SE Lake Ontario Table 1. Multi-Resolution Land Classification (MRLC) land cover classifications and corresponding percent cover in the SE Lake Ontario Basin.

Classification	% Cover
Deciduous Forest	34.17
Row Crops	24.38
Pasture/Hay	15.53
Mixed Forest	11.01
Water	5.01
Wooded Wetlands	3.17
Low Intensity Residential	2.57
Evergreen Forest	1.32
Parks, Lawns, Golf Courses	1.07
High Intensity Commercial/Industrial	0.79
High Intensity Residential	0.60
Emergent Wetlands	0.24
Barren; Quarries, Strip Mines, Gravel Pits	0.11

SE Lake Ontario Table 2. Species of Greatest Conservation Need currently occurring in the SE Lake Ontario Basin (n=129). Species are sorted alphabetically by taxonomic group and species common name. The Species Group designation is included, indicating which Species Group Report in the appendix will contain the full information about the species. The Stability of this basin's population is also indicated for each species.

TaxaGroup	SpeciesGroup	Species	Stability
Bird	Bald Eagle	Bald eagle	Increasing
Bird	Beach and Island ground-nesting birds	Common tern	Unknown
Bird	Breeding waterfowl	Blue-winged teal	Decreasing
Bird	Breeding waterfowl	Ruddy duck	Increasing
Bird	Colonial-nesting herons	Black-crowned night-heron	Decreasing
Bird	Common loon	Common loon	Unknown
Bird	Common nighthawk	Common nighthawk	Decreasing
Bird	Deciduous/mixed forest breeding birds	Black-throated blue warbler	Stable
Bird	Deciduous/mixed forest breeding birds	Cerulean warbler	Increasing
Bird	Deciduous/mixed forest breeding birds	Kentucky warbler	Unknown
Bird	Deciduous/mixed forest breeding birds	Louisiana waterthrush	Unknown
Bird	Deciduous/mixed forest breeding birds	Prothonotary warbler	Unknown
Bird	Deciduous/mixed forest breeding birds	Red-headed woodpecker	Decreasing
Bird	Deciduous/mixed forest breeding birds	Scarlet tanager	Decreasing
Bird	Deciduous/mixed forest breeding birds	Wood thrush	Decreasing
Bird	Early successional forest/shrubland birds	American woodcock	Decreasing
Bird	Early successional forest/shrubland birds	Black-billed cuckoo	Decreasing
Bird	Early successional forest/shrubland birds	Blue-winged warbler	Decreasing
Bird	Early successional forest/shrubland birds	Brown thrasher	Decreasing
Bird	Early successional forest/shrubland birds	Canada warbler	Decreasing
Bird	Early successional forest/shrubland birds	Golden-winged warbler	Decreasing
Bird	Early successional forest/shrubland birds	Prairie warbler	Increasing
Bird	Early successional forest/shrubland birds	Ruffed grouse	Decreasing
Bird	Early successional forest/shrubland birds	Whip-poor-will	Decreasing
Bird	Early successional forest/shrubland birds	Willow flycatcher	Decreasing
Bird	Early successional forest/shrubland birds	Yellow-breasted chat	Unknown
Bird	Forest breeding raptors	Cooper's hawk	Increasing
Bird	Forest breeding raptors	Golden eagle	Unknown
Bird	Forest breeding raptors	Long-eared owl	Unknown
Bird	Forest breeding raptors	Northern goshawk	Increasing
Bird	Forest breeding raptors	Red-shouldered hawk	Decreasing
Bird	Forest breeding raptors	Sharp-shinned hawk	Increasing
Bird	Freshwater marsh nesting birds	American bittern	Decreasing
Bird	Freshwater marsh nesting birds	Black tern	Decreasing
Bird	Freshwater marsh nesting birds	King rail	Decreasing
Bird	Freshwater marsh nesting birds	Least bittern	Stable
Bird	Freshwater marsh nesting birds	Pied-billed grebe	Decreasing
Bird	Freshwater marsh nesting birds	Yellow rail	Unknown
Bird	Grassland birds	Bobolink	Decreasing
Bird	Grassland birds	Eastern meadowlark	Decreasing
Bird	Grassland birds	Grasshopper sparrow	Decreasing
Bird	Grassland birds	Henslow's sparrow	Decreasing
Bird	Grassland birds	Horned lark	Decreasing
Bird	Grassland birds	Northern harrier	Unknown
Bird	Grassland birds	Sedge wren	Unknown
Bird	Grassland birds	Short-eared owl	Unknown
Bird	Grassland birds	Upland sandpiper	Decreasing
Bird	Grassland birds	Vesper sparrow	Decreasing
Bird	Osprey	Osprey	Increasing
Bird	Peregrine falcon	Peregrine falcon	Increasing
Bird	Transient shorebirds	Black-bellied plover	Unknown
Bird	Transient shorebirds	Buff-breasted sandpiper	Unknown
Bird	Transient shorebirds	Dunlin	Unknown
Bird	Transient shorebirds	Greater yellowlegs	Unknown
Bird	Transient shorebirds	Hudsonian godwit	Unknown
Bird	Transient shorebirds	Ruddy turnstone	Unknown
Bird	Transient shorebirds	Sanderling	Unknown
Bird	Transient shorebirds	Semipalmated sandpiper	Unknown
Bird	Transient shorebirds	Whimbrel	Unknown
Bird	Wintering waterbirds	Greater scaup	Decreasing
Bird	Wintering waterbirds	Horned grebe	Unknown
Bird	Wintering waterbirds	Lesser scaup	Stable
Bird	Wintering waterbirds	Long-tailed duck	Unknown
Bird	Wintering waterbirds	Northern pintail	Unknown
Bird	Wintering waterbirds	Red-throated loon	Unknown
Freshwater fish	Blackchin shiner	Blackchin shiner	Unknown
Freshwater fish	Brook trout, Heritage strains	Brook trout, Heritage strains	Stable
Freshwater fish	Comely shiner	Comely shiner	Stable
Freshwater fish	Deepwater sculpin	Deepwater sculpin	Decreasing

SE Lake Ontario Table 2. (continued)

TaxaGroup	SpeciesGroup	Species	Stability
Freshwater fish	Iowa darter	Iowa darter	Unknown
Freshwater fish	Lake sturgeon	Lake sturgeon	Increasing
Freshwater fish	Ninespine stickleback - inland	N. American ninespine stickleback	Unknown
Freshwater fish	Pugnose shiner	Pugnose shiner	Stable
Freshwater fish	Western pirate perch	Western pirate perch	Decreasing
Herpetofauna	Freshwater wetland amphibians	Four-toed salamander	Unknown
Herpetofauna	Freshwater wetland amphibians	Western chorus frog	Unknown
Herpetofauna	Lake/river reptiles	Eastern ribbonsnake	Unknown
Herpetofauna	Lake/river reptiles	Northern map turtle	Unknown
Herpetofauna	Lake/river reptiles	Spiny softshell	Unknown
Herpetofauna	Lake/river reptiles	Wood turtle	Unknown
Herpetofauna	Massasauga	Eastern massasauga	Decreasing
Herpetofauna	Mudpuppy	Common mudpuppy	Unknown
Herpetofauna	Snapping Turtle	Snapping turtle	Unknown
Herpetofauna	Uncommon turtles of wetlands	Blanding's turtle	Unknown
Herpetofauna	Uncommon turtles of wetlands	Bog turtle	Decreasing
Herpetofauna	Uncommon turtles of wetlands	Spotted turtle	Unknown
Herpetofauna	Uncommon turtles of wetlands	Stinkpot	Unknown
Herpetofauna	Vernal pool salamanders	Blue-spotted salamander	Unknown
Herpetofauna	Vernal pool salamanders	Jefferson salamander	Unknown
Herpetofauna	Woodland/grassland snakes	Black ratsnake	Decreasing
Herpetofauna	Woodland/grassland snakes	Northern black racer	Unknown
Herpetofauna	Woodland/grassland snakes	Smooth greensnake	Unknown
Herpetofauna	Woodland/grassland snakes	Timber rattlesnake	Decreasing
Insect	Bog buckmoth	Bog buckmoth	Decreasing
Insect	Odonates of lakes/ponds	Comet darner	Unknown
Insect	Odonates of rivers/streams	American rubyspot	Unknown
Insect	Odonates of rivers/streams	Blue-tipped dancer	Unknown
Insect	Odonates of rivers/streams	Midland clubtail	Unknown
Insect	Odonates of rivers/streams	Rapids clubtail	Unknown
Insect	Odonates of seeps/rivulets	Arrowhead spiketail	Unknown
Insect	Odonates of seeps/rivulets	Gray petaltail	Unknown
Insect	Odonates of seeps/rivulets	Tiger spiketail	Unknown
Insect	Odonates of small forest streams	Ocellated emerald	Unknown
Insect	Other butterflies	Bog elfin	Decreasing
Insect	Other butterflies	Checkered white	Decreasing
Insect	Other butterflies	Frosted elfin	Decreasing
Insect	Other butterflies	Henry's elfin	Unknown
Insect	Other butterflies	Mottled duskywing	Decreasing
Insect	Other butterflies	Northern oak hairstreak	Stable
Insect	Other butterflies	Persius duskywing	Unknown
Insect	Other butterflies	Silvery blue	Decreasing
Insect	Other butterflies	Southern grizzled skipper	Unknown
Insect	Other butterflies	Tawny crescent	Decreasing
Insect	Other moths	*Hydraecia stramentosa*	Unknown
Insect	Other moths	Imperial moth	Unknown
Insect	Stoneflies/Mayflies of lentic waters	*Siphlonurus barbaroides*	Unknown
Insect	Stoneflies/Mayflies of lotic waters	*Eurylophella bicoloroides*	Unknown
Insect	Stoneflies/Mayflies of lotic waters	*Rhithrogena anomala*	Unknown
Insect	Stoneflies/Mayflies of uncertain habitat	*Dannella provonshai*	Unknown
Insect	Stoneflies/Mayflies of uncertain habitat	*Procloeon simile*	Unknown
Mammal	Furbearers	River otter	Stable
Mammal	Indiana Bat	Indiana bat	Increasing
Mammal	Tree bats	Eastern red bat	Unknown
Mammal	Tree bats	Hoary bat	Unknown
Marine fish	American eel	American eel	Decreasing
Mollusk	Freshwater bivalves	Eastern pearlshell	Unknown
Mollusk	Freshwater bivalves	Elktoe	Unknown
Mollusk	Freshwater bivalves	Rainbow	Unknown
Mollusk	Terrestrial gastropods	Chittenango ovate amber snail	Decreasing

SE Lake Ontario Table 3. SE Lake Ontario Basin species diversity relative to the total number of SGCN statewide

Taxa Group	# Species Groups in the Basin	# Species in the Basin	Total # SGCN Statewide	% of Total SGCN for this Group
BIRDS	**15**	**65**	**118**	**55.1**
Bald Eagle		1		
Beach and Island Ground-Nesting Birds		1	7	14.3
Breeding Waterfowl		2	4	50.0
Colonial Nesting Herons		1	8	12.5
Common Loon		1		
Common Nighthawk		1		
Deciduous/Mixed Forest Breeding Birds		8	9	88.9
Early Successional Forest Breeding Birds		11	12	91.7
Forest Breeding Raptors		6	6	100.0
Freshwater Marsh Nesting Birds		6	6	100.0
Grassland Birds		10	11	90.9
Osprey		1		
Peregrine Falcon		1		
Transient Shorebirds		9	14	64.3
Wintering Waterbirds		6	19	31.6
FRESHWATER FISH	**9**	**9**	**40**	**22.5**
Blackchin shiner		1		
Brook trout, Heritage strains		1		
Comely shiner		1		
Deepwater sculpin		1		
Iowa darter		1		
Lake sturgeon		1		
Ninespine stickleback - inland		1		
Pugnose shiner		1		
Western pirate perch		1		
HERPETOFAUNA	**8**	**19**	**44**	**43.2**
Freshwater Wetland Amphibian		2	5	40.0
Lake/River Reptiles		4	5	80.0
Massasauga		1		
Mudpuppy		1		
Snapping Turtle		1		
Uncommon Turtles of Wetlands		4	5	80.0
Vernal Pool Salamanders		2	4	50.0
Woodland/Grassland Snakes		4	8	50.0
INSECT	**10**	**27**	**197**	**13.7**
Bog Buckmoth		1		
Odonates of Lakes/Ponds		1	5	20.0
Odonates of Rivers/Streams		4	19	21.1
Odonates of Seeps/Rivulets		3	4	75.0
Odonates of Small Forest Streams		1	3	33.3
Other Butterflies		10	18	55.6
Other Moths		2	92	2.2
Stoneflies/Mayflies - Lentic		1	1	100.0
Stoneflies/Mayflies - Lotic		2	20	10.0
Stoneflies/Mayflies - Uncertain Habitat		2	6	33.3
MAMMAL	**3**	**4**	**21**	**19.0**
Furbearers		1	2	50.0
Indiana Bat		1		
Tree Bats		2	3	66.7
MARINE FISH	**1**	**1**	**51**	**2.0**
American Eel		1		
MOLLUSK	**2**	**4**	**59**	**6.8**
Freshwater Bivalves		3	39	7.7
Terrestrial Gastropods		1		
TOTAL	**48**	**129**	**537**	**24.0**
% of all spp groups statewide	**37.5**			

SE Lake Ontario Table 4. SGCN that historically occurred in the SE Lake Ontario Basin, but are now believed to be extirpated from the Basin (n=49).

Taxa Group	Species Group	Species
Bird	Barn owl	Barn owl
Bird	Beach and Island ground-nesting birds	Piping plover
Bird	Breeding waterfowl	American black duck
Bird	Loggerhead Shrike	Loggerhead shrike
Crustacea/Meristomata	Freshwater crustacea	Piedmont groundwater amphipod
Freshwater fish	Extirpated Fishes	Atlantic salmon
Freshwater fish	Extirpated Fishes	Bloater
Freshwater fish	Extirpated Fishes	Kiyi
Freshwater fish	Extirpated Fishes	Shortnose cisco
Freshwater fish	Extirpated Fishes	Silver chub
Freshwater fish	Extirpated Fishes	Spoonhead sculpin
Freshwater fish	Longear sunfish	Longear sunfish
Freshwater fish	Sauger	Sauger
Freshwater fish	Swallowtail shiner	Swallowtail shiner
Insect	Karner blue butterfly	Karner blue
Insect	Odonates of rivers/streams	Arrow clubtail
Insect	Odonates of rivers/streams	Elusive clubtail
Insect	Odonates of rivers/streams	Spine-crowned clubtail
Insect	Odonates of small forest streams	Mocha emerald
Insect	Other moths	*Papaipema aerata*
Insect	Other moths	Aweme borer moth
Insect	Other moths	Hairy artesta
Insect	Other moths	Phyllira tiger moth
Insect	Pine barrens tiger beetles	*Cicindela patruela*
Insect	Stoneflies/Mayflies of lotic waters	*Epeorus suffusus*
Insect	Stoneflies/Mayflies of lotic waters	*Heptagenia julia*
Insect	Stoneflies/Mayflies of lotic waters	*Nixe rusticalis*
Insect	Stoneflies/Mayflies of lotic waters	*Procloeon ozburni*
Insect	Stoneflies/Mayflies of lotic waters	*Pteronarcys comstocki*
Mammal	Extirpated large mammals	Eastern cougar
Mammal	Extirpated large mammals	Gray wolf
Mammal	Small mammals of uncertain/questionable residency	Least shrew
Mammal	Tree bats	Silver-haired bat
Mollusk	Freshwater bivalves	Eastern pondmussel
Mollusk	Freshwater bivalves	Green floater
Mollusk	Freshwater bivalves	Hickorynut
Mollusk	Freshwater bivalves	Lilliput
Mollusk	Freshwater bivalves	Paper pondshell
Mollusk	Freshwater bivalves	Pocketbook
Mollusk	Freshwater bivalves	Slippershell mussel
Mollusk	Freshwater bivalves	Threeridge
Mollusk	Freshwater bivalves	White heelsplitter
Mollusk	Freshwater bivalves	Yellow lamp mussel
Mollusk	Freshwater gastropods	Buffalo pebblesnail
Mollusk	Freshwater gastropods	Campeloma spire snail
Mollusk	Freshwater gastropods	Globe siltsnail
Mollusk	Freshwater gastropods	Lance aplexa
Mollusk	Freshwater gastropods	Mossy valvata
Mollusk	Freshwater gastropods	Spindle lymnaea

SE Lake Ontario Table 5. Significant Coastal Fish and Wildlife Habitats (n=23) within the SE Lake Ontario Basin. DEC evaluates the significance of coastal fish and wildlife habitat areas, and following a recommendation from NYSDEC, the Department of State designates and maps specific areas.

Habitat Name	County	Acres	Significance Value [a]	Description
Salmon River	Oswego	934	166	The Salmon River is the largest coldwater tributary to the Great Lakes in New York State. Critical habitat extends approximately sixteen miles from the river mouth the Altmar Dam (Lower Reservoir), and includes the entire river channel and associated islands and wetlands. The habitat also includes two principal tributaries of the river: Beaverdam Brook, and Orwell Creek. The Salmon River is a very large, medium gradient, coldwater stream, with a predominantly rock and gravel substrate. The river drains approximately 270 square miles of forested headwaters, agricultural lands, and rural residential areas. The lower one and one-half miles of the river are approximately at lake level, forming a wetland embayment over 300 acres in size. Extensive beds of emergent marsh vegetation and submergent aquatic vegetation are interspersed throughout this lower area.Concentrations of salmonids are among the highest in the northeastern United States. Black tern (SC) and least bittern (SC) nesting. Salmonid fisheries attract recreational fishermen from throughout the northeastern United States.
Lakeview Marsh	Jefferson	3,400	157	An extensive undeveloped, lake shore barrier beach, wetland, and tributary complex. Rare in New York State. Area consists of a five mile long barrier beach, freshwater marshes and ponds, two coldwater streams (Sandy Creek and South Sandy Creek), and interspersed uplands. Most of the area is included in the NYSDEC's Lakeview Marsh Wildlife Management Area (WMA), and in Southwick Beach State Park.Salmonid concentrations are of regional significance; population level of nesting black terns is unknown, but may be unusual in the region. Northern harrier (T), least bittern (SC), and black tern (SC) nesting. Recreational salmonid fishery of Statewide significance, and commercial bullhead fishery of regional significance.
North and South Sandy Ponds	Oswego; Jefferson	3,300	125	The largest barrier-bay ecosystem on Lake Ontario, but rarity reduced by human disturbance. Critical habitat is an approximate 3000 acre embayment, separated from the lake by an extensive barrier beach formation. North Sandy Pond ("North Pond"), which comprises about 3/4 of the area, is predominantly shallow (less than 20 feet deep) open water, with dense beds of submergent aquatic vegetation. This pond is connected to Lake Ontario by a very broad, shallow outlet through the beach, and receives inflow from Skinner, Lindsey, Blind, and Little Sandy Creeks. Sizeable areas of emergent wetland vegetation have developed at the lower ends of these tributaries, and at the north and south ends of the pond in sheltered coves. South Sandy Pond ("South Pond") is a sheltered bay that receives relatively little upland runoff. This is one of the major spawning and nursery areas for many fish species on Lake Ontario; also regionally important concentration area for migrant shorebirds, passerines, and raptors. Common tern (T), least bittern (SC), and black tern (SC) nesting; importance to piping plover (E) not adequately documented.
Lake Shore Marshes	Wayne	3,300	118	An extensive complex of undeveloped coastal wetland ecosystems; unusual in New York State. Critical habitat consists of ten relatively discrete units, each encompassing a sizeable coastal wetland area. From west to east, these units are: South Sodus Bay (approximately 225 acres); Hog Island (50 acres); Root Swamp (160 acres); East Bay (730 acres); Brush Marsh (80 acres); Beaver Creek (350 acres); Cottrell Marsh (75 acres); Port Bay (430 acres); Red Creek (380 acres); and Black Creek (500 acres). Most of these areas are located within the NYSDEC's Lake Shore Marshes Wildlife Management Area; only Brush Marsh and a portion of the Black Creek area are privately owned. The various units are generally dominated by emergent wetland vegetation, but relatively large areas of scrub-shrub and forested wetlands also occur.
Deer Creek Marsh	Oswego	1,200	92	One of the largest undeveloped, coastal barrier-wetland ecosystems in the Great Lakes Plain ecological region, comprised of an extensive freshwater wetland complex, a mile-long segment of undeveloped barrier beach, and Deer Creek. The marsh is dominated by cattail and other emergent wetland vegetation, and makes up a major portion of the NYSDEC's Deer Creek Marsh Wildlife Management Area. The southern one third of the habitat area is predominantly scrub-shrub and forested wetland, and is privately owned. All of Deer Creek Marsh is densely vegetated, with less than 2% of the area in open water. The land area bordering the north, east, and south sides of the wetland is rural in nature, including deciduous forest, abandoned fields, agricultural lands, and low density residential development. Concentrations of many wetland wildlife species are among the largest in the Great Lakes Plain ecological region. Northern harrier (T), least bittern (SC), and black tern (SC) nesting.

SE Lake Ontario Table 5. (continued)

Habitat Name	County	Acres	Significance Value [a]	Description
Irondequoit Bay and Creek	Monroe	2,200	80	One of the major coastal bay and tributary systems on the Great Lakes coastal region. Critical habitat includes the entire bay area, a large emergent wetland area at the south end of the bay, and Irondequoit Creek. Irondequoit Bay is separated from Lake Ontario by a sandy barrier beach formation, and is bordered by relatively steep wooded slopes and bluffs. However, much of the western shoreline has been developed for residential and commercial uses. Irondequoit Creek is a very large, medium gradient, coolwater stream, which drains approximately 170 square miles of predominantly suburban and rural residential lands. Concentrations of many warmwater fish species and salmonids are unusual in the Great Lakes Plain ecological region. Least bittern (SC) and sedge wren (SC) nesting. A major recreational fishing area on Lake Ontario, attracting anglers from throughout western and central New York.
Oswego River	Oswego	750	72	One of only 4 river tributaries of New York's Great Lakes, but rarity reduced by extensive human disturbances. Critical habitat includes the one and one-half mile segment of river below Varick Dam, and an approximate 450 acre area of Lake Ontario at the river mouth, encompassing all of Oswego Harbor. The Oswego River has a drainage area of over 5,000 square miles, and an average annual discharge of approximately 6,700 cubic feet per second. Varick Dam serves as a control structure for Navigation Lock No. 7 of the Oswego Canal and for generation of hydroelectric power. The first half-mile of river below the dam is relatively shallow, with a rock and rubble bottom, and small wooded islands. Farther down-stream, the channel is wider, deeper, and extensively bulkheaded in conjunction with high density urban waterfront development. Breakwalls have been constructed at the mouth of the Oswego River, creating a major sheltered harbor.One of the major concentration areas for wintering waterfowl and salmonids in eastern Lake Ontario. Lake sturgeon (T) spawning area. One of the most popular waterfowl hunting and salmonid fishing ar
El Dorado Beach and Black Pond Wetlands	Jefferson	750	71	One of the largest undeveloped, coastal barrier-wetland ecosystems in the Great Lakes Plain ecological region. Critical habitat includes an extensive freshwater wetland complex, a mile-long segment of undeveloped barrier beach, rocky shores, and interspersed uplands. This area includes all of the NYSDEC's Black Pond Wildlife Management Area, The Nature Conservancy's El Dorado Beach Preserve, and some privately owned lands. Black Pond is an approximate 25 acre, shallow pond, located at the point on Lake Ontario where the extensive barrier beaches of the eastern shore give way to rocky coastline. Little Stony Creek (a small, slow-moving, warmwater stream) and several unnamed tributaries flow into Black Pond, which opens through a small outlet to Lake Ontario. Much of El Dorado Beach and Black Pond Wetlands is scrub-shrub and forested wetland, with lesser amounts of emergent marsh; Black Pond is the only sizeable area of open water included in the habitat. Upland areas include the wooded barrier beach, and dense groves of eastern red cedar.A major concentration area on Lake Ontario for migrant shorebirds; populations le
Sodus Bay	Wayne	3,340	56	One of the largest sheltered bay ecosystems on the Great Lakes, but rarity reduced by human disturbance. Critical habitat includes an approximate 3,000 acre embayment, separated from the lake by a narrow barrier beach. Maximum depth of Sodus Bay is approximately 45 feet, but much of the area is relatively shallow (less than 20 feet deep), with dense beds of submergent aquatic vegetation. The outlet of Sodus Bay has been reduced to a narrow, stabilized channel, by the construction of concrete and steel jetties. Sodus Bay receives inflow from First, Second, Third, and Sodus Creeks; all but Sodus are small, low to medium gradient, warmwater streams. Sodus Creek is a relatively large, medium gradient, coolwater stream, draining approximately 20 square miles of rural farmland. Sizeable areas of emergent wetland vegetation have developed at the lower ends of these tributaries, and in sheltered portions of Sodus Bay.One of the major spawning and nursery areas for yellow perch and other warmwater fish species in Laka Ontario.
Genesee River	Monroe	385	54	One of 4 major New York tributaries of Lake Ontario; unusual in the Great Lakes Plain ecological region, but rarity is reduced by human disturbances. Critical habitat is an approximate six and one-half mile segment of the river, extending from Lake Ontario to "Lower Falls" (located just above Driving Park Avenue), which is a natural impassable barrier to fish. The Genesee River is a large, warmwater river, with a drainage area of nearly 2,500 square miles, and an average annual discharge of approximately 2,800 cubic feet per second. Maximum water depths of up to 25 feet occur near the river mouth, and a navigation channel has been dredged upstream approximately two and one-half miles. Much of this lower segment is bordered by dense commercial, industrial, and residential development, accompanied by extensive bulkheading. Above this area, the Genesee River flows through a relatively undeveloped wooded gorge, and has a fringe of emergent wetland vegetation along much of its shoreline. This portion of the river is relatively shallow, with a rocky bottom.Concentrations of spawning slamonids are among the largest occuring in New York's Great Lakes trib

SE Lake Ontario Table 5. (continued)

Habitat Name	County	Acres	Significance Value [a]	Description
Sandy Pond Tributaries	Oswego; Jefferson	75	44	High quality, unobstructed, coldwater tributaries; rare on Lake Ontario, but rarity is reduced by human disturbance. Critical habitat includes portions of the three largest tributaries of North Sandy Pond: Skinner Creek (approximately 7 miles included); Lindsey Creek (6 miles); and Little Sandy Creek (5 miles). Each of these streams are relatively small (less than 20' wide), free flowing, medium gradient, and coldwater, with a gravelly substrate and high water quality. Sandy Pond Tributaries drain out of forested headwaters in eastern Oswego County and flow through rural residential and agricultural areas en route to Lake Ontario. Portions of these streams have been disturbed by livestock grazing, bank clearing, road crossings, and channeliza-tion, resulting in some degradation of the habitat. Includes 2 of 3 streams in New York that have been stocked with Atlantic salmon to restore this species to Lake Ontario; concentrations of naturally reproducing salmonids are unusual on Lake Ontario.
Port Bay	Wayne	440	41	Relatively large, shallow, sheltered bay; unusual in the Lake Ontario subzone. habitat is an approximate 400 acre open water portion of the bay, situated north of the NYSDEC's Lake Shore Marshes Wildlife Management Area (Port Bay Unit), and separated from the lake by a barrier beach formation. Port Bay is relatively shallow (less than 25 feet deep), with dense beds of submergent aquatic vegetation. The bay is connected to Lake Ontario by a small outlet through the beach, and receives inflow primarily from Wolcott Creek. Wolcott Creek is a relatively large, medium gradient, warmwater stream, draining approximately 27 square miles of rural farmland.One of the major spawning and nursery areas for yellow perch in Lake Ontario.
Butterfly Creek Wetlands	Oswego	375	37	One of the largest, undisturbed, coastal wetland ecosystems in Oswego County. A 375-acre wetland, separated from Lake Ontario by a narrow barrier beach. The area contains a diversity of wetland plant communities, including emergent, scrub-shrub, and forested wetland types. It is densely vegetated, with scattered shallow water areas, and small wooded islands comprising a secondary dune system. Least bittern (SC) nesting; pugnose shiner reported (E), but not confirmed. Concentrations of many wetland wildlife species are among the largest in Oswego County.
Snake Creek Marsh	Oswego	144	35	Relatively large, scrub-shrub and emegent wetland; uncommon in Oswego County. Area consists of an approximate 120 acre wetland, separated from Lake Ontario by a narrow barrier beach, and bisected by Lake Shore Road. Below Lake Shore Road, the area is predominantly scrub-shrub and emergent wetland; above the road, it is predominantly scrub-shrub and forested wetland. Snake Creek is a small, slow-moving, intermittent stream which flows through the marsh and drains into Lake Ontario via underground seepage through the barrier beach. Snake Creek Marsh is densely vegetated, with scattered shallow, open water areas.Least bittern (SC) nesting; lake chubsucker (T) reported but not confirmed.
Teal Marsh	Oswego	285	35	Relatively large, diverse scrub-shrub and emergent wetland; unusual in Oswego County. Critical habitat encompasses an approximate 250 acre wetland, separated from Lake Ontario by a narrow barrier beach. The area is predominantly scrub-shrub and forested wetland, hydrologically connected to the lake via underground seepage through the beach. Two unnamed intermittent streams flow into the wetland. Teal Marsh is densely vegetated, with scattered shallow water areas, small wooded islands, and a highly irregular edge. The surrounding land area to the west, south, and east, is dominated by mixed deciduous and coniferous woodlands. The interior is essentially undisturbed, but areas along the northern shore have been developed into summer camps and residences, resulting in some encroachment into the marsh. Least bittern (SC) nesting.
Ramona Beach Marsh	Oswego	117	30	Relatively large, undeveloped, emergent wetland ecosystem, unusual in Oswego County. Critical habitat includes an approximate 70 acre emergent wetland that has developed where Snake Creek empties into Lake Ontario. Vegetation in the area is dominated by narrow-leaved and broad-leaved persistent emergents (e.g., cattail, pickerelweed, and burreed); there are also areas of scrub-shrub wetland and submergent aquatic beds. Above the marsh, Snake Creek is a small, medium gradient, intermittent stream. Much of the land area bordering Ramona Beach Marsh is undeveloped forestland. However, the barrier beach separating the marsh from Lake Ontario has been completely developed for seasonal camps and permanent residences. Least bittern (SC) nesting; pugnose shiner (E) reported but not confirmed.

SE Lake Ontario Table 5. (continued)

Habitat Name	County	Acres	Significance Value [a]	Description
Sage Creek Marsh	Oswego	50	30	Relatively small, undisturbed, flood pond wetland dominated by nonpersistent emergents; unusual in Oswego County. Critical habitats include an approximate 35 acre streamside wetland and flood pond system that has developed where Sage Creek empties into Lake Ontario. Vegetation in the area is dominated by narrow-leaved and broad-leaved nonpersistent emergents (e.g., burreed, pickerelweed, and arrow-arum); there are also areas of submergent aquatic beds and wet meadows. Above the marsh, Sage Creek is a small, medium gradient, intermittent stream. Much of the land area bordering Sage Creek Marsh is undeveloped forest and open field; there is little evidence of human disturbance, except for several seasonal camps and permanent residences on the barrier beach at the mouth of the creek.Black tern (SC) nesting.
Sterling Creek and Wetlands	Cayuga	1,012	29	Relatively large, undisturbed, coastal wetland ecosystem; unusual in Great Lakes region. Critical habitat habitat consists primarily of approximately 900 acres of emergent marsh, dominated by broad-leaved cattail. This extensive wetland area is separated from Lake Ontario by a band of eroding drumlins and barrier beaches, located in Fair Haven Beach State Park. The park is heavily used for camping, picnicking, boating and water sports, resulting in some disturbance of the habitat. Much of the central marsh area is privately owned, and is bordered by undeveloped wooded hills and sparse residential development. Also included in the habitat are Sterling Creek, and its principal tributary, Sterling Valley Creek. These are relatively wide (25-50'), slow-moving, warmwater streams which meander through the marsh. A large, shallow, bay area (referred to as "The Pond"), containing dense beds of submergent aquatic vegetation, exists at the mouth of Sterling Creek.Northern harriers (T) occur in the area, but extent of use is not adequately documented.
Derby Hill	Oswego	108	26	Located along the southeastern shore of Lake Ontario, comprised of upland fields, woodlands, and bluffs. Critical habitat includes a small drumlin, containing abandoned fields, woodlots, and active agricultural lands. Derby Hill drops off abruptly into Lake Ontario, from an elevation of 316 feet above mean sea level (approximately 60 feet above the lake). This area includes most of the 60 acre Derby Hill Bird Observatory, Concentrations of raptors observed here during spring are unusual in New York State, but the species seen here are probably concentrated at many locations along the eastern shore of Lake Ontario. A valuable site for observation of migratory birds; a major source of population data in northeastern US, and one of the most popular birdwatching areas in New York.
Little Salmon River	Oswego	150	26	One of about 10 major Lake Ontario tributaries and associated wetlands, but rarity reduced by human disturbance. The Little Salmon River has a relatively wide (50-150'), deep, meandering channel, bordered by emergent wetland vegetation and wooded banks in undisturbed areas. Beds of submergent aquatic vegetation occur throughout this area. However, since the 1970's, portions of the lower river and adjacent area have been developed for residences, camps, marinas, and motorboat access facilities, resulting in considerable habitat disturbance.One of the most productive warmwater fish spawning areas around Lake Ontario (ecological subzone). A major access point to Lake Ontario.
Salmon Creek	Wayne	69	26	One of the largest and least disturbed tributaries of Lake Ontario in Wayne County. Critical habitat is an approximate six mile segment of the stream, extending from the mouth to a dam near the hamlet of Sodus Center. Salmon Creek is a shallow, medium gradient, coolwater stream, with perennial flow and a gravel and rubble substrate. Near its mouth, the creek (locally referred to as Maxwell Creek), forms an approximate 25 acre embayment known as Maxwell Bay. The bay contains extensive beds of submergent and emergent wetland vegetation, and is separated from Lake Ontario by a wooded barrier beach that averages about 100 feet in width. The outlet of Salmon Creek is relatively small and shallow. Salmon Creek drains approximately 26 square miles of rural farmland, and is bordered by woody riparian vegetation along much of its length. Habitat disturbances in the area are generally limited to road crossings, litter, and discharges of runoff from active agricultural lands.Concentrations of spawning salmonids are unusual in Wayne County. One of the most popular salmonid fishing ares on Lake Ontario's south shore (Finger Lakes region).

SE Lake Ontario Table 5. (continued)

Habitat Name	County	Acres	Significance Value [a]	Description
Grindstone Creek and Marsh	Oswego	160	22	Relatively large, undeveloped, flood pond wetland and tributary ecosystem; unusual in Oswego County. Critical habitat is an approximate one and one-half mile section of the creek (up to N.Y.S. Route 3) and associated wetlands, comprising approximately 160 acres. This portion of Grindstone Creek has a relatively wide, deep, meandering channel, bordered by emergent wetland vegetation and wooded banks. The marsh is separated from the lake by a narrow barrier beach, and the outlet is very shallow. The northern half of this area, and the adjacent uplands, are located in Selkirk Shores State Park. One of the most popular recreational fishing areas on the eastern end of Lake Ontario.
East Bay	Wayne	120	19	An approximate 120-acre open water portion of the shallow, sheltered bay, situated north of the NYSDEC's Lake Shore Marshes Wildlife Management Area (East Bay Unit), and separated from the lake by a narrow, undeveloped, barrier beach. East Bay is relatively shallow (less than 10 feet deep), with dense beds of submergent aquatic vegetation, and a fringe of emergent wetland vegetation. The bay is intermittently connected to Lake Ontario by a very small inlet through the beach, and receives inflow from several small, low gradient, warmwater streams.

[a] Significance Value = [(Ecosystem Rarity + Species Vulnerability + Human Use + Population Level) x Replaceability]

SE Lake Ontario Table 6. Office of Parks, Recreation & Historic Preservation (OPRHP) land units (n=34) within the SE Lake Ontario Basin.

Unit Name	County	DEC Region	Acres
Southwick Beach State Park	Jefferson	6	214
Westcott Beach State Park	Jefferson	6	316
Verona Beach State Park	Oneida	6	1,678
Fillmore Glen State Park	Cayuga	7	948
Long Point State Park	Cayuga	7	233
Sterling Conservation Easement	Cayuga	7	1,167
Chittenango Falls State Park	Madison	7	198
Helen L. Mcnitt State Park	Madison	7	154
Clark Reservation State Park	Onondaga	7	348
Frenchman Island	Onondaga	7	25
Green Lakes State Park	Onondaga	7	1,760
Battle Island State Park	Oswego	7	210
Mexico Point State Park	Oswego	7	126
Selkirk Shores State Park	Oswego	7	1,046
Allan H. Treman Marine Park	Tompkins	7	98
Buttermilk Falls State Park	Tompkins	7	733
Robert H. Treman State Park	Tompkins	7	860
Taughannock Falls State Park	Tompkins	7	816
Mark Twain State Park	Chemung	8	531
Canal Park - Lock 32 (Pittsford)	Monroe	8	15
Durand Eastman (Irondequoit Bay)	Monroe	8	18
Irondequoit Bay Marine Park	Monroe	8	30
Isaac (Irondequoit Bay)	Monroe	8	24
Canandaigua Lake Marine Park	Ontario	8	13
Watkins Glen State Park	Schuyler	8	704
Bonavista State Park	Seneca	8	251
Cayuga Lake State Park	Seneca	8	134
Lodi Point Marine Park	Seneca	8	12
Sampson State Park	Seneca	8	1,879
Seneca Lake State Park	Seneca	8	155
Beechwood State Park	Wayne	8	147
Chimney Bluffs State Park	Wayne	8	438
Fair Haven Beach State Park	Wayne	8	838
Keuka Lake State Park	Yates	8	647

SE Lake Ontario Table 7. NYSDEC Wildlife Management Area (WMA) land units (n=25) within the SE Lake Ontario Basin.

Unit Name	County	DEC Region	Acres
Black Pond Wildlife Management Area	Jefferson	6	526
Honeyville Wildlife Management Area	Jefferson	6	111
Lakeview Marsh Wildlife Management Area	Jefferson	6	3,461
Littlejohn Wildlife Management Area	Oswego/Jefferson	7	8,020
Rome Wildlife Management Area	Oneida	6	1,004
Tug Hill Wildlife Management Area	Lewis	6	5,114
Tioughnioga Wildlife Management Area	Madison	7	3,705
Cicero Swamp Wildlife Management Area	Onondaga	7	3,961
Cross Lake Islands Wildlife Management Area	Onondaga	7	32
Hamlin Marsh Wildlife Management Area	Onondaga	7	1,473
Three Rivers Wildlife Management Area	Onondaga	7	3,497
Curtiss-Gale Wildlife Management Area	Oswego	7	45
Deer Creek Marsh Wildlife Management Area	Oswego	7	1,200
Happy Valley Wildlife Management Area	Oswego	7	8,703
Three Mile Bay / Big Bay Wildlife Mgmt. Area	Oswego	7	3,615
Connecticut Hill Wildlife Management Area	Tompkins	7	11,645
Northern Montezuma Wildlife Management Area	Cayuga/Wayne/Seneca	7, 8	6,937
Stid Hill Multiple Use Area	Ontario	8	840
Catharine Creek Wildlife Management Area	Schuyler	8	660
Canoga Marsh Wildlife Management Area	Seneca	8	104
Willard Wildlife Management Area	Seneca	8	158
Cold Brook Wildlife Management Area	Steuben	8	68
Galen Marsh Wildlife Management Area	Wayne	8	741
Lake Shore Marshes Wildlife Management Area	Wayne	8	6,179
High Tor Wildlife Management Area	Yates	8	6,288

SE Lake Ontario Table 8. NYSDEC State Forest and Unique Area land units (n=67) within the SE Lake Ontario Basin.

Unit Name	County	DEC Region	Acres
Gould Corners State Forest	Jefferson	6	2,036
Pinckney State Forest	Jefferson/Lewis	6	2,166
Tug Hill State Forest	Jefferson/Lewis	6	11,981
Cottrell State Forest	Lewis	6	592
East Osceola State Forest	Lewis	6	2,150
Granger State Forest	Lewis	6	720
Lesser Wilderness State Forest	Lewis	6	11,333
Line Brook State Forest	Lewis	6	684
Lookout State Forest	Lewis	6	4,064
Mohawk Springs State Forest	Lewis	6	620
Raywood Unique Area	Lewis	6	279
Sears Pond State Forest	Lewis	6	5,856
Swancott Mill State Forest	Lewis	6	732
Swancott Hill State Forest	Lewis/Oneida	6	2,034
Big Brook State Forest	Oneida	6	3,857
Canada Creek State Forest	Oneida	6	622
Cobb Brook State Forest	Oneida	6	680
Fall Brook State Forest	Oneida	6	4,477
Fish Creek State Forest	Oneida	6	676
Florence Hill State Forest	Oneida	6	1,364
Furnace Creek State Forest	Oneida	6	1,396
Mad River State Forest	Oneida	6	2,925
Point Rock State Forest	Oneida	6	1,207
Rome Sand Plains Unique Area	Oneida	6	1,799
Stone Barn State Forest	Oneida	6	617
Tri-County State Forest	Oneida	6	474
West Branch State Forest	Oneida	6	528
West Osceola State Forest	Lewis/Oswego	6, 7	1,883
Bear Swamp State Forest	Cayuga	7	3,359
Frozen Ocean State Forest	Cayuga	7	750
Summer Hill State Forest	Cayuga	7	4,413
Hewitt State Forest	Cortland	7	946
Kennedy State Forest	Cortland	7	4,470
Labrador Hollow Unique Area	Cortland	7	1,489
Deruyter State Forest	Madison	7	972
Nelson Swamp Unique Area	Madison	7	874
Stoney Pond State Forest	Madison	7	1,492
Camillus Forest Unique Area	Onondaga	7	351
Morgan Hill State Forest	Onondaga	7	2,174
Split Rock Unique Area	Onondaga	7	29
Altmar State Forest	Oswego	7	934
Battle Hill State Forest	Oswego	7	1,692
Chateaugay State Forest	Oswego	7	3,447
Hall Island State Forest	Oswego	7	2,454
Kasoag State Forest	Oswego	7	986
Klondike State Forest	Oswego	7	881
O'Hara State Forest	Oswego	7	1,021
Orton Hollow State Forest	Oswego	7	514
Salmon River Falls Unique Area	Oswego	7	110
Salmon River State Forest	Oswego	7	2,095
Sandy Creek State Forest	Oswego	7	535
Sandy Pond Beach Unique Area	Oswego	7	83
Stone Hill State Forest	Oswego	7	1,020
Trout Brook State Forest	Oswego	7	635
Winona State Forest	Oswego	7	9,387
Danby State Forest	Tompkins	7	7,011
Hammond Hill State Forest	Tompkins	7	3,578
Shindagin Hollow State Forest	Tompkins	7	5,252
Yellow Barn State Forest	Tompkins	7	1,292
Squaw Island Unique Area	Ontario	8	< 1
Coon Hollow State Forest	Schuyler	8	2,522
Sugar Hill State Forest	Schuyler	8	8,951
Texas Hollow State Forest	Schuyler	8	912
Pigtail Hollow State Forest	Steuben	8	1,015
Urbana State Forest	Steuben	8	2,728
Bare Hill Unique Area	Yates	8	296
Italy Hill State Forest	Yates	8	1,918

SE Lake Ontario Table 9. Bird Conservation Areas (BCA) within the SE Lake Ontario Basin (n=3). NYSDEC's BCA Program, established in 1997, is modeled after the National Audubon Society's Important Bird Areas (IBA) program, which began in New York in 1996. The BCA Program applies criteria developed under the IBA program to state-owned properties.

Bird Conservation Area	County	DEC Region	Acres	Description
Eastern Lake Ontario Marshes	Jefferson/Oswego	6, 7	4,940	A complex of long barrier beaches, embayments, dunes, marshes, and swamps with cold water streams. Lakeshore barrier beach and wetland complexes such as this are rare in New York State. This area has been recognized by the Department of State as a Significant Coastal Fish and Wildlife Habitat and, in part, has also been designated as a National Natural Landmark. This BCA has significant breeding and over-wintering habitats, and serves as a critical migratory corridor for birds. Critical habitats include a mosaic of Great Lakes inland dunes and high quality wetlands with extensive barrier beaches backed by shrub/scrub and forested lands. Rare or exemplary ecological communities: silver maple-ash swamp, Great Lakes dunes, rich shrub fen, medium fen, red maple-hardwood swamp, red maple-tamarack peat swamp, maple-basswood rich mesic forest, deep emergent marsh, sand beach.
Montezuma Wetlands Complex	Seneca/Wayne/Cayuga	7, 8	6,937	Part of a larger complex of state, federal and private lands.Critical habitats include high quality wetlands bordered by deciduous forest and shrub/scrub, open agricultural fields, and grasslands provide diverse habitat for bird species. Riparian wetlands provide open water and flood plain forests. Unique habitats include bogs and inland salt marshes. Exemplary ecological communities include: deep emergent marsh, shallow emergent marsh, shrub swamp, forested wetlands. The site hosts one of the largest migratory concentrations of waterfowl in the Northeast. Over 500,000 Canada Geese pass through the complex during migration. During spring migration, over 25,000 Snow Geese regularly use the area. In late fall, Mallard numbers peak at 100,000 and American Black Ducks at 25,000 or more. This BCA is one of the most significant stopover and foraging locations for shorebirds in upstate New York, regularly hosting 1,000 or more individuals of 25 species. The site supports breeding colonies of Great Blue Heron and Black-crowned Night Heron and hosts one of the largest fall swallow concentrations in the state, sometimes estimated at more than 50,000-100
High Tor	Yates/Ontario	8	6,288	Area includes three separate areas of diverse habitat including approximately 3,400 acres of steep wooded terrain with several man-made impoundments; 1,700 acres of freshwater marsh bordering the south end of Canandaigua Lake; and 1,000 acres of overgrown fields with steep, wooded hillsides. A concentration site for migratory species, at-risk species, and overall bird diversity. Species of interest include: Pied-billed Grebe (Threatened), Bald Eagle (Threatened), Least Bittern (Threatened), American Bittern (Special Concern), Northern Goshawk (Special Concern), Cooper's Hawk (Special Concern), Bobolink, and Canada Warbler.

SE Lake Ontario Table 10. Critical Environmental Areas (CEA) within the SE Lake Ontario Basin (n=6). CEAs are traditionally designated by DEC to protect drinking water supplies; however, DEC and other government agencies may designate CEAs to protect wildlife and their habitats and other natural resource elements.

Critical Environmental Area	Location	DEC Region	Reason for Designation
Sandy Pond	Sandy Creek, Oswego County	7	Protect barrier dunes,wetlands,resources
Coy Glen	Ithaca, Tompkins County	7	Wide variety of botanical species
Ninemile Creek	Camillus, Onondaga County	7	Protect habitat, water quality
Cobbs Hill	Rochester, Monroe County	8	Protect open space
Pinnacle Hill	Rochester, Monroe County	8	Protect open space
Village of East Bloomfield	East Bloomfield, Ontario County	8	Protect the municipal water supply

SE Lake Ontario Table 11. Critical **aquatic** habitats found in the SE Lake Ontario Basin, classified at the system and sub-system level, adapted from Edinger et al. (2002). The number of SGCN that indicate each system/sub-system association as a critical habitat is indicated.

System	Sub-System	Number of Species
Palustrine	mineral soil wetland	30
Riverine	cold water stream	15
Lacustrine	cold water deep	12
Lacustrine	warm water shallow	12
Riverine	warm water stream	12
Palustrine	peatlands	8
Lacustrine	warm water deep	7
Lacustrine	cold water shallow	6
Riverine	deep water river	6
Riverine	unknown	5
Lacustrine	unknown	4
Riverine	coastal plain stream	4
Lacustrine	coastal plain	2
Palustrine	unknown	1
Riverine	warm water deep	1
Riverine	warm water shallow	1

SE Lake Ontario Table 12. Critical **terrestrial** habitats found in the SE Lake Ontario Basin, classified at the system and sub-system level, adapted from Edinger et al. (2002). The number of SGCN that indicate each system/sub-system association as a critical habitat is indicated.

System	Sub-System	Number of Species
Terrestrial	open upland	45
Terrestrial	forested	38
Terrestrial	barrens/woodlands	17
Terrestrial	coastal	7
Terrestrial	alpine/mountain	3
Subterranean	natural/cultural	1
Terrestrial	unknown	1

SE Lake Ontario Table 13. Summary of threats, number of (and percent of all) species groups affected, and percentage of all threats for SGCN in the SE Lake Ontario Basin
For details on threats, see Appendix: *Threats Characterization for Wildlife and Their Habitats.*

Threats	# of Species Groups Affected	% of All Spp Groups in Basin	% of All Threats in Basin
Habitat Loss - cultural (e.g., development)	30	62.5	10.8
Contaminants	22	45.8	7.9
Degradation of Water Quality	18	37.5	6.5
Human Disturbance - illegal/unregulated harvest	15	31.3	5.4
Barriers to Movement in Aquatic Habitats (e.g., dams, weirs, culverts)	14	29.2	5.0
Human Disturbance - collisions	14	29.2	5.0
Interspecific Competition for Resources	14	29.2	5.0
Disrupted Predator-Prey Cycles	13	27.1	4.7
Human Disturbance - general	12	25.0	4.3
Disease	10	20.8	3.6
Fragmentation	10	20.8	3.6
Habitat Loss - natural (e.g., succession)	9	18.8	3.2
Competition from Invasive Exotics	8	16.7	2.9
Sedimentation/Erosion (impacts on aquatic habitats)	8	16.7	2.9
Insensitive/Unsustainable Agricultural/Silvicultural Practices	7	14.6	2.5
Active Alteration/Suppression of Natural Processes (e.g., fire)	6	12.5	2.2
Unknown Threats	6	12.5	2.2
Loss of Streamside Buffers	5	10.4	1.8
Altered Hydrology (water level management/extraction)	5	10.4	1.8
Human Disturbance - entanglement, entrainment, impingement	5	10.4	1.8
Habitat Composition Altered by Aquatic Invasive Species	4	8.3	1.4
Reduction of Patch Size, Shape, Area	4	8.3	1.4
Loss of Connectivity/Metapopulation Dynamics	4	8.3	1.4
Susceptibility to Stochastic Events (weather, storms)	4	8.3	1.4
Susceptibility to Stochastic Events (isolated pop'ns)	4	8.3	1.4
Climate Change (change in water level, temperature)	4	8.3	1.4
Habitat Composition Altered by Terrestrial Invasive Species	3	6.3	1.1
Detrimental Hybridization	3	6.3	1.1
Susceptibility to Stochastic Events (rare species)	3	6.3	1.1
Barriers to Movement in Terrestrial Habitats (e.g., roads, powerlines)	2	4.2	0.7
Pollution (e.g., acid rain, soil contamination)	2	4.2	0.7
Terrestrial Habitat Composition Altered by Overuse (e.g., deer)	2	4.2	0.7
Loss of Host Species	2	4.2	0.7
Parasites	2	4.2	0.7
Climate Change (change in species range, distb'n, migration)	2	4.2	0.7
Aquatic Habitat Composition Altered by Overuse (e.g., swans, muskrat)	1	2.1	0.4
Negative Edge Effects (i.e., increased predation, "ecological traps")	1	2.1	0.4
Aquatic Habitat Altered by Natural Processes (e.g., beaver)	1	2.1	0.4

SE Lake Ontario Table 14. Approved State Wildlife Grant studies relevant to the SE Lake Ontario Basin (Coordination Grant T-1, Wildlife Grants T-2-1 and T-2-2, and Fish/Marine Grant T-3).

State Wildlife Grant Study	Location	Description
COORDINATION GRANT		
Project 1: Comprehensive Wildlife Conservation Planning & Coordinatior		
Job 1: SWG Coordination & Development of the Comprehensive Wildlife Conservation Strategy	Statewide	New York will develop a Comprehensive Wildlife Conservation Strategy by October 2005, focusing on species of greatest conservation need in the state. We will work closely with partner organizations and the public to develop the plan, which will identify management needs, goals and strategies for more than 500 animal species that are rare, declining, vulnerable, or status unknown in New York State.
WILDLIFE CONSERVATION GRANT		
Project 1: Conservation Planning for Species of Greatest Conservation Need		
Bird Conservation		
Job 1: New York State's 2nd Breeding Bird Atlas	Statewide	New York completed its first Breeding Bird Atlas during 1980-1985, and the second atlas project (2000-2004) is underway. State Wildlife Grant funding will ensure completion of the second atlas, which will document the current distribution of breeding birds in New York State and quantify changes in distributions of species between the two atlas periods. Once completed, Atlas results will be made available in book and web-based formats for use by conservation biologists, planners, and the public.
Job 2: Developing a Grassland Bird Conservation Plan for New York State	Statewide, where grassland habitats are present	Because of widespread loss and fragmentation of grassland habitat, grassland bird populations are declining in New York and throughout North America. This project will develop a comprehensive plan to guide and direct grassland bird conservation and management on public and private lands in New York State. The plan will help direct conservation efforts to the most important areas, provide guidance to grassland owners and managers, and identify monitoring and research needs for grassland birds.
Job 3: Spruce Grouse in Lowland Boreal Habitat of New York State: Distribution, Populations and Movements	Essex, Hamilton, Herkimer counties	The spruce grouse is an endangered species in New York, where some of its spruce-fir forest habitat has been lost due to forest maturation, habitat fragmentation, and logging. Confusion with the more common ruffed grouse has led to accidental hunting, and the species' unwariness has made it vulnerable to human disturbance. Urgently needed are: surveys to determine status and distribution; research to assess factors causing rarity or declines; population or habitat protection and management to secure the species' status; and completion and implementation of a state recovery plan. This project will help address those needs.
Job 4: Common Loon Migration and Wintering Areas	Adirondack Park	We know very little about where common loons, a species of special concern in New York State, spend their non-breeding periods. This project will use satellite telemetry to determine migration routes, wintering areas and seasonal movements of loons that summer in New York. The results will help identify potential threats to common loons during non-breeding periods, including coastal energy developments, exposure to Type E botulism in the Great Lakes, ocean contaminants, and commercial fishing gear.
Job 5: Golden-winged Warbler Habitat and Hybridization Study	Sterling Forest State Park, Orange County	The golden-winged warbler has declined at an annual rate of 8 percent for the last 35 years in the northeastern U.S. Possible factors in its decline include reforestation and range expansion of the blue-winged warbler. This project will investigate genetics and habitat segregation among these two species. Results will help to establish whether they should be considered distinct species and provide guidance for habitat management plans to sustain golden-winged warbler populations.
Job 6: Conservation Plan for Common Terns in Upstate New York	Oneida Lake & St. Lawrence River	Nesting populations of common tern, a threatened species in New York, occur in three upstate areas (Niagara River, Oneida Lake and St. Lawrence River). Most nesting occurs on artificial structures such as piers and navigation structures, which often require annual maintenance of nesting substrate, predator deterrents, and other measures to ensure successful nesting. In order to make management efforts more effective and efficient, a long-term plan will be developed for conservation of common terns in upstate New York.
Job 17: Marshbird Conservation in New York State	Statewide, where freshwater emergent marshes are present	Baseline information on distribution and abundance is needed for many marsh-nesting species in New York State. Species of concern include pied-billed grebe, black tern, least bittern, American bittern, and king rail. This project will survey representative freshwater marsh habitats across the state during 2004-2006 to quantify abundance and habitat use of marsh birds, identify focus areas for marsh bird conservation, and develop a long-term monitoring program.

SE Lake Ontario Table 14. (continued)

State Wildlife Grant Study	Location	Description
Job 18: Coordinated Comprehensive Bird Monitoring Plan for New York State	Statewide	Comprehensive and coordinated monitoring programs are needed to reliably assess the status of all bird "species of greatest conservation need" in New York State. This project will document details of existing bird monitoring and survey programs in New York and assess their utility for monitoring various species of concern. We will form a bird monitoring partnership, involving agencies, organizations, and individuals, to recommend and help implement new or improved monitoring and survey programs for all bird species in New York State.
Job 19: Assesment of Boreal Forest Bird Habitats in the Adirondack Park	Adirondack Park	Boreal forests are recognized as critical breeding grounds for a variety of bird species that occur nowhere else in New York State. Within the state there are two relatively distinct assemblages of bird species found in "low elevation" and "high elevation" boreal forest types, each of which includes a number of New York's "species of greatest conservation need." The overall goal of this project is to better quantify the status and habitat requirements of various low and high elevation boreal forest birds.
Job 21: Use of Radar to Document Bird and Bat Migrations in New York State	Lewis, Jefferson, Oswego counties	Effective conservation of migratory birds and bats, including many species of greatest conservation need, requires better information on their migration patterns through New York State. This information is needed to help plan wind energy developments (or other tall structures) to prevent significant mortality of migratory species. This project will assess the utility of various techniques, including radar studies, acoustic monitoring, and thermal imaging for documenting timing, altitude, corridors or stopover habitats of birds and bats migrating through New York State.
Job 22: Golden-winged Warbler Habitat Restoration Investigation	Sterling Forest State Park, Orange County	The golden-winged warbler (GWWA) has declined at an annual rate of eight percent for the last 35 years in the northeastern U.S. and is a candidate for federal listing as a threatened or endangered species. Possible factors in its decline include loss of habitat due to reforestation and hybridization with the blue-winged warbler. Results of prior SWG-funded research will be used to design and conduct an experimental habitat restoration project in Sterling Forest State Park to assess the feasibility of creating or maintaining suitable habitat for GWWA in southeastern New York.
Mammal Conservation		
Job 7: Determining Winter Roost Selection of *M. leibii* and summer destination of hibernating *M. sodalis* and *M. Leibii*	Essex and Ulster counties	The small-footed bat is the least common bat encountered during winter surveys in the eastern U.S., and 75 percent occur in New York. The species may be more common than winter counts suggest because it hibernates in hidden locations (under rocks, in crevices). DEC plans to radio-tag a sample of these bats as they enter a major hibernaculum to determine how many are detected during routine surveys. We also plan to radio-tag Indiana and small-footed bats as they emerge from their hibernacula and follow them by airplane to determine summer distribution and habitat preferences.
Job 8: Feasibility of Implementing a Robust Design Mark-Recapture Study for Indiana Bats	Statewide, where Indiana bats are present	The Indiana bat, a federally endangered species, has declined from roughly 600,000 in the 1960s to about 350,000 today. Population declines in southern portions of its range, primarily Kentucky and Missouri, have far exceeded increases in the north, including New York. We hope to conduct a large scale mark-recapture study to identify causes of the decline and regional differences in population trends. The first step is a feasibility study to determine if we can adequately address assumptions of the study design.
Job 9: Determining the Feasibility of a Statewide Summer Survey of Tree Bats	Statewide, north of NYC and Long Island	Tree bats (red, hoary and silver-haired bats) are among the least understood vertebrates in the state. We do not know the current status or distribution of any of these species, and the most comprehensive surveys were conducted more than 100 years ago. Recent technical innovations have increased the reliability of field sampling while reducing costs. We plan to conduct initial surveys to determine the costs and effectiveness of conducting a statewide status survey for tree bats in New York State.
Reptile & Amphibian Conservation		
Job 10: Assessment of the Status and Abundance of High Priority Reptile and Amphibian Species	Statewide	As a group, a higher proportion of amphibian and reptile species have suffered significant declines than any other vertebrate groups in New York State. To date, much effort has been placed on documenting distribution of these endangered and threatened species. This project will focus on collecting information on the status of known populations, following standard protocols, so that conservation efforts can be prioritized on those in greatest need.
Job 12: Reducing Turtle Mortality During Nesting	Statewide	Certain turtle species experience high mortality of females when they migrate from over-wintering locations to traditional egg-laying sites. This project will investigate methods of reducing this mortality through use of subsurface tunnels for crossing roadways, creation of protected nesting sites, and predator exclusions.

SE Lake Ontario Table 14. (continued)

State Wildlife Grant Study	Location	Description
Job 25: Spiny Softshell Turtle Survey and Life History Studies	Shores of Lake Ontario and its tributaries	Little is know about the distribution, life history, seasonal movements, and habitat-use of spiny softshell turtles in New York State. NYSDEC will assess the status and distribution of spiny softshell turtles in the Finger Lakes and the bays on the southern shore line of Lake Ontario, including the streams and creeks that enter Lake Ontario, in order to make recommendations concerning the management of critical habitats for this species.
Job 26: Reptile and Amphibian Species Inventory (cont'd from Job 10, Grant T-2-1)	Statewide	Previous studies have identified many reptile and amphibian species in need of conservation, which is the first step in developing baseline information to measure changes in populations. This project will help complete surveys of other reptile and amphibian species that are listed as species of special concern by New York State. Completion of these surveys will produce a mechanism to assure continuity of surveys for this group of species, as gather well as data to determine the status of special concern reptile and amphibian species.
Invertebrate Conservation		
Job 15: Odonate Inventory	Statewide	There is a need for a comprehensive survey or inventory for odonates (dragonflies and damselflies) statewide. This project will document the current distribution of odonate species in New York State and direct more intensive sampling in selected habitats, areas with expected high odonate diversity, or habitats of rare species. The project will include general surveys conducted by volunteers as well as directed surveys that target specific species, habitats, or poorly known areas of the state.
FISH AND MARINE CONSERVATION GRANT		
Project 1: Conservation Planning for Aquatic Resources		
Freshwater Fish Conservation		
Job 1: Adirondack Round Whitefish Investigation	Adirondack Park	Round whitefish are classified as threatened in New York and their recovery plan calls for an investigation of causes for and solutions to their decline. This project will include field studies to develop sampling protocols in Adirondack lakes, evaluate existing stocking efforts, and prioritize historic waters for likelihood of successful reestablishment.
Job 2: Conservation of Lesser Known Species of Fish	Statewide	This project involves review of DEC and New York State Museum fish records to identify information needs about the status of rare species. Findings will be used to plan new surveys that will eventually allow a complete assessment of the status and distribution of these "lesser known" freshwater fish species of New York State.

For more information on these projects visit NYSDEC website at www.dec.state.ny.us
or contact NYSDEC at:
State Wildlife Grants Program Coordinator
New York Division of Fish, Wildlife and Marine Resources
625 Broadway
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Phone: (518) 402-8924
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swgidea@gw.dec.state.ny.us

SE Lake Ontario Table 15. Existing management plans and agreements relevant to the SE Lake Ontario Basin. This is an assortment of the major planning efforts within the Basin and is not a comprehensive list. Other planning efforts may exist at both the local and landscape scale and should be consulted before implementing conservation actions.

Plan/Agreement Name	Involved Parties	Information
Cayuga Lake Watershed Preliminary Watershed Characterization (2000)	Genesee/Finger Lakes Regional Planning Council	State of the basin; sources of contamination; limnology; programmatic environment; public education; interim recommendations
Protecting the Cayuga Lake Watershed Interactive Guide (2000)	Cayuga Lake Watershed Network	Overview of the study of watersheds; planning and management process in the watershed
Cayuga Lake Watershed Restoration & Protection Plan (2001)	Genesee/Finger Lakes Regional Planning Council	Goals, description of the basin, strategies, threats, monitoring
Seneca Lake Watershed Management Plan (1999)	Genesee/Finger Lakes Regional Planning Council	Description of the basin, threats, trends
Fish Community Objectives for Lake Ontario (1999, 2003)	NYSDEC, Ontario MNR	Goals, description of the lake, habitat alterations, fish species, management actions
Twenty-five Year Plan for the Great Lakes (1991)	NYSDEC	Goals, water quality, economic development, interstate/international partnerships
Lakewide Management Plan for Lake Ontario (1998)	USEPA, Environment Canada, NYSDEC, Ontario Ministry of the Environment	Problem identification, public involvement, monitoring progress
Biodiversity Around the Great Lakes (2002)	USEPA, Purdue University	Educational software program, Great Lakes history, case studies, monitoring, species inventory, habitat restoration
Fish and Wildlife Habitat Status and Trends in the Canadian Watershed of Lake Ontario (2000)	Environment Canada, CWS Ontario Region	Current habitat conditions, threats, current habitat protection/restoration efforts, summary analysis of the status of fish and wildlife habitat, monitoring/evaluation
Strategic Plan for Wetlands of the Great Lakes Basin (1993)	Ontario MNR, Environment Canada, DU Canada, Nature Conservancy of Canada, Federation of Ontario Naturalists	Twenty-five year strategy for wetlands conservation in the Great Lakes Basin
Great Lakes Wetlands Conservation Action Plan (1994, 2002)	Ontario MNR, Environment Canada, DU Canada, Nature Conservancy of Canada, Federation of Ontario Naturalists	Long-term strategies for wetland conservation, implementation of the 25-year Strategic Plan for Wetlands of the Great Lakes Basin
Great Lakes Wetlands Conservation Action Plan Report 2000-2003	Environment Canada	Wetland conservation highlights, review of strategies, partners
Conservation Blueprint for the Great Lakes (2003)	The Nature Conservancy	Preserving biodiversity; framework for action; scientific foundation; threats
Towards a New Conservation Vision for the Great Lakes Region: A Second Iteration (2003)	The Nature Conservancy	Ecoregional planning, visions, goals, identify datagaps and core conservation areas, threats, target species
Great Lakes Strategy - A Plan for the New Millennium (2002)	US Policy Committee for the Great Lakes	Goals, chemical, physical, and biological integrity, partnerships
Final Environmental Impact Statement Double-crested Cormorant Management in the United States (2003)	U.S. Fish and Wildlife Service, USDA APHIS Wildlife Services	Cormorant population trends and impacts on wildlife and habitats, public input process, evaluation of action alternatives, selection of an alternative and justification
NYSDEC Unit Management Plans Camillus Forest Unique Area (Draft) Nelson Swamp Unique Area (1999) Rome Sand Plains Unique Area (Draft) Salmon River Falls Unique Area (Draft) Six Nations State Forest (1997)	NYSDEC	Assessment of the natural and physical resources present within a unit; opportunities for recreational use and ability of resources and ecosystems to accommodate public use; management objectives for public use
Bird Conservation Area Management Guidance Summaries Eastern Lake Ontario Marshes Montezuma Wetlands Complex High Tor	NYSDEC, OPRHP, Audubon	A physical description of the site, BCA criteria met, important species & habitat types, guidance for management, op/maintenance, research, education and outreach. Includes local contacts.
Wildlife Management Area Plans Catharine Creek (1984) Cicero Swamp (1960) Connecticut Hill (1970) Deer Creek Marsh (1975) Galen Marsh (1987) Happy Valley (1970) High Tor (1982) Lake Shore Marshes (1983) Lakeview (1970) Littlejohn (1970) Northern Montezuma (2000) Stid Hill (1987) Three Mile Bay / Big Bay (1970) Three Rivers (1970) Tioughnioga (1970) Tug Hill (1970) Willard (1972)	NYSDEC	Assessment of the wildlife, habitats and physical resources present; history of the property; management, op/maintenance, research, education and outreach objectives; opportunities for recreational use and ability of resources and ecosystems to accommodate public use; management objectives for public use