</i>	G5	SC	NIAC	S4	1999	UTRCA/ROM

Table 13. Continued (Species at Risk)

Reynolds Creek								
	Least Bittern	<i>Ixobrychus exilis</i>	G5	SC	VUL	S3B,SZN	1990	NHIC
	Greenside Darter	<i>Etheostoma blennioides</i>	G5	SC	NIAC	S4	1999	UTRCA/ROM
River Bend								
	American Chestnut	<i>Castanea dentata</i>	G4	THR		S3	1983	NHIC
	Blue Ash	<i>Fraxinus quadrangulata</i>	G5	THR	VUL	S3	1994	NHIC
	Green Dragon	<i>Arisaema dracontium</i>	G5	SC		S3	1994	NHIC
	Schreberis Aster	<i>Aster schreberi</i>	G5			S1	1994	NHIC
	False Rue-anemone	<i>Enemion biternatum</i>	G5	SC		S2	1994	NHIC
	Prickly Bog-Sedge	<i>Carex atlantica</i>	G5			S1	1991	NHIC
	E. Spiny Softshell	<i>Apalone spinifera spinifera</i>	G5T5	THR	THR	S3	1997	NHIC
	E. Hognose Snake	<i>Heterodon platirhinos</i>	G5	SC	VUL	S3	1992	NHIC
	Queen Snake	<i>Regina septemvittata</i>	G5	THR	THR	S2	1990	NHIC
	Eastern Sand Darter	<i>Etheostoma pellucidum</i>	G3	THR		S2	1989	UTRCA/ROM
	Greenside Darter	<i>Etheostoma blennioides</i>	G5	SC	NIAC	S4	1993	NHIC
	Silver Shiner	<i>Notropis photogenis</i>	G5	SC	NIAC	S2S3	1989	NHIC
South Thames								
	Greenside Darter	<i>Etheostoma blennioides</i>	G5	SC	NIAC	S4	1993	NHIC
Stoney Creek								
	Greenside Darter	<i>Etheostoma blennioides</i>	G5	SC	NIAC	S4	2000	UTRCA/ROM
Trout Creek								
	Silver Shiner	<i>Notropis photogenis</i>	G5	SC	NIAC	S2S3	2000	UTRCA/ROM
Waubuno Creek								
	Tallgrass/Sand Herbace	<i>Schizachrium scoparium-Sorga</i>	G3			S1	1993	NHIC
	Black Redhorse	<i>Moxostoma duquesnei</i>	G5	THR	THR	S2	1986	UTRCA/ROM
	Greenside Darter	<i>Etheostoma blennioides</i>	G5	SC	NIAC	S4	1999	UTRCA/ROM
Whirl Creek								
	Willow Aster	<i>Aster praealtus</i>	G5	SC	VUL	S2	1983	NHIC
	Greenside Darter	<i>Etheostoma blennioides</i>	G5	SC	NIAC	S4	2000	UTRCA/ROM
Wye Creek								
	Greenside Darter	<i>Etheostoma blennioides</i>	G5	SC	NIAC	S4	1982	NHIC

Sources:

NHIC = Natural Heritage Information Centre, Peterborough (a division of the Ontario Ministry of Natural Resources).
 UTRCA/ROM = Upper Thames River Conservation Authority and Royal Ontario Museum, Fish Sampling Records.
 Paragon = Paragon Engineering Ltd., 1995. *Pottersburg Creek and Crumlin Drain Subwatershed Study, Main Report*. Field work by Dr. J. Bowles.

Notes:

This table includes extremely rare to uncommon species (S1-S3) in Ontario and common species (S4) with special concern. Only species observed or verified in the last 20 years (1980 to 2000) are included.

NPROT = official designation by COSEWIC (Committee on the Status of Endangered Wildlife In Canada)
 SPROT = official designation by COSSARO (Committee On the Status of Species At Risk in Ontario)
 GRANK = Global Rank SRANK = NHIC rank for Ontario Last Obs = Last Observation date
 G1/S1 = Extremely rare G2/S2 = Very rare G3/S3 = Rare to uncommon G4/S4 = Common G5/S5 = Very common GT = applies to subspecies
 END = Endangered THR = Threatened VUL = Vulnerable NAR = Not At Risk NIAC = Not In Any COSSARO category
 SC = Special Concern (formerly Vulnerable) SZN = Not of practical conservation concern (e.g. migrants) S4B = Breeding habitat ranking
 For a more complete description of rankings and status, see the NHIC website at www.mnr.gov.on.ca/MNR/nhic/nhic.html

Appendix A
Table 14. Significant Natural Areas and Wetlands

Site Name	Designations	Wetland Code	Size (ha)	Source
Avon River				
Gads Hill South Swamp	Class 2 Wetland	NE5Aa	129	MNR and UTRCA
Little Lakes Swamp Complex	Class 3 Wetland; ESA	NE4D	135	MNR and UTRCA; Hoffman 1981
Shakespeare Hills/Avon Banks	Class 5 Wetland	NE6Ac	77	MNR and UTRCA
Stratford Wetland Complex	Class 6 Wetland	DO5D	186	MNR and UTRCA
Avonbank Woods	Prelim ESA		70	Hoffman 1981
Black Creek				
Ellice Swamp	Class 2 Wetland	EL13A	866	MNR and UTRCA
Gads Hill South Swamp and Agreement Forest	Class 2 Wetland; ESA	NE5Aa	405	MNR and UTRCA
Gads Hill North Swamp	Class 4 Wetland	NE5AB	26	MNR and UTRCA
Sebringville Woods	Class 6 Wetland, ESA	DO12E	90	MNR and UTRCA; Hoffman 1981
Carlingford Spillway	Earth Science ANSI			MNR
Seebach Hill Spillway	Earth Science ANSI			MNR
Warburg Road Cut	Earth Science ANSI			MNR
Cedar Creek				
Cedar Creek/Sweaburg Swamp	Class 1 Wetland; SNA	NO5A	184	MNR and UTRCA; Hilts 1976
Brick Ponds Wetlands Complex	Class 2 Wetland	WC1C	32	MNR and UTRCA
Oxford Centre Swamp	Class 3 Wetland; SNA	NO6B, NO7E	96	MNR and UTRCA; Hilts 1976
NO3B "Jack Griffin's Wetland"	Class 6 Wetland	NO3B	38	MNR and UTRCA
Cedar Creek Source Complex	Class 6 Wetland	SW24E	21	MNR and UTRCA
TRT5	Class 7 Wetland	TRT5	25	MNR and UTRCA
Trillium Woods	Provincial Nature Reserve		10	MNR 1984
Dingman Creek				
Dingman Cr / N. Dorchester Wetland Complex	Class 1 Wetland	ND15A	118	MNR and UTRCA
Regina Mundi Kirk-Cousins Wetland	Class 2 Wetland	WE9A	15	MNR and UTRCA
Westminster Wetland or Tenants Pond	Class 3 Wetland	WE10A	110	MNR and UTRCA; City of London 1996
Hearns Wetland	Class 3 Wetland	ND14C	5	MNR and UTRCA
Dingman Wetland and Fen	Class 3 Wetland	LO013	10	MNR and UTRCA
Elliot Laidlaw - Westminster Complex	Class 7 Wetland; Pot. ESA; SNA	WE18	152	MNR and UTRCA; C of London 1996; Hilts and
Delaware East Woodlot + Delaware Woodlot #11	SNA		178	Hilts and Cook 1982
Delaware Northeast Woodlot	SNA		89	Hilts and Cook 1982
East Lambeth - Talbot Road Corridor Extension	ESA		153	City of London 1996
East Lambeth Forest (ESA 10088)	ESA		15	City of London 1996
Foster Ponds	SNA		41	Hilts and Cook 1982
Silver Swamp ESA	Potential ESA		27	City of London 1996
Lower Dingman Corridor	Potential ESA		775	City of London 1996
Mud Lakes	Candidate Nature Reserve		73	MNR 1984
Kilworth - Lake Maumee II and II	Earth Science ANSI			MNR
Kilworth Shoreline	Earth Science ANSI			MNR
Dorchester				
Dorchester Swamp	Class 1 Wetland; Car Can; ANSI; SNA	ND11A	500	MNR and UTRCA; Hilts and Cook 1982
Putnam Track Swamp	Class 1 Wetland	Nd29A	130	MNR and UTRCA
Meadowlily Woods ESA	Class 3 Wetland; ESA; SNA	WE17A	300	City of London 1996; Hilts and Cook 1982
North Dorchester Swamp	Class 3 Wetland	ND6A	275	MNR and UTRCA
WN2D "Banner Swamp"	Class 6 Wetland	WN2D	7	MNR and UTRCA
ND32E or West Dorchester Wetland	Class 7 Wetland	ND32E	15	MNR and UTRCA
Thamesford Woodlot	SNA		121	Hilts and Cook 1982

Table 14. Continued

(Significant Natural Areas and Wetlands - Fish Creek to Mud Creek)

Fish Creek					
	Kikton-Woodham	Earth Science ANSI			MNR
	Lucan Moraine	Earth Science ANSI			MNR
Flat Creek					
	McGrath Swamp	Class 6 Wetland	HI184	48	MNR and UTRCA
	Staffa Kame Complex	Earth Science ANSI			MNR
	North Thames Valley (Milverton + Mitchell Moraine)	Earth Science ANSI			MNR
Forks of the Thames					
	Westminster Ponds - Pond Mills ESA (part of)	Class 1 Wetland, ESA	LC3A LC5D WE14D	300	MNR and UTRCA; City of London 1996
	Arva Moraine Wetlands Complex	Class 3 Wetland		64	MNR and UTRCA
	Highbury Wetland	Class 7 Wetland		2	MNR and UTRCA
	Kilally Forest ESA	ESA		176	City of London 1996
	The Coves	ESA		43	City of London 1996
Glengowan					
	Motherwell Blue Heron Swamp	Class 6 Wetland	FU2D, FU14D	10	MNR and UTRCA
	Fullarton Area	Earth Science ANSI			MNR
	North Thames Valley	Earth Science ANSI			MNR
Gregory Creek					
	Wetland Southwest of Uniondale	Class 2 Wetland	ZO34BE	4	MNR and UTRCA
	DeBoer Wetlands	Class 2 Wetland	ZO34BH	23	MNR and UTRCA
	St. Ives Floodplain	SNA		81	Hilts and Cook 1982
Komoka Creek					
	Komoka Creek Swamp + Campbellville Swamp Complex	Class 1 Wetland	LB2A	75	MNR and UTRCA
	Komoka Bluff	SNA		34	Hilts and Cook 1982
	Camp Kee-Mo-Kee	SNA		22	Hilts and Cook 1982
	Komoka Shoreline	Earth Science ANSI			MNR
Medway Creek					
	Arva Moraine Wetlands Complex	Class 3 Wetland		64	MNR and UTRCA
	Elginfield Swamp	Class 6 Wetland	LD52A	2	MNR and UTRCA
	Maple Grove Swamp	Class 7 Wetland	LD33D	17	MNR and UTRCA
	WN18D "West Nissouri Wetland"	Class 7 Wetland	WN18D	6	MNR and UTRCA
	Arva ESA or ESA 03040	Potential ESA		76	City of London 1996
	DeVizes Woodlot	SNA		41	Hilts and Cook 1982
	Medway Valley Heritage Forest	ESA		300	City of London 1996
	Elginfield Area Moraine	Earth Science ANSI			MNR
Middle Thames					
	Unopened 12th Woodlots	Class 2 Wetland; Can. Nat. Res.;SNA	ZO37C	21	MNR and UTRCA; Hilts 1976; MNR 1984
	Lakeside Dump Swamp	Class 2 Wetland	ZO34CA	33	MNR and UTRCA
	Medina Bush	Class 2 Wetland	ZO26B	32	MNR and UTRCA
	ZO10D "Great Blue Heronry"	Class 2 Wetland; WWC	ZO10D	11	MNR and UTRCA
	Kintore Swamp	Class 4 Wetland; WWC	ZO28A	157	MNR and UTRCA
	Banner Swamp	Class 7 Wetland	ZO48B	10	MNR and UTRCA
	Thamesford Meltwater Channel	Earth Science ANSI			MNR
Mud Creek					
	Matheson's Bush	Class 2 Wetland	ZO33B	7	MNR and UTRCA
	Mud Creek Banks	Class 4 Wetland	ZT24A	50	MNR and UTRCA
	Youngsville Forest	Class 7 Wetland;SNA	ZO31B	21	Hilts 1976; UTRCA
	Mud Creek Meltwater Channel	Earth Science ANSI			MNR
	Brooksdae Glacial Complex	Earth Science ANSI			MNR

Table 14. Continued
(Significant Natural Areas and Wetlands - N Mitchell to River Bend)

North Mitchell

Kuhrville Complex	Class 6 Wetland	EL5D	89	MNR and UTRCA
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North Woodstock

Pittock Reservoir	Class 1 Wetland	BB7C, ZT1C		MNR and UTRCA
Trotters Lake/ Vansittart Woods Complex	Class 1 Wetland	BB5A, BB6B	29	MNR and UTRCA
Zorra Swamp	Class 5 Wetland; SNA;	ZT23A	85	MNR and UTRCA; Hilts 1976
Eastwood Wetland	Class 6 Wetland	BB1C, NO8D	7	MNR and UTRCA
Wetland ZT26B	Class 7 Wetland	ZT26B	4	MNR and UTRCA
Wetland BB2D	Class 7 Wetland	BB2D	7	MNR and UTRCA
County Forest	SNA			Hilts 1976
Fowlers Pond	SNA			Hilts, 1976
Maple Woodlot	SNA			Hilts 1976
Thames River Valley	SNA			Hilts 1976
Innerkip Quarry	Earth Science ANSI			MNR

Otter Creek

Conroy Woods	Class 3 Wetland, ESA	DO13D DO9B	120	MNR and UTRCA; Hilts 1981
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Oxbow Creek

LD50B "Oxbow Creek Wetland"	Class 6 Wetland	LD50B	14	MNR and UTRCA
Springers Creek Woodlot	SNA		61	Hilts and Cook 1982
Elginfield Area Moraine				MNR

Plover Mills Corridor

Thorndale River Valley	SNA		162	Hilts and Cook 1982
Rannock Road Cut	Earth Science ANSI			MNR

Pottersburg Cr

Airport Wetland	Class 7 Wetland	WD11D	5	MNR and UTRCA
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Reynolds Creek

Five Point Woods	Class 1 Wetland	SW7A SW5C SW8C	160	MNR and UTRCA
Dereham Wetlands	Class 1 Wetland	SW29e	5	MNR and UTRCA
Mud Lake and Area	Class 2 Wetland, SNA	SW13B	81	MNR and UTRCA; Hilts 1976
ND17E	Class 3 Wetland	ND17E	8	MNR and UTRCA
SW14C	Class 3 Wetland	SW14C	18	MNR and UTRCA
Verschoyle Wetland	Class 6 Wetland	SW16D	17	MNR and UTRCA
Northwest Crampton Wetland	Class 7 Wetland	ND27B ND28C	18	MNR and UTRCA
Salford Woods	SNA			Hilts 1976

River Bend

Komoka Creek Swamp + Campbellville Swamp Complex	Class 1 Wetland	LB2A	74	MNR and UTRCA
Sifton Bog	Class 2 Wetland, ESA	LC2A	28	MNR and UTRCA; City of London 1996; Hilts &
Komoka Park Reserve or Kilworth ESA	Class 6 Wetland, ANSI, PP	DE4B, DE5B	200	MNR and UTRCA; City of London 1996; MNR
Kilworth Tuffa Deposits	SNA		5	Hilts and Cook 1982
Kilworth Bluff	SNA		16	Hilts and Cook 1982
Komoka Bridge Woodlot	SNA		47	Hilts and Cook 1982
Kains Woods ESA	ESA; SNA		500	City of London 1996; Hilts and Cook 1982
Warbler Woods	ESA; ANSI; SNA		63	City of London 1996; ; Hilts and Cook 1982
Hyde Park ESA	Potential ESA		29	City of London 1996
Kilworth - Lake Maumee II and II	Earth Science ANSI			MNR

Table 14. Continued
 (Significant Natural Areas and Wetlands - S Thames to Wye Creek)

South Thames					
	Five Point Woods	Class 1 Wetland, SNA	SW7A SW5C SW8C	161	MNR and UTRCA; Hilts 1976
	Golspie Swamp	Class 2 Wetland	ZO44A	296	MNR and UTRCA
	Foldens Swamp Complex	Class 4 Wetland	SW25B SW23D	108	MNR and UTRCA; Hilts 1976
	Rayside Swamp	Class 6 Wetland	ZO47	18	MNR and UTRCA
	Heslop Swamp	Class 7 Wetland	SW11B SW12D	19	MNR and UTRCA
	Ingersoll Wetland	Class 7 Wetland	SW10C	9	MNR and UTRCA
	Stelco Quarry	Earth Science ANSI			MNR
Stoney Creek					
	Arva Moraine Wetlands Complex	Class 3 Wetland		64	MNR and UTRCA
	Fanshawe Wetlands ESA, Fanshawe Complex	Class 3 Wetland; ESA	LD53A	133	MNR and UTRCA; City of London 1996
	Ballymote Wetland	Class 7 Wetland	LD51B	7	MNR and UTRCA
Trout Creek					
	Wildwood Lake Wetland	Class 1 Wetland; CA; IBA	ZO38c	1257	MNR and UTRCA
	Trout Creek Swamp or Wetland	Class 2 Wetland	ZO39B DO10B	34	MNR and UTRCA
	ZO34cbc	Class 2 Wetland	ZO34cbc	51	MNR and UTRCA
	ZO34cfg	Class 2 Wetland	ZO34cfg	80	MNR and UTRCA
	ZO34Bd	Class 2 Wetland	ZO34Bd	15	MNR and UTRCA
	Brooksdale Forest	Class 2 Wetland; SNA	ZO32B	42	MNR and UTRCA; Hilts 1976
	Trout Creek Floodplain	ESA		75	Hoffman 1981
	Fairview Woods	ESA		70	Hoffman 1981
	Trout Creek Valley	SNA			Hilts 1976
	Shagbark Hickory Woods	ESA		48	Hoffman 1981
	Happy Hills	SNA			Hilts 1976
	Lost Concession	SNA			Hilts 1976
	Harmony Woods	ESA		37	Hoffman 1981
	Harmony Cut	Earth Science ANSI			MNR
	Wildwood Silts	Earth Science ANSI			MNR
	St. Marys Cement Co., South Quarry	Earth Science ANSI			MNR
Waubuno Creek					
	Lakeside/Sunova Area Dump	Class 2 Wetland	ZO34ca	35	MNR and UTRCA
	Wetland Southwest of Uniondale	Class 4 Wetland	ZO34BE	34	MNR and UTRCA
	Medina Bush	Class 6 Wetland; SNA	ZO26b	32	MNR and UTRCA; Hilts 1976
	WN2D	Class 7 Wetland	WN2D	7	MNR and UTRCA
	Cobble Hills	SNA		70	Hilts 1976
Whirl Creek					
	Whirl Creek Woods	Class 5 Wetland	FU20E	34	MNR and UTRCA
	Brunner Complex	Class 6 Wetland	MO175	32	MNR and UTRCA
	Seabach Hill Woods	Class 7 Wetland; ESA	EL11D	12	MNR and UTRCA; Hoffman 1981
	Seabach Hill Spillway	Earth Science ANSI			MNR
Wye Creek					
	Belton Swamp	Class 7 Wetland	WN10D	4	MNR and UTRCA
	Wyton Station Woods	SNA		65	Hilts and Cook 1982

Table 14. Continued

(Significant Natural Areas and Wetlands)

Sources:

MNR and UTRCA = Wetland Files are available from the Ontario Ministry of Natural Resources and Upper Thames River Conservation Authority.
 MNR = Earth Science and Life Science ANSI (Areas of Natural and Scientific Interest) files are available from the MNR.
 City of London, 1996. Candidate Environmentally Significant Areas and Subwatershed Features. Map.
 Hilts, S. (Ed.), 1976. Natural Areas in Oxford County: A Preliminary Survey.
 Hoffman, D (Ed.), 1981. Perth County: Preliminary Environmentally Sensitive Areas Survey.
 Hilts, S and F. Cook (Eds.), 1982: Significant Natural Areas of Middlesex County.
 IBA = Important Bird Areas. A program of Bird Studies Canada, Canadian Nature Federation, Birdlife International. www.ibacanada.com
 Full references are given in the Bibliography.

Short Forms:

ESA - Environmentally Sensitive Area	SNA - Significant Natural Area	CA - Conservation Area	Car Can - Carolinian Canada Site
PP - Provincial Park	UTRCA - Upper Thames River Conservation Authority	WWC - Wildwood Wetland Complex	
MNR - Ministry of Natural Resources	Can. Nat. Res. - Candidate Nature Reserve	IBA - Important Bird Area	

Notes:

Size of site is approximate only.

Appendix A**Table 15. Spills (1988-2000)**

Subwatershed	No. of Spills Reported
Avon	45
Black	6
Cedar	11
Dingman	27
Dorchester	5
Fish	6
Flat	1
Forks	113
Glengowan	6
Gregory	1
Komoka	0
Medway	4
Middle Thames	10
Mud Cr.	5
North Mitchell	16
North Woodstock	24
Otter	4
Oxbow	1
Plover Mills	8
Pottersburg	55
Reynolds	4
River Bend	3
South Thames	19
Stoney	4
Trout	6
Waubuno	0
Whirl	6
Wye	2
Total	392
Average	14

Source:

Ministry of the Environment, Spills Action Centre. The number represents the total number of municipal, industrial and agricultural spills recorded over 12 years from 1988 to 2000.