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

Classification	% Cover
Deciduous Forest	43.64
Evergreen Forest	18.64
Mixed Forest	13.32
Water	8.15
Row Crops	7.78
Pasture/Hay	4.11
Woody Wetlands	1.91
High Intensity Commercial/Industrial	0.77
Emergent Wetlands	0.47
High Intensity Residential	0.46
Low Intensity Residential	0.39
Parks, Lawns, Golf Courses	0.16
Barren; Quarries, Strip Mines, Gravel Pits	0.14

Lake Champlain Table 2. Species of Greatest Conservation Need currently occurring in the Lake Champlain Basin (n=106). 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	Boreal forest birds	Bay-breasted warbler	Decreasing
Bird	Boreal forest birds	Cape May warbler	Unknown
Bird	Boreal forest birds	Olive-sided flycatcher	Decreasing
Bird	Boreal forest birds	Rusty blackbird	Unknown
Bird	Boreal forest birds	Spruce grouse	Decreasing
Bird	Boreal forest birds	Tennessee warbler	Unknown
Bird	Boreal forest birds	Three-toed woodpecker	Unknown
Bird	Breeding waterfowl	American black duck	Decreasing
Bird	Breeding waterfowl	Blue-winged teal	Decreasing
Bird	Breeding waterfowl	Common goldeneye	Unknown
Bird	Colonial-nesting herons	Black-crowned night-heron	Stable
Bird	Colonial-nesting herons	Cattle egret	Decreasing
Bird	Colonial-nesting herons	Great egret	Unknown
Bird	Common loon	Common loon	Increasing
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	Louisiana waterthrush	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	Forest breeding raptors	Cooper's hawk	Stable
Bird	Forest breeding raptors	Golden eagle	Decreasing
Bird	Forest breeding raptors	Long-eared owl	Unknown
Bird	Forest breeding raptors	Northern goshawk	Increasing
Bird	Forest breeding raptors	Red-shouldered hawk	Increasing
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	Pied-billed grebe	Decreasing
Bird	Grassland birds	Bobolink	Decreasing
Bird	Grassland birds	Eastern meadowlark	Decreasing
Bird	Grassland birds	Grasshopper 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	High Altitude Conifer Forest Birds	Bicknell's thrush	Unknown
Bird	Osprey	Osprey	Stable
Bird	Peregrine falcon	Peregrine falcon	Increasing
Freshwater fish	Blackchin shiner	Blackchin shiner	Unknown
Freshwater fish	Brook trout, Heritage strains	Brook trout, Heritage strains	Unknown
Freshwater fish	Eastern sand darter	Eastern sand darter	Increasing
Freshwater fish	Lake sturgeon	Lake sturgeon	Increasing
Freshwater fish	Mooneye	Mooneye	Unknown
Freshwater fish	Round whitefish	Round whitefish	Decreasing
Freshwater fish	Sauger	Sauger	Decreasing
Herpetofauna	Freshwater wetland amphibians	Four-toed salamander	Unknown
Herpetofauna	Freshwater wetland amphibians	Western chorus frog	Decreasing
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	Lizards	Common five-lined skink	Unknown
Herpetofauna	Mudpuppy	Common mudpuppy	Decreasing

Lake Champlain Table 2. (continued)

TaxaGroup	Species	SpeciesGroup	Stability
Herpetofauna	Snapping Turtle	Snapping turtle	Unknown
Herpetofauna	Uncommon turtles of wetlands	Spotted turtle	Decreasing
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	Odonates of rivers/streams	American rubyspot	Unknown
Insect	Odonates of rivers/streams	Arrow clubtail	Unknown
Insect	Odonates of rivers/streams	Boreal snaketail	Unknown
Insect	Odonates of rivers/streams	Brook snaketail	Unknown
Insect	Odonates of rivers/streams	Rapids clubtail	Unknown
Insect	Other butterflies	Jutta arctic	Unknown
Insect	Other butterflies	Mottled duskywing	Decreasing
Insect	Other butterflies	Persius duskywing	Unknown
Insect	Other butterflies	Silvery blue	Decreasing
Insect	Other butterflies	Tawny crescent	Decreasing
Insect	Other moths	<i>Agrotis obliqua</i>	Stable
Insect	Other moths	<i>Anomogyna rhaetica</i>	Unknown
Insect	Other moths	Maroonwing	Stable
Insect	Other moths	Acadian swordgrass	Unknown
Insect	Other moths	<i>Lithophane lepida lepida</i>	Unknown
Insect	Riparian tiger beetles	<i>Cicindela ancocisconensis</i>	Unknown
Insect	Stoneflies/Mayflies of lotic waters	<i>Heptagenia culacantha</i>	Unknown
Insect	Stoneflies/Mayflies of lotic waters	<i>Rhithrogena uhari</i>	Unknown
Mammal	Furbearers	American marten	Unknown
Mammal	Furbearers	River otter	Stable
Mammal	Indiana Bat	Indiana bat	Increasing
Mammal	Small-footed bat	Small-footed bat	Unknown
Mammal	Tree bats	Eastern red bat	Unknown
Mammal	Tree bats	Hoary bat	Unknown
Marine fish	American eel	American eel	Unknown
Mollusk	Freshwater bivalves	Black sandshell	Unknown
Mollusk	Freshwater bivalves	Kidneyshell	Unknown
Mollusk	Freshwater bivalves	Pink heelsplitter	Unknown
Mollusk	Freshwater bivalves	Pocketbook	Unknown

Lake Champlain Table 3. Lake Champlain 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	14	53	118	44.9
Bald Eagle		1		
Boreal Forest Birds		7	7	100.0
Breeding Waterfowl		3	4	75.0
Colonial-Nesting Herons		3	8	37.5
Common Loon		1		
Common Nighthawk		1		
Deciduous/Mixed Forest Breeding Birds		6	9	66.7
Early Successional Forest Breeding Birds		10	12	83.3
Forest Breeding Raptors		6	6	100.0
Freshwater Marsh Nesting Birds		3	6	50.0
Grassland Birds		9	11	81.8
High-Altitude Conifer Forest Birds		1	1	100.0
Osprey		1		
Peregrine Falcon		1		
FRESHWATER FISH	7	7	40	17.5
Blackchin Shiner		1		
Heritage-Strain Brook Trout		1		
Eastern Sand Darter		1		
Lake Sturgeon		1		
Mooneye		1		
Round Whitefish		1		
Sauger		1		
HERPETOFAUNA	8	17	44	38.6
Freshwater Wetland Amphibian		2	5	40.0
Lake/River Reptiles		4	5	80.0
Lizards		1	3	33.3
Mudpuppy		1		
Snapping Turtle		1		
Uncommon Turtles of Wetlands		2	5	40.0
Vernal Pool Salamanders		2	4	50.0
Woodland/Grassland Snakes		4	8	50.0
INSECT	5	18	197	9.1
Odonates of Rivers/Streams		5	19	26.3
Other Butterflies		5	18	27.8
Other Moths		5	92	5.4
Riparian Tiger Beetles		1	2	50.0
Stoneflies/Mayflies - Lotic		2	20	10.0
MAMMAL	4	6	21	28.6
Furbearers		2	2	100.0
Indiana Bat		1		
Small-footed Bat		1		
Tree Bats		2	3	66.7
MARINE FISH	1	1	51	2.0
American Eel		1		
MOLLUSK	1	4	59	6.8
Freshwater Bivalves		4	39	10.3
TOTAL	40	106	530	20.0
% of all spp groups statewide	31.3			

Lake Champlain Table 4. SGCN that historically occurred in the Lake Champlain Basin, but are now believed to be extirpated from the basin (n=21).

Taxa Group	Species Group	Species
Bird	Loggerhead Shrike	Loggerhead shrike
Freshwater fish	Extirpated Fishes	Atlantic salmon *
Freshwater fish	Iowa darter	Iowa darter
Herpetofauna	Uncommon turtles of wetlands	Bog turtle
Insect	Odonates of rivers/streams	Elusive clubtail
Insect	Odonates of rivers/streams	Russet-tipped clubtail
Insect	Odonates of seeps/rivulets	Tiger spiketail
Insect	Other moths	Bay underwing
Insect	Pine barrens tiger beetles	<i>Cicindela patruela</i>
Insect	Pine barrens tiger beetles	<i>Cicindela unipunctata</i>
Insect	Stoneflies/Mayflies of lotic waters	<i>Proclonus mendax</i>
Insect	Stoneflies/Mayflies of lotic waters	<i>Rhithrogena anomala</i>
Mammal	Extirpated large mammals	Canada lynx
Mammal	Extirpated large mammals	Eastern cougar
Mammal	Extirpated large mammals	Gray wolf
Mammal	Game species of concern	New England cottontail
Mammal	Tree bats	Silver-haired bat
Mollusk	Freshwater gastropods	Globe siltsnail
Mollusk	Freshwater gastropods	Lance aplesa
Mollusk	Freshwater gastropods	Mossy valvata
Mollusk	Freshwater gastropods	Spindle lymnaea

* Current management efforts are attempting to re-establishment them in Lake Champlain and tributaries where they were native.

Lake Champlain Table 5. Office of Parks, Recreation & Historic Preservation (OPRHP) land units (n=4) within the Lake Champlain Basin. All areas are within NYSDEC Region 5

Unit Name (DEC Region)	County	Acres
Point Au Roche State Park	Clinton	850
Cumberland Bay State Park	Clinton	294
Crab Island State Park	Clinton	42
Macomb Reservation State Park	Clinton	597

Lake Champlain Table 6. NYSDEC Wildlife Management Area (WMA) land units (n=9) within the Lake Champlain Basin. All areas are within NYSDEC Region 5.

Unit Name (DEC Region)	County	Acres
Ausable Marsh Wildlife Management Area	Clinton	576
Kings Bay Wildlife Management Area	Clinton	653
Lake Alice Wildlife Management Area	Clinton	1,468
Lewis Preserve Wildlife Management Area	Clinton	1,356
Montys Bay Wildlife Management Area	Clinton	216
Pauline Murdock Wildlife Management Area	Essex	68
Putts Creek Wildlife Management Area	Essex	114
Wickham Marsh Wildlife Management Area	Essex	862
East Bay Wildlife Management Area	Washington	38

Lake Champlain Table 7. NYSDEC State Forest, Wild Forest, Wilderness, Primitive Area, and Unique Area land units (n=31) within the Lake Champlain Basin. All areas are within NYSDEC Region 5. This list does not include 19 Intensive Use areas, many of which are smaller parcels within the public forests listed here.

Unit Name	County	Acres
Spring Brook State Forest	Clinton	991
Macomb State Forest	Clinton	1,081
Flat Rock State Forest	Clinton	1,978
Cadyville State Forest	Clinton	370
Valcour Island Primitive Area	Clinton	1,100
Dunkins Reserve State Forest	Clinton	167
Dannemora State Forest	Clinton	2,450
Terry Mountain State Forest	Clinton	4,887
Moon Pond State Forest	Clinton	914
Burnt Hill State Forest	Clinton	1,626
Garden Island Wild Forest	Clinton	1
Taylor Pond Wild Forest	Clinton/Essex	38,311
Wilmington Wild Forest	Clinton/Essex	17,623
Dix Mountain Wilderness	Essex	44,707
Giant Mountain Wilderness	Essex	23,150
Hammond Pond Wild Forest	Essex	38,174
Hurrican Mountain Primitive Area	Essex	13,768
Jay Mountain Wilderness	Essex	7,734
McKenzie Mountain Wilderness	Essex	37,323
Pharoah Lake Wilderness	Essex	44,534
Sentinel Range Wilderness	Essex	23,904
Split Rock Wild Forest	Essex	3,630
Bald Ledge Primitive Area	Essex	529
Hague Brook Primitive Area	Essex	211
Johns Brook Primitive Area	Essex	146
Schuyler Island Primitive Area	Essex	123
High Peaks Wilderness	Essex/Franklin	190,466
Saranac Lakes Wild Forest	Essex/Franklin	73,269
St. Regis State Forest	Franklin	17,599
Debar Mountain Wild Forest	Franklin	90,381
Lake George Wild Forest	Warren/Washington	60,545

Lake Champlain Table 8. Bird Conservation Areas (BCA) within the Lake Champlain Basin (n=2). 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	Acres	Description
Adirondack Sub-alpine Forest	Franklin/Clinton/Essex/Warren	69,000	<p>This BCA includes Adirondack Mountain summits above 2,800 feet in Clinton, Essex, Franklin, Hamilton and Warren counties. Surveyed and confirmed nesting locations for Bicknell's Thrush include: Mount Marcy, Algonquin Peak, Blue Mountain, Cascade Mountain, Giant Mountain, Kilburn Mountain, Hurricane Mountain, Lower Wolfjaw Mountain, Lyon Mountain, Mount Haystack, Phelps Mountain, Porter Mountain, Rocky Ridge Peak, Santanoni Peak, Snowy Mountain, Vanderwhacker Mountain, Wakely Mountain, Whiteface Mountain and Wright Peak. Critical habitats include dense subalpine coniferous thickets, and to a lesser degree, young or stunted and heavy second growth of cherry or birch.</p>
Lake Champlain Marshes	Clinton/Essex/Washington	2,800	<p>This BCA includes six Wildlife Management Areas (WMAs) along the western shore of Lake Champlain (Kings Bay, Montys Bay, Wickham Marsh, Ausable Marsh, Putts Creek, East Bay) from near the Canadian border to the southern tip of the lake. These WMAs all include shoreline wetland complexes. Most include large marshes, forested swamps, and shrub swamps; as well as some upland forests, grasslands, and shrublands. They provide habitat for a wide variety of bird species for breeding and during migration. They also provide important migration stopover areas for a tremendous diversity of water and land birds. Some species of interest include American bittern (special concern), least bittern (threatened), osprey (special concern), upland sandpiper (threatened), black tern (endangered), northern harrier (threatened), pied-billed grebe (threatened), short-eared owl (endangered), vesper sparrow (special concern), and grasshopper sparrow (special concern).</p>

Lake Champlain Table 9. Critical Environmental Areas (CEA) within the Lake Champlain Basin (n=4). 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. All areas are within NYSDEC Region 5.

Critical Environmental Area	Location	Reason for Designation
Rush Pond	Queensbury, Warren County	Unique pond & wetland of undisturbed beauty
Glen Lake	Queensbury, Warren County	Benefit to human health, natural setting
Round Pond	Queensbury, Warren County	Unique glacial kettle pond
Lake George	Lake George, Warren County	Protect the resources of the park

Lake Champlain Table 10. Critical **aquatic** habitats found in the Lake Champlain 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
Riverine	coldwater stream	17
Palustrine	mineral soil wetland	18
Riverine	warmwater stream	14
Lacustrine	warm water shallow	12
Lacustrine	cold water deep	9
Riverine	deep water river	7
Lacustrine	cold water shallow	6
Riverine	coastal plain stream	4
Palustrine	peatlands	4
Lacustrine	warm water deep	4
Lacustrine	unknown	3
Riverine	warm water deep	1
Riverine	cold water deep	1
Riverine	unknown	1
Palustrine	unknown	1
Lacustrine	coastal plain	1
Palustrine	warm water stream	1

Lake Champlain Table 11. Critical **terrestrial** habitats found in the Lake Champlain 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	forested	45
Terrestrial	open upland	41
Terrestrial	barrens/woodlands	14
Terrestrial	alpine/mountain	6
Subterranean	natural/cultural	1

Lake Champlain Table 12. Summary of threats, number of (and percent of all) species groups affected, and percentage of all threats for SGCN in the Lake Champlain 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 conversion (e.g., development)	27	67.5	10.7
Contaminants	18	45.0	7.1
Human Disturbance - illegal/unregulated harvest	15	37.5	6.0
Degradation of Water Quality	14	35.0	5.6
Disrupted Predator/Prey Cycles	14	35.0	5.6
Human Disturbance - collisions	13	32.5	5.2
Interspecific Competition for Resources	12	30.0	4.8
Disease	11	27.5	4.4
Fragmentation	11	27.5	4.4
Barriers to Movement in Aquatic Habitats (e.g., dams, weirs, culverts)	10	25.0	4.0
Habitat Loss - natural (e.g., succession)	9	22.5	3.6
Insensitive/Unsustainable Agricultural/Silvicultural Practices	8	20.0	3.2
Human Disturbance - general	7	17.5	2.8
Active Alteration/Suppression of Natural Processes (e.g., fire)	7	17.5	2.8
Competition from Invasive Exotic Species	6	15.0	2.4
Habitat Composition Altered by Terrestrial Invasive Species	5	12.5	2.0
Sedimentation/Erosion (impacts on aquatic habitats)	5	12.5	2.0
Loss of Streamside Buffers	4	10.0	1.6
Pollution (e.g., acid rain, soil contamination)	4	10.0	1.6
Altered Hydrology (water level management/extraction)	4	10.0	1.6
Reduction of Patch Size/Shape/Area	4	10.0	1.6
Loss of Connectivity/Metapopulation Dynamics	4	10.0	1.6
Human Disturbance - entanglement, entrainment, impingement	4	10.0	1.6
Detrimental Hybridization	4	10.0	1.6
Susceptibility to Stochastic Events (isolated populations)	4	10.0	1.6
Climate Change (change in species range, distb'n, migration)	4	10.0	1.6
Unknown Threats	4	10.0	1.6
Habitat Composition Altered by Aquatic Invasive Species	3	7.5	1.2
Susceptibility to Stochastic Events (storms)	3	7.5	1.2
Barriers to Movement in Terrestrial Habitats (roads, powerlines)	2	5.0	0.8
Terrestrial Habitat Composition Altered by Overuse (e.g., deer)	2	5.0	0.8
Loss of Host Species	2	5.0	0.8
Parasites	2	5.0	0.8
Susceptibility to Stochastic Events (rare species)	2	5.0	0.8
Aquatic Habitat Composition Altered by Overuse (e.g., swans, muskrat)	1	2.5	0.4
Negative Edge Effects (i.e., increased predation, "ecological traps")	1	2.5	0.4
Climate Change (change in water level, temperature)	1	2.5	0.4
Impacts of Erosion on Terrestrial Habitats	1	2.5	0.4

Lake Champlain Table 13. Approved State Wildlife Grant studies relevant to the Lake Champlain 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 & Coordination		
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' unawareness 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 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.
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: Assessment 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.
Mammal Conservation		
Job 7: Determining Winter Roost Selection of <i>M. leibii</i> and summer destination of hibernating <i>M. sodalis</i> and <i>M. leibii</i>	Essex County	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.

Lake Champlain Table 13. (continued)

State Wildlife Grant Study	Location	Description
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.
Job 25: Spiny Softshell Turtle Survey and Life History Studies	DEC Regions 5, 7, 8, 9	Spiny softshells have experienced declines due to habitat loss and fragmentation, and unregulated/illegal collection. Assess the status and distribution of spiny softshells in the Allegheny River, Finger Lakes, southern shoreline of Lake Ontario, Lake Champlain, and adjacent waterways. Monitor the movements and seasonal habitat use in locations where this species is identified. Quantify habitat, environmental parameters, and land uses associated with nesting and overwintering areas and seasonal activity centers.
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.
Job 27: Tiger Beetle Inventory	Statewide	There are 26 species or subspecies of tiger beetle reported from New York State. Of the 26 species, nine are considered globally rare or rare in New York State, while another five are thought to be uncommon in the state (Gordon 1939, New York Natural Heritage Program 2004.) Nearly all of the species of concern are found in habitats that have been heavily impacted by development or other deleterious factors. DEC will conduct status assessments for nine species (including one subspecies) of tiger beetles in New York State that will clarify the need for conservation actions in order to maintain these species.
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:
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Lake Champlain Table 14. Existing management plans and agreements within the Lake Champlain 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
Lake George - Planning for the Future - Draft Plan for Public Review and Comment (2001)	Lake George Planning for the Future Committee, Lake George Watershed Conference	Water quality issues; water quality management
Opportunities for Action: An Evolving Plan for the Future of the Lake Champlain Basin (1993, 1996, 2003)	Lake Champlain Basin Program	Water quality; natural resources; recreation; implementation; economics
Lake Champlain Research Consortium: Five Year Research Priorities	Lake Champlain Research Consortium	Research needs, interdisciplinary research
Lake Champlain Watershed General Management Plan (2004)	U.S. Army Corps of Engineers, Lake Champlain Basin Program	Overview, threats to the watershed, goals for conservation, monitoring programs
Lake Champlain Wetlands Acquisition Strategy (1997)	Vermont Nature Conservancy, Lake Champlain Basin Program, NYSDEC, Vermont DEC, Vermont Fish and Wildlife, Adirondack Nature Conservancy, E. NY Nature Conservancy	Four-phase wetlands acquisition strategy, acquisition objectives
Lake Champlain Basin Aquatic Nuisance Species Management Plan (2000)	Lake Champlain Basin Program, Vermont DEC, NYSDEC	Scope of aquatic nuisance problem, goals, management strategies and priorities, coordinated aquatic nuisance species management efforts
Lake Champlain 2003 Zebra Mussel Monitoring Program Final Report (2004)	Lake Champlain Basin Program, Vermont DEC	Goals and objectives, sampling methods, results of sampling, recommendations for future monitoring efforts
St. Lawrence-Champlain Valley Ecoregion Biodiversity Conservation Plan (2002)	The Nature Conservancy	Vision, ecological description, threats assessment, issues and information needs
Strategic Plan: Upper Champlain Valley Program (2003)	Adirondack Nature Conservancy, Adirondack Land Trust	High priority habitats, conservation recommendations
Final Supplemental Environmental Impact Statement: A Long-term Program of Sea Lamprey Control in Lake Champlain (2001)	U.S. Fish & Wildlife Service, Vermont Department of Fish & Wildlife, NYSDEC	History of sea lamprey control, evaluation of action alternatives, selection of an alternative and justification
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	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
Chazy Highland Unit (Draft) Debar Mountain Wild Forest (Draft) Dix Mountain Wilderness (Draft) Giant Mountain Wilderness (Draft) High Peaks Wilderness (1999) Lake George Wild Forest (Draft) Pharoah Lake Wilderness (1992) Saranac Lakes Wild Forest (Draft) Sentinel Range Wilderness (Draft) Split Rock Wild Forest (Draft) St. Regis State Forest (Draft) Wilmington Wild Forest (Draft)		
Bird Conservation Area Management Guidance Summaries	NYSDEC	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.
Adirondack Sub-alpine Forest Lake Champlain Marshes		
Wildlife Management Area Plans	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
Kings Bay (1969) Lake Alice (1975) Pauline Murdock (1974) Wickham Marsh (1971)		