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APPENDIX A

SUBJECT INDEX- CZMC ANNUAL REPORTS

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AR 2 - Second Annual Report	Oct. 1987 thru Sept. 1988
AR 3 - Third Annual Report	Oct. 1988 thru Sept. 1989
AR 4 - Fourth Annual Report	Oct. 1989 thru Sept. 1990
AR 5 - Fifth Annual Report	Oct. 1990 thru Sept. 1991
AR 6 - Sixth Annual Report	Oct. 1991 thru Sept. 1992

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APPENDIX B

INVENTORY OF BIRD SPECIES IN 3 FISH AND WILDLIFE HABITATS

KEY:

- P = Premium River-Pine Brook Wetlands Complex and adjacent lands
 H = Hommocks Marsh Complex
 R = Reservoir-Sheldrake-Leatherstocking Complex
 * = Occasional or rare
 E = NY State DEC list (1983) **ENDANGERED SPECIES**
 S = **SPECIES OF SPECIAL CONCERN**
 T = **THREATENED SPECIES**
 V = **VULNERABLE SPECIES**
 e, s, t = **NY State DEC list (1987)**

GAVIIFORMES

S Common Loon *Gavia immer* P H

PODICIPEDIFORMES

Horned Grebe *Colymbus auritus* P H
 Pied-billed Grebe *Podilymbus podiceps* P R

PELECANIFORMES

Double-crested Cormorant *Phalacrocorax auritus* H R

CICONIIFORMES

Great Blue Heron *Ardea herodias* P H R
 Little Blue Heron *Florida caerulea* P
 Louisiana Heron *Hydranassa tricolor* P
 Great Egret *Casmerodius albus* P H R
 Snowy Egret *Egretta thula* P H R
 Cattle Egret *Bubulcus ibis* P
 Black-crowned Night Her. *Nycticorax nycticorax* P H R
 Yellow-crowned NightHer. *Nyctanassa violacea* P
 Green Heron *Butorides striatus* P H R
 Ss Least Bittern *Ixobrychus exilis* P
 American Bittern *Botaurus lentiginosus* P H
 Glossy Ibis *Plegadis falcinellus* P H

ANSERIFORMES

Mute Swan *Cygnus olor* P H R
 Snow Goose *Chen hyperborea* P R
 Canada Goose *Branta canadensis* P H R
 Brant *B. bernicla* P
 Amer. Black Duck *Anas rubripes* P H R
 Gadwall *A. strepera* P
 Mallard *A. platyrhynchos* P H R
 Common Pintail *A. acuta* P R
 American Widgeon *A. americana* P R
 Eurasian Widgeon *A. penelope* P
 Wood Duck *Aix sponsa* P R

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Northern Shoveler	<i>Anas clypeata</i>	P		R
Blue-winged Teal	<i>A. discors</i>	P		R
Green-winged Teal	<i>A. crecca</i>			R
Oldsquaw	<i>Clangula hyemalis</i>	P		
Canvasback	<i>Aythya valisineria</i>	P		
Redhead	<i>A. americana</i>	P		
Ring-necked Duck	<i>A. collaris</i>			R
Lesser Scaup	<i>A. affinis</i>	P		
Greater Scaup	<i>A. marila</i>	P		R*
Common Goldeneye	<i>Bucephala clangula</i>	P		
Bufflehead	<i>B. albeola</i>	P		R
Ruddy Duck	<i>Oxyura jamaicensis</i>	P		R
Common Merganser	<i>Mergus merganser</i>	P		R
Red-breasted Merganser	<i>M. serrator</i>	P		R
Hooded Merganser	<i>Lophodytes cucullatus</i>	P		R
<u>FALCONIFORMES</u>				
Sharp-shinned Hawk	<i>Accipiter striatus</i>	P	H	R
s Cooper's Hawk	<i>A. cooperii</i>	P		R
Northern Goshawk	<i>A. gentilis</i>	P		
Tt Northern Harrier	<i>Circus cyaneus</i>	P	H	R
Red-tailed Hawk	<i>Buteo jamaicensis</i>	P	H	R
Tt Red-shouldered Hawk	<i>B. lineatus</i>	P*		R*
Broad-winged Hawk	<i>B. platypterus</i>			R*
e Golden Eagle	<i>Aquila chrysaetos</i>			R*
Tt Osprey	<i>Pandion haliaetus</i>	P	H	R
Turkey Vulture	<i>Cathartes aura</i>	P		R
American Kestrel	<i>Falco sparverius</i>	P	H	R
Merlin	<i>F. columbarius</i>	P*	H	
<u>GALLIFORMES</u>				
Ruffed Grouse	<i>Bonasa umbellus</i>	P*		
Ring-necked Pheasant	<i>Phasianus colchicus</i>	P	H	R
<u>GRUIFORMES</u>				
American Coot	<i>Fulca americana</i>	P	H	R
Virginia Rail	<i>Rallus limicola</i>	P*		
Clapper Rail	<i>R. longirostris</i>	P*		
Sora Rail	<i>Porzana carolina</i>	P		R
<u>CHARADRIIFORMES</u>				
Semipalmated Plover	<i>Charadrius semipalmatus</i>	P	H	
Killdeer	<i>C. vociferous</i>	P	H	R
American Woodcock	<i>Philohela minor</i>	P		
Greater Yellowlegs	<i>Tringa melanoleuca</i>	P	H	R
Lesser Yellowlegs	<i>T. flavipes</i>	P	H	R
Solitary Sandpiper	<i>T. solitaria</i>	P*		R

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Sanderling	<i>Calidris alba</i>	P*		
Pectoral Sandpiper	<i>C. melantos</i>	P		
Dunlin	<i>C. alpina</i>	P*		
Spotted Sandpiper	<i>Actitis macularia</i>	P	H	R
Least Sandpiper	<i>Calidris minutilla</i>	P		
Semipalmated Sandpiper	<i>C. pusilla</i>	P		
White-rumped Sandpiper	<i>C. fuscicollis</i>	P		
Herring Gull	<i>Larus argentatus</i>	P	H	R
Ring-billed Gull	<i>L. delawarensis</i>	P	H	R
Great Black-backed Gull	<i>L. marinus</i>	P		
Laughing Gull	<i>L. atricilla</i>	P	H	R
Bonaparte's Gull	<i>L. philadelphia</i>	P		
Ee Little (Least) Tern	<i>Sterna albifrons</i>	P		
Tt Common Tern	<i>S. hirundo</i>	P	H	
Black Skimmer	<i>Rynchops niger</i>	P*		
<u>COLUMBIFORMES</u>				
Mourning Dove	<i>Zenaida macroura</i>	P	H	R
Rock Dove	<i>Columba livia</i>	P	H	R
<u>CUCULIFORMES</u>				
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>			R*
Black-billed Cuckoo	<i>C. erythrophthalmus</i>			R*
<u>STRIGIFORMES</u>				
Common Screech Owl	<i>Otus asio</i>	P		R
Great Horned Owl	<i>Bubo virginianus</i>	P		R
Ss Barn Owl	<i>Tyto alba</i>	P		
Snowy Owl	<i>Nyctea scandiaca</i>	P*		
<u>CAPRIMULGIFORMES</u>				
Ss Common Nighthawk	<i>Chordeiles minor</i>	P	H	R
<u>APODIFORMES</u>				
Chimney Swift	<i>Chaetura pelagica</i>			R
V Ruby-throated Hummbrd.	<i>Archilochus colubris</i>	P		R
<u>CORACIIFORMES</u>				
Belted Kingfisher	<i>Megaceryle alcyon</i>	P	H	R
<u>PICIFORMES</u>				
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	P		R*
Pileated Woodpecker	<i>Dryocopus pileatus</i>	P*		R
Common Flicker	<i>Colaptes auratus</i>	P	H	R
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	P		R
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	P		R

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Downy Woodpecker	<i>Picoides pubescens</i>	P	H	R
V Hairy Woodpecker	<i>P. villosus</i>	P		R
<u>PASSERIFORMES</u>				
Tyrannidae-Flycatchers				
Eastern Kingbird	<i>Tyrannus tyrannus</i>	P		R
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	P		R
Ash-throated Flycatcher	<i>M. cinerascens</i>	P*		
Eastern Phoebe	<i>Sayornis phoebe</i>	P	H	R
Eastern Pewee	<i>Contopus virens</i>	P		R
Acadian Flycatcher	<i>Empidonax virescens</i>	P		
Yellow-bellied Flycatcher	<i>E. flairventris</i>	P		R
Least Flycatcher	<i>E. minimus</i>			R
Hirundinidae-Swallows				
Cliff Swallow	<i>Petrochelidon pyrrhonata</i>	P*		
Barn Swallow	<i>Hirundo rustica</i>	P	H	R
Tree Swallow	<i>Iridoprocne bicolor</i>	P	H	R
Rough-winged Swallow	<i>Stelgidopteryx ruficollis</i>	P		R
Bank Swallow	<i>Riparia riparia</i>	P		R
Corvidae-Jays, Crows				
Fish Crow	<i>Corvus ossifragus</i>	P	H	
American (Common) Crow	<i>C. brachyrhynchus</i>	P	H	R
Blue Jay	<i>Cyanocitta cristat</i>	P	H	R
Paridae- Titmice				
Black-capped Chickadee	<i>Parus atricapillus</i>	P	H	R
Tufted Titmouse	<i>P. bicolor</i>	P	H	R
Sittidae-Nuthatches				
White-breasted Nuthatch	<i>Sitta carolinensis</i>	P	H	R
Red-breasted Nuthatch	<i>S. canadensis</i>	P		R
Certhiidae-Creepers				
Brown Creeper	<i>Certhia familiaris</i>	P		R
Troglodytidae- Wrens				
House Wren	<i>Troglodytes aedon</i>	P	H	R
Winter Wren	<i>T. troglodytes</i>	P		R
Carolina Wren	<i>Thryothorus ludovicianus</i>	P	H	R
Marsh Wren	<i>Cistothorus palustris</i>	P		
Sedge Wren	<i>C. platensis</i>	P		
Mimidae-Mimic Thrushes				
Brown Thrasher	<i>Toxostoma rufum</i>	P	H	R

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Gray Catbird	<i>Dumetella carolinensis</i>	P	H	R
Northern Mockingbird	<i>Mimus polyglottos</i>	P	H	R
Turdidae-Thrushes				
Ss Eastern Bluebird	<i>Sialia sialis</i>	P	H*	
American Robin	<i>Turdus migratorius</i>	P	H	R
Gray-Cheeked Thrush	<i>Catharus minimus</i>		H	R
Swainson's Thrush	<i>C. ustulatus</i>	P	H	R
Hermit Thrush	<i>C. guttatus</i>	P		R
Veery	<i>C. fuscescens</i>	P		R
Wood Thrush	<i>Hylocichla mustelina</i>	P	H	R
Fieldfare	<i>Turdus pilaris</i>	P*		
Sylviidae - Kinglets, Gnatcatchers:				
Ruby-crowned Kinglet	<i>Regulus calendula</i>	P	H	R
Golden-crowned Kinglet	<i>R. satrapa</i>	P	H	R
Blue-gray Gnatcatcher	<i>Poliopitila caerulea</i>	P		R
Motacillidae - Pipets etc.:				
Water (American) Pipet	<i>Anthus spinoletta</i>	P*		
Bombycillidae - Waxwings:				
Cedar Waxwing	<i>Bombycilla cedrorum</i>	P	H	R
Sturnidae - Starlings:				
European Starling	<i>Sturnus vulgaris</i>	P	H	R
Vireonidae-Vireos				
Red-eyed Vireo	<i>Vireo olivaceus</i>	P	H	R
Warbling Vireo	<i>V. altiloquus</i>			R
Yellow-throated Vireo	<i>V. flavifrons</i>			R
Solitary Vireo	<i>V. solitarius</i>			R
Parulidae - Wood Warblers:				
Northern Parula Warbler	<i>Parula americana</i>	P	H	R
Black-throated Green War.	<i>Dendroica virens</i>	P	H	R
Black & White Warbler	<i>Mniotilta varia</i>	P	H	R
Blackpoll Warbler	<i>Dendroica striata</i>			R
Black-throated Blue War.	<i>D. caerulescens</i>	P	H	R
Magnolia Warbler	<i>D. magnolia</i>	P	H	R
Yellow-rumped Warbler	<i>D. coronata</i>	P	H	R
Canada Warbler	<i>Wilsonia canadensis</i>	P		R
Cape May Warbler	<i>Dendroica tigrina</i>	P		
Chestnut-sided Warbler	<i>D. pensylvanica</i>	P	H	R
Blackburnian Warbler	<i>D. fusca</i>	P		R
American Redstart	<i>Setophaga ruticilla</i>	P	H	R
Prairie Warbler	<i>Dendroica discolor</i>	P		R

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	Palm Warbler	<i>Dendroica palmarum</i>	P		R
	Blue-winged Warbler	<i>Vermivora pinus</i>	P	H	R
V	Yellow Warbler	<i>Dendroica petechia</i>	P	H	R
	Worm-eating Warbler	<i>Helmitheros vermivorus</i>	P		R
	Tennessee Warbler	<i>Vermivora peregrina</i>	P		R
S	Wilson's Warbler	<i>Wilsonia pusilla</i>	P	H	R
	Nashville Warbler	<i>Vermivora ruficapilla</i>	P		
	Mourning Warbler	<i>Oporornis philadelphia</i>	P		
	Common Yellowthroat	<i>Geothlypis trichas</i>	P	H	R
	Yellow-breasted Chat	<i>Icteria verens</i>	P		
	Northern Waterthrush	<i>Seiurus noveboracensis</i>	P		
	Louisiana Waterthrush	<i>S. motacilla</i>	P		R
	Ovenbird	<i>S. aurocapillus</i>	P		R
Ploceidae - Weaver Finches:					
	House Sparrow	<i>Passer domesticus</i>	P	H	R
Icteridae - Blackbirds, Orioles:					
	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	P	H	R
	Brown-headed Cowbird	<i>Molothrus ater</i>	P	H	R
	Rusty Blackbird	<i>Euphagus carolinus</i>	P		R
	Common Grackle	<i>Quiscalus guiscula</i>	P	H	R
	Bobolink	<i>Dolichonyx oryzivorus</i>	P	H	
V	Eastern Meadowlark	<i>Sturnella magna</i>	P	H	
	Orchard Oriole	<i>Icterus spurius</i>	P		R
	Northern Oriole-Baltimore	<i>I. galbula</i>	P	H	R
Thraupidae - Tanagers:					
	Scarlet Tanager	<i>Piranga olivacea</i>	P		R
Fringillidae - Finches, Sparrows:					
	Northern Junco	<i>Junco hyemalis</i>	P	H	R
	Snow Bunting	<i>Plectrophenax nivalis</i>	P		
	Northern Cardinal	<i>Cardinalis cardinalis</i>	P	H	R
	House Finch	<i>Carpodacus mexicanus</i>	P	H	R
	Purple Finch	<i>C. purpureus</i>	P		R
	Evening Grosbeak	<i>Hesperiphona vespertina</i>	P		R
	American Goldfinch	<i>Carduelis tristis</i>	P	H	R
	Pine Siskin	<i>C. pinus</i>	P		R
	Indigo Bunting	<i>Passerina cyanea</i>	P	H	R
	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	P		R
	Rufous-sided Towhee	<i>Pipilo erythrophthalmus</i>	P	H	R
	White-throated Sparrow	<i>Zonotrichia albicollis</i>	P	H	R
	White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	P	R	
	Chipping Sparrow	<i>Spizella passerina</i>	P	H	R
	Field Sparrow	<i>S. pusilla</i>	P		R
	Swamp Sparrow	<i>Melospiza georgiana</i>	P		

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American Tree Sparrow	<i>Spizella arborea</i>	P	R
s Grasshopper Sparrow	<i>Ammodramus savannarum</i>	P	
Fox Sparrow	<i>Passerella iliaca</i>	P	H R
Song Sparrow	<i>Melospiza melodia</i>	P	H R
Ss Vesper Sparrow	<i>Pooecetes gramineus</i>	P	
Savannah Sparrow	<i>Passerculus sandwichensis</i>	P	

Sources: PREMIUM COMPLEX LWRP 1986, 6 bird lists (1967 thru 1990), Consultant 1992-1993.

HOMMOCKS COMPLEX LWRP 1986 list, Walk Book (1979), Consultant 1993.

RESERVOIR COMPLEX LWRP 1986 list, 2 Walk Books (1984 and 1986), Bird Lists 1970-1991, Consultant 1992.

APPENDIX B

BIOLOGICAL INVENTORY FOR 3 FISH AND WILDLIFE HABITATS

KEY:

- P = Premium River-Pine Brook Wetlands Complex and adjacent lands
 H = Hommocks Marsh Complex
 R = Reservoir-Sheldrake-Leatherstocking Complex

MAMMALS

Little Brown Bat	<i>Myotis lucifugus lucifugus</i>			R
Eastern Chipmunk	<i>Tamias striatus</i>	P	H	R
White-tailed Deer	<i>Odocoileus virginianus</i>	P	H	R
Red Fox	<i>Vulpes fulva</i>			R
Common Eastern Mole	<i>Scalopus aquaticus</i>	P	H	R
White-footed (Deer) Mouse	<i>Peromyscus leucopus</i>	P	H	R
Muskrat	<i>Ondatra zibethicus</i>	P	H	R
Opossum	<i>Didelphis marsupialis</i>	P	H	R
	<i>D. virginiana</i>			R
Eastern Cottontail Rabbit	<i>Sylvilagus floridanus</i>		H	R
Raccoon	<i>Procyon lotor</i>	P	H	R
Brown (Norway) Rat	<i>Rattus norvegicus</i>		H	R
Short-tailed Shrew	<i>Blarina brevicauda</i>		H	R
Striped Skunk	<i>Mephitis monax</i>	P	H	R
Eastern Gray Squirrel,	<i>Sciurus carolinensis</i>	P	H	R
Black Squirrel	<i>S. niger</i>	P	H	R
North American Field Vole	<i>Microtus pennsylvanicus</i>	P	H	R
Woodchuck	<i>Marmota monax</i>		H	R

REPTILES

Red Salamander	<i>Plethodon cinereus cinereus</i>			R
Black Rat Snake	<i>Elaphe obsoleta obsoleta</i>			R
Eastern Milk Snake	<i>Lampropeltis triangulum</i> <i>triangulum</i>			R
Smooth Green Snake	<i>Opheodrys vernalis</i>			R
Northern Diamondback Terrapin	<i>Malaclemys terrapin</i>		H	
Box Turtle	<i>Terrapene carolina</i>			R
Painted Turtle	<i>Chrysemis picta picta</i>			R
Snapping Turtle	<i>Chelydra serpentina</i>			R
s Spotted Turtle	<i>Clemmys guttata</i>			R

AMPHIBIANS

Red Eff	<i>Diemictylus virideseens</i>			R
Bull Frog	<i>Rana catesheiano</i>	P	H	R
Green Frog	<i>R. clamitans</i>	P	H	R
Pickerel Frog	<i>R. palustris</i>			R
Northern Leopard Frog	<i>R. pipiens</i>			R
Wood Frog	<i>R. sylvatica</i>			R
Spring Peeper	<i>Hyla crucifer</i>			R

APPENDIX B

BIOLOGICAL INVENTORY FOR 3 FISH AND WILDLIFE HABITATS

AMPHIBIANS- cont.

Gray Tree Frog	<i>Hyla versicolor</i>			R
Spotted Salamander	<i>Ambystoma maculatum</i>			R
Red-Backed Salamander	<i>Plethodon cinereus cinereus</i>			R
Lead-Backed Salamander	<i>P. cinereus cinereus</i>			R
Red-Spotted Newt	<i>Notophthalmus viridescens</i>			R
American Toad	<i>Bufo americanus</i>	P	H	R

INSECTS

Damselfly		P	H	R
Dragonfly		P	H	R
Praying Mantis		P	H	R
Common Blue	<i>Icaricia icarioides</i>			R
Small White Cabbage	<i>Artogeia rapae</i>			R
Mourning Cloak	<i>Nymphalis antiopa</i>			R
Monarch Butterfly	<i>Danaus plexippus</i>			R
Spicebush Swallowtail	<i>Pterourus troilus</i>			R
Tiger Swallowtail	<i>P. glaucus</i>			R
Common Sulphur	<i>Colias philodice</i>			R
Viceroy	<i>Basilarchia archippus</i>			R

APPENDIX B

BIOLOGICAL INVENTORY FOR 3 FISH AND WILDLIFE HABITATS

AQUATIC SPECIES

Marsh Snail		P	H	
Mud Snail		P	H	
Fiddler Crab	Uca spp.	P	H	
Marsh Crab		P	H	
Horseshoe Crab	Limulus polyphemus	P	H	
Ribbed Mussel	Geukensia demissa	P	H	
Naiad (freshwater mussel)	Unio spp.			R

FISH

Alewives	Alosa pseudoharengus	P	H	
Large-mouth Bass	Micropterus salmoides			R
Striped Bass	Morone saxatilis	P	H	
Bluefish	Pomatomus saltatrix	P	H	
Carp	Cyprinus carpio			R
Brown Bullhead Catfish	Ictalurus nebulosus			R
American Eel	Anguilla rostrata	P	H	R
Flounder, winter	Pseudopleuronectes americanus	P	H	
Goldfish	Carassius auratus			R
Killifish	Fundulus spp.	P	H	
Mackerel	Scomber scombrus	P	H	
Menhaden	Brevoortia tyrannus	P	H	
Yellow Perch	Perca flavescens			R
Porgy		P	H	
Shiner	Notropis cornutus			R
Silversides	Menidia spp.	P	H	
Sunfish	Centrarchidae family			R
Tautog (Blackfish)	Tautoga onitis	P	H	

Note: Other important coastal species are found along the rocky shores, tidepools, beaches and harbors of Larchmont, as follows:

Redbeard Sponge	Mussels: Blue, Ribbed
Deadman's fingers	Atlantic Bay Scallop
Jellyfish: Comb, Moon	Jingle Shell
Sea Anemones	Eastern Oyster
Worms: Ribbon, sand, sea	Cockle
Starfish, Sea Star	Clams: Northern Quahog,
	Softshell, Razor
Sandhoppers: Amphipods	Shipworm
Barnacles: Rock	Sea Snails: Limpet, Moon
Shrimp: Mantid, Brine	Slipper Periwinkle: Smooth,
	rough, common
American Lobster	Mud Snail
Crabs: Hermit, Blue, Green,	Atlantic oysterdrill
Rock, Calico, Fiddler	Whelk: Knobbed, Channeled

APPENDIX C

BOTANICAL INVENTORY- RESERVOIR-SHELDRAKE-LEATHERSTOCKING COMPLEX

TREES

Ailanthus (Tree of Heaven)	Ailanthus altissima
Alder, Smooth	<i>Alnus serrulata</i>
Alder, Speckled	<i>A. rugosa</i>
Apple	<i>Malus pumila</i>
Ash, Mountain	<i>Sorbus americana</i>
Ash, White	<i>Fraxinus americana</i>
Basswood, American (Linden)	<i>Tilia americana</i>
Beech, American	<i>Fagus grandifolia</i>
Birch, Black	<i>Betula lenta</i>
Birch, Gray	<i>B. populifolia</i>
Birch, White	<i>B. papyrifera</i>
Cedar, Northern White	<i>Thuja occidentalis</i>
Cedar, Eastern Red	<i>Juniperus virginiana</i>
Cherry, Black	<i>Prunus serotina</i>
Chestnut, American	<i>Castanea dentata</i>
Cottonwood, Eastern	<i>Populus deltoides</i>
Elm, American	<i>Ulmus americana</i>
Hawthorne, spp.	<i>Craetegus</i> spp.
Hemlock, Eastern	<i>Tsuga canadensis</i>
Hickory, Butternut	<i>Carya cordiformis</i>
Hickory, Pignut	<i>C. glabra</i>
Hickory, Shagbark	<i>C. ovata</i>
Hornbeam, American	<i>Carpinus caroliniana</i>
Larch (Tamarack)	<i>Larix laricina</i>
Locust, Black	<i>Robinia pseudoacacia</i>
Locust, Honey	<i>Gleditsia triacanthos</i>
Magnolia, Cucumber	<i>Magnolia acuminata</i>
Maple, Ash-leaved (Box elder)	<i>Acer negundo</i>
Maple, Norway	<i>A. platanoides</i>
Maple, Red	<i>A. rubrum</i>
Maple, Sugar (Silver)	<i>A. saccharum</i>
Mulberry, Red	<i>Morus rubra</i>
Oak, Black	<i>Quercus velutina</i>
Oak, Pin	<i>Q. palustris</i>
Oak, Red	<i>Q. rubra (borealis)</i>
Oak, Scrub	<i>Q. ilicifolia</i>
Oak, Swamp	<i>Q. bicolor</i>
Oak, White	<i>Q. alba</i>
Pine, Austrian	<i>Pinus nigra</i>
Pine, Eastern white	<i>P. strobus</i>
Sassafras	<i>Sassafras albidum</i>
Shadbush	<i>Amelanchier canadensis</i>
Spruce, Norway	<i>Picea abies</i>
Sweetgum	<i>Liquidambar stypaciflua</i>
Sycamore, American	<i>Platanus occidentalis</i>
Tulip tree (Yellow poplar)	<i>Liriodendron tulipifera</i>

APPENDIX C

BOTANICAL INVENTORY- RESERVOIR-SHELDRAKE-LEATHERSTOCKING COMPLEX

TREES- cont.

Tupelo, Black
Weeping Willow
Witchhazel

Nyssa sylvatica
Salix badylonica
Hamamelis virginiana

SHRUBS

Arrow-wood
Barberry, Japanese
Bayberry
Bladdernut
Blueberry, Low
Blueberry, Low Bush
Blueberry, High Bush
Burning Bush
Brambles
Cranberry, High Bush
Current/Gooseberry
Forsythia spp.
Honeysuckle, Japanese
Knotweed, Japanese
Pepperbush, Sweet or Coast
Rhododendron spp.
Rose, Multiflora
Sassafras
Spicebush
Sumac, Smooth
Sumac, Winged
Poison Ivy
Viburnum, Maple-Leaf
Witch Hazel
Yew, American

Viburnum recognitum
Berberis thunbergii
Myrica spp.
Staphylea trifolia
Vaccinium vacillans
V. angustifolium
V. corybosum
Euonymus atropurpureus
Rubus spp.
Viburnum trilobum
Ribes spp.

Lonicera japonica
Polygonum cuspidatum
Clethra alnifolia

Rosa multiflora
Sassafras albidum
Lindera benzoin
Rhus glabra
R. copallina
R. radicans
Viburnum acerifolium
Hamamelis virginiana
Taxus canadensis

WILDFLOWERS, PLANTS & HERBS

Alyssum, Hoary
Arrowhead, Broad-leaved
Aster, Heart-leaved
Aster, New York
Aster, White wood
Avens, White
Baneberry, White
Bindweed, Hedge
Black-eyed Susan
Bloodroot
Bluecurls
Boneset
Bugleweed
Burdock

Berteroa incoma
Sagittaria latifolia
Aster cordifolius
A. novae-belgii
A. divaricatus
Geum canadense
Actaea pachypoda
Convolvulus sepium
Rudbeckia hirta
Sanguinaria canadensis
Trichostema dichotomum
Eupatorium perfoliatum
Lycopus virginicus
Arctium minus

APPENDIX C

BOTANICAL INVENTORY- RESERVOIR-SHELDRAKE-LEATHERSTOCKING COMPLEX

WILDFLOWERS, PLANTS & HERBS- cont.

Buttercup, Common Tall	<i>Ranunculus acris</i>
Campion, Starry	<i>Silene stellata</i>
Catnip	<i>Nepeta cataria</i>
Celandine	<i>Chelidonium majus</i>
Celandine, Lesser	<i>Ranunculus ficata</i>
Celandine, Poppy	<i>Stylophorum diphyllum</i>
Chickweed, Mouse-eared	<i>Cerastium arvense</i>
Cinquefoil, Dwarf	<i>Potentilla canadensis</i>
Clover, White	<i>Trifolium repens</i>
Cohosh, Blue	<i>Caulophyllum thalictroides</i>
Coltsfoot	<i>Tussilago farfara</i>
Columbine	<i>Aquilegia canadensis</i>
Cress, Winter, (Yellow Rocket)	<i>Barbarea vulgaris</i>
Daisy, Ox-eye	<i>Chrysanthemum leucathemum</i>
Dandelion, Common	<i>Taraxacum officinale</i>
Deadnettle, Purple	<i>Lamium purpureum</i>
Dogbane, Spreading	<i>Apocymum androsaemifolium</i>
Dutchman's Breeches	<i>Dicentra cucullaria</i>
Evening Lychnis	<i>Lychnis alba</i>
Everlasting, Sweet (Catfoot)	<i>Gnaphalium obtusifolium</i>
Field Pussytoes	<i>Antennaria neglecta</i>
Gall-of-the-earth	<i>Prenanthes trifoliata</i>
Geranium, Wild	<i>Geranium maculatum</i>
Gill-over-the-ground (Ground-ivy)	<i>Glechoma hederacea</i>
Goldenrod, Erect	<i>Solidago altissima</i>
Goldenrod, Blue-stemmed	<i>S. caesia</i>
Grasses	<i>Gramineae spp.</i>
Groundnut	<i>Apios americana</i>
Heal-all	<i>Prunella vulgaris</i>
Horse-balm	<i>Collinsonia canadensis</i>
Horsetails	<i>Equisetum spp.</i>
Hawkweed, Orange (Devil's Paintbrush)	<i>Hieracium aurantiacum</i>
Indian-pipe	<i>Monotropa uniflora</i>
Iris, Blue-Flag	<i>Iris versicolor</i>
Jack-in-the-Pulpit	<i>Arisaema dracontium</i>
Jewelweed (Spotted Touch-Me-Not)	<i>Impatiens capensis</i>
Joe-Pye Weed	<i>Eupatorium spp.</i>
Knotweed, Japanese	<i>Polygonum cuspidatum</i>
Knotweed, Long-bristled Smartweed	<i>P. cespitosum</i>
Knotweed, Virginia (Jumpseed)	<i>Tovara virginiana</i>
Lamb's quarters (Pigweed)	<i>Chenopodium alba</i>
Lettuce, Blue	<i>Lactula spp.</i>
Lettuce, White	<i>Prenanthes alba</i>
Lettuce, Tall-white	<i>P. altissima</i>
Lily, Trout	<i>Erythronium americanum</i>
Lily, Yellow Pond (Bullhead, Spatterdock)	<i>Nuphar variegatum</i>

APPENDIX C

BOTANICAL INVENTORY- RESERVOIR-SHELDRAKE-LEATHERSTOCKING COMPLEX

WILDFLOWERS, PLANTS & HERBS- cont.

Loosestrife, Purple	<i>Lythrum salicaria</i>
Loosestrife, Fringed	<i>Lysimachia ciliata</i>
Loosestrife, Swamp (Water-willow)	<i>Decodon verticillatus</i>
Mallow, Swamp Rose	<i>Hibiscus palustris</i>
Mallow, Crimson-eyed	<i>H. palustris peckii</i>
Marigold, Marsh	<i>Caltha palustris</i>
Mayflower, Canada	<i>Maianthemum canadense</i>
Meadowrue, Early	<i>Thalictrum dioicum</i>
Milkweed, Common	<i>Asclepias syriaca</i>
Milkweed, Purple	<i>A. purpurascens</i>
Mugwort	<i>Artemisia vulgaris</i>
Mullein, Common	<i>Verbascum thapsus</i>
Mullein, Moth	<i>V. blattaria</i>
Mullein, Pink	<i>Lychnis coronaria</i>
Mustard Garlic	<i>Alliaria officinalis</i>
Nettle, False	<i>Boehmeria cylindrica</i>
Nettle, Stinging	<i>Urtica dioica</i>
Nightshade, Enchanter's	<i>Circaea quadrisulcata</i>
Oats, Wild	<i>Uvularia sessifolia</i>
Periwinkle	<i>Vinca minor</i>
Pineapple Weed	<i>Matricaria matricarioides</i>
Pink, Deptford	<i>Dianthus armeria</i>
Plantain, Common	<i>Plantago major</i>
Pokeweed	<i>Phytolacca americana</i>
Primrose, Common Evening	<i>Oenothera biennis</i>
Queen Anne's Lace	<i>Daucus carota</i>
Ragweed, Common	<i>Ambrosia artemisiifolia</i>
Ragweed, Great	<i>A. trifida</i>
Rue, Anemone	<i>Anemonella thalictroides</i>
Rue, Tall Meadow	<i>Thalictrum polygamum</i>
St. Johnswort, Common	<i>Hypericum perforatum</i>
Sarsaparilla	<i>Aralia</i> spp.
Sarsaparilla, Bristly	<i>A. hispida</i>
Saxifrage, Early	<i>Saxifraga virginiensis</i>
Spikenard	<i>A. racemosa</i>
Shepherd's purse	<i>Capsella bursa-pastoris</i>
Skunk Cabbage	<i>Symplocarpus foetidus</i>
Snakeroot	<i>Sanicula</i> spp.
Snapdragon, Lesser	<i>Antirrhinum orontium</i>
Solomon's Seal	<i>Polygonatum biflorum</i>
Solomon's Seal, False	<i>Smilacina racemosa</i>
Sow-thistle, Common	<i>Sonchus oleraceus</i>
Speedwell, Field	<i>Veronica arvensis</i>
Speedwell, Thyme-leaved	<i>V. serpyllifolia</i>
Spring-beauty	<i>Claytonia virginica</i>
Strawberry, Wild	<i>Fragaria virginiana</i>

APPENDIX C

BOTANICAL INVENTORY- RESERVOIR-SHELDRAKE-LEATHERSTOCKING COMPLEX

WILDFLOWERS, PLANTS & HERBS- cont.

Sunflower, Thin-leaved
Thistle, Bull
Turtlehead
Violet, Common blue
Violet, Smooth Yellow
Violet, Sweet White
Watercress, Alien
Wintergreen, Spotted
Yarrow

Helianthus decapetalus
Cirsium vulgare
Chelone glabra
Viola papilionacea
V. pennsylvanica
V. lauceolata
Nasturtium officinale
Chimophila maculata
Achillea millefolium

VINES

Bindweed, Hedge
Bittersweet, Asiatic
Cucumber, Bur
Dodder
Grape, Wild
Greenbrier (Catbrier)
Honeysuckle, Japanese
Nightshade (Bittersweet)
Porcelainberry
Virginia Creeper

Convolvulus sepium
Celastrus orbiculatus
Sycios angularis
Cuscuta gronovii
Vitis spp.
Smilax rotundifolia
Lonicera japonica
Solanum dulcamara
Ampelopsis brevipedunculata
Parthenocissis quinquefolia

FERNS & FERN ALLIES

Broad Beech
Marginal Shield
Christmas
Cinnamon
Field Horsetail
Hayscented
Interrupted
Lady
Maidenhair
Marsh
Ostrich
New York
Rock Polypody
Sensitive
Shining Clubmoss

Dryopteris hexagonoptera
D. marginalis
Polystichum acrostichoides
Osmunda cinnamomea
Equisetum arvense
Dennstaedtia punctilobula
Osmunda claytoniana
Athyrium filix-femina
Adiantum pedatum
Telypteris palustris
Matteuccia struthiopteris
Thelypteris noveboracensis
Polypodium vulgare
Onoclea sensibilis
Lycopodium lucidulum

Sources: 2 Walk Books (1984 and 1986), Wallace Irwin Jr., Edward Frankel, Mary Anne Johnson.
Consultant Stephen Coleman (1992).

APPENDIX D

COMPILATION OF BIRD LISTS FOR THE RESERVOIR-SHELDRAKE-LEATHERSTOCKING COMPLEX

(Sources: LWRP 1986 Appendix A, Irma Volk, Paul Lehman, James and Mary Anne Johnson)

KEY:

- 1 Occasional or rare
- 2 Consultant Stephen Coleman- Observations March - November 1992
- * Nesting in R-S-L CEA- Confirmed by Consultant
- ** Nests on Bonnie Briar
- E ENDANGERED SPECIES NY STATE DEC LIST (1983)
- S SPECIES OF SPECIAL CONCERN
- T THREATENED SPECIES
- V VULNERABLE SPECIES
- e,s,t NY STATE DEC LIST (1987)

PODICIPEDIFORMES

Pied-billed grebe² Podilymbus podiceps

PELECANIFORMES

Double-crested Cormorant₂ Phalacrocorax auritus

CICONIIFORMES

Great Blue Heron² Ardea herodias
 Great Egret² Casmerodius albus
 Snowy Egret² Egretta thula
 Black-crowned Night Heron² Nycticorax nycticorax
 Green Heron^{2,*} Butorides striatus

ANSERIFORMES

Mute Swan^{2,*} Cygnus olor
 Snow Goose¹ Chen hyperborea
 Canada Goose^{2,*} Branta canadensis
 Amer. Black Duck² Anas rubripes
 Mallard^{2,*} A. platyrhynchos
 Common Pintail^{1,2} A. acuta
 American Wigeon² A. americana
 Wood Duck^{2,*} Aix sponsa
 Northern Shoveler² Anas clypeata
 Blue-winged Teal A. discors
 Green-winged Teal A. crecca
 Ring-necked Duck² Aythya collaris
 Greater Scaup^{1,2} A. marila
 Bufflehead² Bucephala albeola
 Ruddy Duck² Oxyura jamaicensis
 Common Merganser^{1,2} Mergus merganser
 Red-breasted Merganser² M. serrator
 Hooded Merganser² Lophodytes cucullatus

FALCONIFORMES

Sharp-shinned Hawk^{2,*} Accipiter striatus
 Cooper's Hawk² A. cooperii

APPENDIX D

COMPILATION OF BIRD LISTS FOR THE RESERVOIR-SHELDRAKE-LEATHERSTOCKING COMPLEX

Tt Northern Harrier ²	Circus cyaneus
Red-tailed Hawk ^{2,*}	Buteo jamaicensis
Tt Red-shouldered Hawk ¹	B. lineatus
Broad-winged Hawk ²	B. platypterus
e Golden Eagle ¹	Aquila chrysaetos
Tt Osprey ²	Pandion haliaetus
Turkey Vulture ²	Cathartes aura
American Kestrel	Falco sparverius
<u>GALLIFORMES</u>	
Ring-necked Pheasant ^{1,2,*}	Phasianus colchicus
<u>GRUIFORMES</u>	
American Coot ^{1,2}	Fulica americana
Sora Rail ²	Porzana carolina
<u>CHARADRIIFORMES</u>	
Killdeer ^{2,*}	Charadrius vociferous
Greater Yellowlegs	Tringa melanoleuca
Lesser Yellowlegs	T. flavipes
Solitary Sandpiper	T. solitaria
Spotted Sandpiper ^{2,*}	Actitis macularia
Herring Gull ²	Larus argentatus
Ring-billed Gull ²	L. delawarensis
Laughing Gull ²	L. atricilla
<u>COLUMBIFORMES</u>	
Mourning Dove ^{2,*}	Zenaidura macroura
Rock Dove ^{2,*}	Columba livia
<u>CUCULIFORMES</u>	
Yellow-billed Cuckoo ¹	Coccyzus americanus
Black-billed Cuckoo ¹	C. erythrophthalmus
<u>STRIGIFORMES</u>	
Great Horned Owl ^{2,*}	Bubo virginianus
Screech Owl ^{2,*}	Otus asio
<u>CAPRIMULGIFORMES</u>	
Ss Common Nighthawk ^{2,*}	Chordeiles minor
<u>APODIFORMES</u>	
Chimney Swift	Chaetura pelagica
V Ruby-throated Hummingbird ^{1,2,*}	Archilochus colubris
<u>CORACIIFORMES</u>	
Belted Kingfisher ^{2,*}	Megasceryle alcyon

APPENDIX D

COMPILATION OF BIRD LISTS FOR THE RESERVOIR-SHELDRAKE-LEATHERSTOCKING COMPLEX

PICIFORMES

Red-headed Woodpecker ¹	<i>Melanerpes erythrocephalus</i>
Pileated Woodpecker ^{2,*}	<i>Dryocopus pileatus</i>
Common Flicker ^{2,*}	<i>Colaptes auratus</i>
Red-bellied Woodpecker ^{2,*}	<i>Melanerpes carolinus</i>
Yellow-bellied Sapsucker ²	<i>Sphyrapicus varius</i>
Downy Woodpecker ^{2,*}	<i>Picoides pubescens</i>
V Hairy Woodpecker ^{2,*}	<i>P. villosus</i>

PASSERIFORMES

Tyrannidae-Flycatchers

Eastern Kingbird ^{2,*}	<i>Tyrannus tyrannus</i>
Great Crested Flycatcher ^{2,*}	<i>Myiarchus crinitus</i>
Eastern Phoebe ^{2,*}	<i>Sayornis phoebe</i>
Eastern Pewee ^{2,*}	<i>Contopus virens</i>
Yellow-bellied Flycatcher ²	<i>Empidonax flairventris</i>
Least Flycatcher	<i>E. minimus</i>

Hirundinidae-Swallows

Barn Swallow ²	<i>Hirundo rustica</i>
Tree Swallow ^{2,*}	<i>Iridoprocne bicolor</i>
Rough-winged Swallow	<i>Stelgidopteryx ruficollis</i>
Bank Swallow	<i>Riparia riparia</i>

Corvidae-Jays, Crows

American (Common) Crow ^{2,*}	<i>Corvus brachyrhynchos</i>
Blue Jay ^{2,*}	<i>Cyanocitta cristat</i>

Paridae-Titmice

Black-capped Chickadee ^{2,*}	<i>Parus atricapillus</i>
Tufted Titmouse ^{2,*}	<i>P. bicolor</i>

Sittidae-Nuthatches

White-breasted Nuthatch ^{2,*}	<i>Sitta carolinensis</i>
Red-breasted Nuthatch ²	<i>S. canadensis</i>

Certhiidae-Creepers

Brown Creeper ²	<i>Certhia familiaris</i>
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Troglodytidae- Wrens

House Wren ^{2,*}	<i>Troglodytes aedon</i>
Winter Wren	<i>T. troglodytes</i>
Carolina Wren ^{2,*}	<i>Thryothorus ludovicianus</i>

Mimidae-Mimic Thrushes

Brown Thrasher ^{2,*}	<i>Toxostoma rufum</i>
Gray Catbird ^{2,*}	<i>Dumetella carolinensis</i>

APPENDIX D

COMPILATION OF BIRD LISTS FOR THE RESERVOIR-SHELDRAKE-LEATHERSTOCKING COMPLEX

Northern Mockingbird ^{2,*}	<i>Mimus polyglottos</i>
Turdidae-Thrushes	
American Robin ^{2,*}	<i>Turdus migratorius</i>
Gray-cheeked Thrush ²	<i>Catharus minimus</i>
Swainson's Thrush ²	<i>C. ustulatus</i>
Hermit Thrush ²	<i>C. guttatus</i>
Veery ^{2,*}	<i>C. fuscescens</i>
Wood Thrush ^{2,*}	<i>Hylocichla mustelina</i>
Sylviidae - Kinglets, Gnatcatchers:	
Ruby-crowned Kinglet ²	<i>Regulus calendula</i>
Golden-crowned Kinglet ^{1,2}	<i>R. satrapa</i>
Blue-gray Gnatcatcher ^{2,**}	<i>Poliophtila caerulea</i>
Bombycillidae - Waxwings:	
Cedar Waxwing ²	<i>Bombycilla cedrorum</i>
Sturnidae - Starlings:	
European Starling ^{2,*}	<i>Sturnus vulgaris</i>
Vireonidae-Vireos	
Red-eyed Vireo ^{2,*}	<i>Vireo olivaceus</i>
Warbling Vireo ²	<i>V. gilvus</i>
Yellow-throated Vireo	<i>V. flavifrons</i>
Solitary Vireo ²	<i>V. solitarius</i>
Parulidae - Wood Warblers:	
Northern Parula Warbler	<i>Parula americana</i>
Black-throated Green Warbler ²	<i>Dendroica virens</i>
Black & White Warbler ^{2,*}	<i>Mniotilta varia</i>
Blackpoll Warbler ²	<i>Dendroica striata</i>
Black-throated Blue Warbler	<i>D. caerulescens</i>
Magnolia Warbler ²	<i>D. magnolia</i>
Yellow-rumped Warbler ²	<i>D. coronata</i>
Canada Warbler ²	<i>Wilsonia canadensis</i>
Chestnut-sided Warbler ²	<i>Dendroica pensylvanica</i>
Blackburnian Warbler	<i>D. fusca</i>
American Redstart ²	<i>Setophaga ruticilla</i>
Prairie Warbler ^{2,*}	<i>Dendroica discolor</i>
Palm Warbler ²	<i>D. palmarum</i>
Blue-winged Warbler ^{2,*}	<i>Vermivora pinus</i>
V Yellow Warbler ^{2,*}	<i>Dendroica petechia</i>
Worm-eating Warbler ^{2,*}	<i>Helmitheros vermivorus</i>
Tennessee Warbler	<i>Vermivora peregrina</i>
S Wilson's Warbler ²	<i>Wilsonia pusilla</i>

APPENDIX D

COMPILATION OF BIRD LISTS FOR THE RESERVOIR-SHELDRAKE-LEATHERSTOCKING COMPLEX

Common Yellowthroat ^{2,*}	<i>Geothlypis trichas</i>
Louisiana Waterthrush ^{2,*}	<i>Seiurus motacilla</i>
Ovenbird ^{2,*}	<i>S. aurocapillus</i>
Ploceidae - Weaver Finches:	
House Sparrow	<i>Passer domesticus</i>
Icteridae - Blackbirds, Orioles:	
Red-winged Blackbird ^{2,*}	<i>Agelaius phoeniceus</i>
Brown-headed Cowbird ^{2,*}	<i>Molothrus ater</i>
Rusty Blackbird	<i>Euphagus carolinus</i>
Common Grackle ^{2,*}	<i>Quiscalus guiscular</i>
Orchard Oriole	<i>Icterus spurius</i>
Northern Oriole-Baltimore ^{2,*}	<i>I. galbula</i>
Troglodytidae - Tanagers:	
Scarlet Tanager ^{2,*}	<i>Piranga olivacea</i>
Fringillidae - Finches, Sparrows:	
Northern Junco ²	<i>Junco hyemalis</i>
Northern Cardinal ^{2,*}	<i>Cardinalis cardinalis</i>
House Finch ^{2,*}	<i>Carpodacus mexicanus</i>
Purple Finch ²	<i>C. purpureus</i>
Evening Grosbeak ^{1,2}	<i>Hesperiphona vespertina</i>
American Goldfinch ^{2,*}	<i>Carduelis tristis</i>
Pine Siskin ²	<i>C. pinus</i>
Indigo Bunting ^{1,2,*}	<i>Passerina cyanea</i>
Rose-breasted Grosbeak ^{2,*}	<i>Pheucticus ludovicianus</i>
Rufous-sided Towhee ^{2,*}	<i>Pipilo erythrophthalmus</i>
White-throated Sparrow ²	<i>Zonotrichia albicollis</i>
White-crowned Sparrow ²	<i>Z. leucophrys</i>
Chipping Sparrow ^{2,*}	<i>Spizella passerina</i>
Field Sparrow ^{2,*}	<i>S. pusilla</i>
American Tree Sparrow ²	<i>S. arborea</i>
Fox Sparrow ²	<i>Passerella iliaca</i>
Song Sparrow ^{2,*}	<i>Melospiza melodia</i>

APPENDIX E

COMPILATION OF BIRD LISTS FOR THE PREMIUM RIVER-PINE BROOK WETLANDS COMPLEX

1 Identified in Chester Place Woods (May 1967-July 1969) by T. Waller.

Pryer Manor Marsh, Premium River/marshes, Mill Pond and adjacent lands:

- | | | |
|---|------------------------|--|
| 2 | 1970-1973 | Sidney Bahrt <u>et al.</u> |
| 3 | October 1978-1985 | Mary Anne Johnson <u>et al.</u> |
| 4 | 1987-1988 | Audubon Christmas Count & PPPA monitors (partial). |
| 5 | March 11, 1989 | John Moyle Bird Walk. |
| 6 | 1972-1990 | James Coe Life List & Bird Walk 10/14/90. |
| 7 | June '92; Jan-July '93 | Consultant Stephen Coleman |

* Occasional or rare.

** Nesting

E NY State list-1983

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ENDANGERED SPECIES
SPECIES OF SPECIAL CONCERN
THREATENED SPECIES
VULNERABLE SPECIES
NY STATE DEC LIST-1987

GAVIIFORMES

Gaviidae - Loons:

S	Common Loon	<i>Gavia immer</i>	3
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PODICIPEDIFORMES

Podicipedidae - Grebes:

	Horned Grebe	<i>Colymbus auritus</i>	3,4,5,6
	Pied-billed Grebe	<i>Podilymbus podiceps</i>	3,6

PELECANIFORMES

Phalacrocoracidae - Cormorants:

	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	7
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CICONIIFORMES

Ardeidae - Herons:

	Great Blue Heron	<i>Ardea herodias</i>	3,4,6,7
	Little Blue Heron	<i>Florida caerulea</i>	6
	Louisiana Heron	<i>Hydranassa tricolor</i>	2*,4*
	Great Egret	<i>Casmerodius albus</i>	2,3,4,6,7
	Snowy Egret	<i>Egretta thula</i>	2,3,4,6,7
	Cattle Egret	<i>Bubulcus ibis</i>	2*
	Black-crowned Night Her.	<i>Nycticorax nycticorax</i>	3,4,6,7
	Yellow-crowned Night Her.	<i>Nyctanassa violacea</i>	3*
	Green Heron	<i>Butorides striatus</i>	1,2,3,6,7**
Ss	Least Bittern	<i>Ixobrychus exilis</i>	1
	American Bittern	<i>Botaurus lentiginosus</i>	2,3,7**

Threskiornithidae - Typical Ibises:

	Glossy Ibis	<i>Plegadis falcinellus</i>	1,3
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APPENDIX E

COMPILATION OF BIRD LISTS FOR THE PREMIUM RIVER-PINE BROOK WETLANDS COMPLEX

ANSERIFORMES

Anatidae - Cygninae - Swans:

Mute Swan *Cygnus olor* 2,3,4,5,6,7**

Anatidae - Anserinae - Geese:

Snow Goose *Chen hyperborea* 3,4
 Canada Goose *Branta canadensis* 2,3,4,5,6,7**
 Brant *B. bernicla* 4,6,7

Anatidae - Anatinae - Marsh Ducks:

Amer. Black Duck *Anas rubripes* 2,3,4,6,7
 Gadwall *A. strepera* 3,4,6,7
 Mallard *A. platyrhynchos* 1,2,3,4,5,6,7**
 Common Pintail *A. acuta* 3*
 American Widgeon *A. americana* 2,3,4,5,6,7
 Eurasian Widgeon *A. penelope* 2,3*,4,6
 Wood Duck *Aix sponsa* 2,3*,7
 Northern Shoveler *Anas clypeata* 3,4,6,7
 Blue-winged Teal *A. discors* 6

Anatidae - Aythyinae - Diving Ducks:

Oldsquaw *Clangula hyemalis* 5
 Canvasback *Aythya valisineria* 2,3,4,5,6
 Redhead *A. americana* 6
 Lesser Scaup *A. affinis* 3,4,6,7
 Greater Scaup *A. marila* 3,4,5,6,7
 Common Goldeneye *Bucephala clangula* 3,6
 Bufflehead *B. albeola* 3,4,5,6,7

Anatidae - Oxyurinae - Stiff-Tailed Ducks:

Ruddy Duck *Oxyura jamaicensis* 3,6,7

Anatidae - Merginae - Mergansers:

Common Merganser *Mergus merganser* 3,6,7
 Red-breasted Merganser *M. serrator* 3,4,5,6
 Hooded Merganser *Lophodytes cucullatus* 3,6,7

FALCONIFORMES

Accipitridae - Hawks etc.:

Sharp-shinned Hawk *Accipiter striatus* 4,5,6,7
 s Cooper's Hawk *A. cooperii* 6
 Northern Goshawk *A. gentilis* 5
 Tt Northern Harrier *Circus cyaneus* 3,6

Buteoninae - Eagles etc.:

Red-tailed Hawk *Buteo jamaicensis* 3,5,6,7
 Tt Red-shouldered Hawk *B. lineatus* 3

APPENDIX E

COMPILATION OF BIRD LISTS FOR THE PREMIUM RIVER-PINE BROOK WETLANDS COMPLEX

Pandionidae - Ospreys:		
Tt Osprey	<i>Pandion haliaetus</i>	3,6
Cathartidae - American Vultures:		
Turkey Vulture	<i>Cathartes aura</i>	3,7
Falconinae - Falcons:		
American Kestrel	<i>Falco sparverius</i>	2,3,6
Merlin	<i>F. columbarius</i>	3
<u>GALLIFORMES</u>		
Tetraonidae - Grouse etc.:		
Ruffed Grouse	<i>Bonasa umbellus</i>	1,3*
Phasianidae - Pheasants:		
Ring-necked Pheasant	<i>Phasianus colchicus</i>	1,2,3,4,5,6,7**
<u>GRUIFORMES</u>		
Rallidae - Duck-like swimmers:		
American Coot	<i>Fulica americana</i>	2,3,6
Virginia Rail	<i>Rallus limicola</i>	3*
Clapper Rail	<i>R. longirostris</i>	3*
Sora	<i>Porzana carolina</i>	6
<u>CHARADRIIFORMES</u>		
Charadriidae - Plovers:		
Semipalmated Plover	<i>Charadrius semipalmatus</i>	2*,6,7
Killdeer	<i>C. vociferous</i>	1,2,3,5,6,7**
Scolopacidae - Sandpipers etc.:		
American Woodcock	<i>Philohela minor</i>	3,6
Greater Yellowlegs	<i>Tringa melanoleuca</i>	2,3,6
Lesser Yellowlegs	<i>T. flavipes</i>	2,3,6
Solitary Sandpiper	<i>T. solitaria</i>	2
Sanderling	<i>Calidris alba</i>	2
Pectoral Sandpiper	<i>C. melantos</i>	2
Dunlin	<i>C. alpina</i>	3*
Spotted Sandpiper	<i>Actitis macularia</i>	3,6
Least Sandpiper	<i>Calidris minutilla</i>	2
Semipalmated Sandpiper	<i>C. pusilla</i>	2,3
White-rumped Sandpiper	<i>C. fuscicollis</i>	2
Laridae - Larinae - Gulls:		
Herring Gull	<i>Larus argentatus</i>	1,2,3,5,6,7
Ring-billed Gull	<i>L. delawarensis</i>	3,4,5,6,7
Great Black-backed Gull	<i>L. marinus</i>	2,3,4,5,6,7
Laughing Gull	<i>L. atricilla</i>	3,4,6,7

APPENDIX E

COMPILATION OF BIRD LISTS FOR THE PREMIUM RIVER-PINE BROOK WETLANDS COMPLEX

Bonaparte's Gull	<i>L. philadelphia</i>	6
Laridae - Sternidae - Terns:		
Ee Least (Little) Tern	<i>Sterna albifrons</i>	3,6
Tt Common Tern	<i>S. hirundo</i>	3
Rynchopidae - Skimmers:		
Black Skimmer	<i>Rynchops niger</i>	3*
<u>COLUMBIFORMES</u>		
Columbidae - Pigeons, Doves:		
Mourning Dove	<i>Zenaida macroura</i>	1,2,3,4,5,6,7**
Rock Dove	<i>Columba livia</i>	1,2,3,4,5,6,7**
<u>STRIGIFORMES</u>		
Tytonidae - Barn Owls:		
Ss Barn Owl	<i>Tyto alba</i>	3
Strigidae - Typical Owls:		
Common Screech Owl	<i>Otus asio</i>	3,7**
Great Horned Owl	<i>Bubo virginianus</i>	3,6
Snowy Owl	<i>Nyctea scandiaca</i>	3*
<u>CAPRIMULGIFORMES</u>		
Caprimulgidae - Goatsuckers:		
Ss Common Nighthawk	<i>Chordeiles minor</i>	3,7
<u>APODIFORMES</u>		
Trochilidae - Hummingbirds:		
V Ruby-throated Hummbrd.	<i>Archilochus colubris</i>	1,2,3,6,7
<u>CORACIIFORMES</u>		
Alcedinidae - Kingfishers:		
Belted Kingfisher	<i>Megaceryle alcyon</i>	2,3,5,6,7
<u>PICIFORMES</u>		
Picidae - Woodpeckers:		
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	1,3
Pileated Woodpecker	<i>Dryocopus pileatus</i>	3
Common Flicker	<i>Colaptes auratus</i>	1,2,3,4,6,7
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	3,4,7
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	2,3
Downy Woodpecker	<i>Picoides pubescens</i>	1,2,3,4,5,6,7
V Hairy Woodpecker	<i>P. villosus</i>	1,2,3,6,7

APPENDIX E

COMPILATION OF BIRD LISTS FOR THE PREMIUM RIVER-PINE BROOK WETLANDS COMPLEX

PASSERIFORMES

Tyrannidae - Flycatchers:

Eastern Kingbird	<i>Tyrannus tyrannus</i>	1,2,3,6,7**
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	2,6,7
Ash-throated Flycatcher	<i>M. cinerascens</i>	2*
Eastern Phoebe	<i>Sayornis phoebe</i>	1,3,6,7
Eastern Pewee	<i>Contopus virens</i>	2,3
Acadian Flycatcher	<i>Empidonax virescens</i>	1
Yellow-bellied Flycatcher	<i>E. flairventris</i>	1

Hirundinidae - Swallows:

Cliff Swallow	<i>Petrochelidon pyrrhonata</i>	1
Barn Swallow	<i>Hirundo rustica</i>	2,3,6,7
Tree Swallow	<i>Iridoprocne bicolor</i>	3,6,7
Rough-winged Swallow	<i>Stelgidopteryx ruficollis</i>	1,2,6
Bank Swallow	<i>Riparia riparia</i>	2,3

Corvidae - Jays, Crows:

Fish Crow	<i>Corvus ossifragus</i>	3,6,7
American (Common) Crow	<i>C. brachyrhynchus</i>	1,2,3,5,6,7
Blue Jay	<i>Cyanocitta cristat</i>	1,2,3,4,5,6,7

Paridae - Titmice:

Black-capped Chickadee	<i>Parus atricapillus</i>	1,2,3,4,5,6,7
Tufted Titmouse	<i>P. bicolor</i>	1,2,3,4,5,6,7**

Sittidae - Nuthatches:

White-breasted Nuthatch	<i>Sitta carolinensis</i>	1,2,3,4,5,6,7**
Red-breasted Nuthatch	<i>S. canadensis</i>	3,6

Certhiidae - Creepers:

Brown Creeper	<i>Certhia familiaris</i>	1,2
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Troglodytidae - Wrens:

House Wren	<i>Troglodytes aedon</i>	1,3,6,7**
Winter Wren	<i>T. troglodytes</i>	3
Carolina Wren	<i>Thryothorus ludovicianus</i>	3,6,7
Marsh Wren	<i>Cistothorus palustris</i>	1,3
Sedge Wren	<i>C. platensis</i>	1

Mimidae - Mimic Thrushes:

Brown Thrasher	<i>Toxostoma rufum</i>	1,2,3,4,6
Gray Catbird	<i>Dumetella carolinensis</i>	2,3,4,6,7**
Northern Mockingbird	<i>Mimus polyglottos</i>	2,3,4,5,6,7

Turdidae - Thrushes:

Ss Eastern Bluebird	<i>Sialia sialis</i>	1,2,4
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APPENDIX E

COMPILATION OF BIRD LISTS FOR THE PREMIUM RIVER-PINE BROOK WETLANDS COMPLEX

American Robin	<i>Turdus migratorius</i>	1,2,3,4,6,7
Swainson's Thrush	<i>Catharus ustulatus</i>	1,6
Hermit Thrush	<i>C. guttatus</i>	4,6
Veery	<i>C. fuscescens</i>	6
Wood Thrush	<i>Hylocichla mustelina</i>	1,3,7
Fieldfare	<i>Turdus pilaris</i>	3*
Sylviidae - Kinglets, Gnatcatchers:		
Ruby-crowned Kinglet	<i>Regulus calendula</i>	1,2,3,4,6
Golden-crowned Kinglet	<i>R. satrapa</i>	6
Blue-gray Gnatcatcher	<i>Poliophtila caerulea</i>	3
Motacillidae - Pipets etc.:		
Water (American) Pipet	<i>Anthus spinoletta</i>	3*
Bombycillidae - Waxwings:		
Cedar Waxwing	<i>Bombycilla cedrorum</i>	2,3*,6,7
Sturnidae - Starlings:		
Eurasian Starling	<i>Sturnus vulgaris</i>	1,2,3,4,6,7
Vireonidae - Vireos:		
Red-eyed Vireo	<i>Vireo olivaceus</i>	3,7
Parulidae - Wood Warblers:		
Northern Parula Warbler	<i>Parula americana</i>	6
Black-throated Green War.	<i>Dendroica virens</i>	1,6
Black & White Warbler	<i>Mniotilta varia</i>	1,2,3,6,7
Black-throated Blue War.	<i>Dendroica caerulescens</i>	6
Magnolia Warbler	<i>D. magnolia</i>	1,6
Yellow-rumped Warbler	<i>D. coronata</i>	1,2,3,6
Canada Warbler	<i>Wilsonia canadensis</i>	1
Cape May Warbler	<i>Dendroica tigrina</i>	6
Chestnut-sided Warbler	<i>D. pensylvanica</i>	6
Blackburnian Warbler	<i>D. fusca</i>	1
American Redstart	<i>Setophaga ruticilla</i>	1,2,6,7
Prairie Warbler	<i>Dendroica discolor</i>	6
Palm Warbler	<i>D. palmarum</i>	2,6
Blue-winged Warbler	<i>Vermivora pinus</i>	3,6,7**
V Yellow Warbler	<i>Dendroica petechia</i>	1,2,3,6,7
Worm-eating Warbler	<i>Helmitheros vermivorus</i>	6
Tennessee Warbler	<i>Vermivora peregrina</i>	6
S Wilson's Warbler	<i>Wilsonia pusilla</i>	1,6
Nashville Warbler	<i>Vermivora ruficapilla</i>	6
Mourning Warbler	<i>Oporornis philadelphia</i>	1
Common Yellowthroat	<i>Geothlypis trichas</i>	1,2,3,6,7
Yellow-breasted Chat	<i>Icteria verens</i>	1

APPENDIX E

COMPILATION OF BIRD LISTS FOR THE PREMIUM RIVER-PINE BROOK WETLANDS COMPLEX

Northern Waterthrush	<i>Seiurus noveboracensis</i>	1
Louisiana Waterthrush	<i>S. motacilla</i>	1,7
Ovenbird	<i>S. aurocapillus</i>	1,3,6,7
Ploceidae - Weaver Finches:		
House Sparrow	<i>Passer domesticus</i>	1,2,3,5,6,7
Icteridae - Blackbirds, Orioles:		
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1,2,3,5,6,7**
Brown-headed Cowbird	<i>Molothrus ater</i>	1,2,3,6,7
Rusty Blackbird	<i>Euphagus carolinus</i>	1
Common Grackle	<i>Quiscalus guiscula</i>	1,2,3,5,6,7
Bobolink	<i>Dolichonyx oryzivorus</i>	2,6
V Eastern Meadowlark	<i>Sturnella magna</i>	2,3
Orchard Oriole	<i>Icterus spurius</i>	2,6
Northern Oriole (Baltimore)	<i>I. galbula</i>	1,2,3,6,7
Thraupidae - Tanagers:		
Scarlet Tanager	<i>Piranga olivacea</i>	1,2,3,7
Fringillidae - Finches, Sparrows:		
Northern Junco	<i>Junco hyemalis</i>	1,2,3,4,6
Snow Bunting	<i>Plectrophenax nivalis</i>	6
Northern Cardinal	<i>Cardinalis cardinalis</i>	1,2,3,4,5,6,7
House Finch	<i>Carpodacus mexicanus</i>	1,2,3,5,6,7
Purple Finch	<i>C. purpureus</i>	1,3,6
Evening Grosbeak	<i>Hesperiphona vespertina</i>	3*
American Goldfinch	<i>Carduelis tristis</i>	2,3,6,7
Pine Siskin	<i>C. pinus</i>	3*,6
Indigo Bunting	<i>Passerina cyanea</i>	6,7
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	1,2,3,6
Rufous-sided Towhee	<i>Pipilo erythrophthalmus</i>	1,2,3,4,6,7
White-throated Sparrow	<i>Zonotrichia albicollis</i>	2,3,4,5,6,7
White-crowned Sparrow	<i>Z. leucophrys</i>	1,3*,6
Chipping Sparrow	<i>Spizella passerina</i>	1,6,7
Field Sparrow	<i>S. pusilla</i>	2,6,7
Swamp Sparrow	<i>Melospiza georgiana</i>	6
American Tree Sparrow	<i>Spizella arborea</i>	1,3,6
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	6
Fox Sparrow	<i>Passerella iliaca</i>	1,2,3,6,7
Song Sparrow	<i>Melospiza melodia</i>	1,2,3,4,5,6,7**
Ss Vesper Sparrow	<i>Poocetes gramineus</i>	1,2,6
Savannah Sparrow	<i>Passerculus sandwichensis</i>	2,6

APPENDIX F

BOTANICAL INVENTORY- HOMMOCKS MARSH COMPLEX

TREES

Ailanthus (Tree of Heaven)
 Ash, Green
 Birch, Black
 Birch, White
 Cedar, Northern White
 Cedar, Eastern Red
 Cherry, Black
 Cottonwood, Eastern
 Elm, American
 Elm, Slippery
 Hawthorne, spp.
 Hickory, Mockernut
 Hickory, Pignut
 Locust, Black
 Locust, Honey
 Maple, Norway
 Maple, Sugar (Silver)
 Mulberry, Red
 Oak, Pin
 Oak, Post
 Oak, Swamp
 Oak, White
 Pine, Red
 Pine, Scotch
 Pine, Eastern white
 Sassafras
 Spruce, Norway
 Tupel
 Willow, Weeping
 Willow, Silky

Ailanthus altissima
 Fraxinus pennsylvanica lanecolata
 Betula lenta
 B. papyrifera
 Thuja occidentalis
 Juniperus virginiana
 Prunus serotina
 Populus deltoides
 Ulmus americana
 U. fulva
 Craetegus spp.
 Carya tomentosa
 C. glabra
 Robinia pseudoacacia
 Gleditsia triacanthos
 A. platanoides
 A. saccharum
 Morus rubra
 Quercus palustris
 Q. stellata
 Q. bicolor
 Q. alba
 Pinus resinosa
 P. sylvestris
 P. strobus
 Sassafras albidum
 Picea abies
 Nyssa sylvatica
 Salix babylonica
 S. sericea

SHRUBS & VINES

Barberry, Japanese
 Bindweed, Field
 Bittersweet, Asiatic
 Brambles
 Cherry, Choke
 Current/Gooseberry
 Dogwood, Silky
 Dogwood, Flowering
 Elder, Red-berried
 Elder, Marsh
 Grape, Fox
 Green-brier, Common
 Green-brier, Bristly
 Hazelnut, American

Berberis thunbergii
 Convolvulus arvensis
 Celastrus orbiculatus
 Rubus spp.
 Prunus virginiana
 Ribes spp.
 Cornus amonum
 C. florida
 Sambucus spp.
 Iva frutescens
 Vitis labrusca
 Smilax glauca
 S. hispida
 Corylus americana

APPENDIX F

BOTANICAL INVENTORY- HOMMOCKS MARSH COMPLEX

SHRUBS & VINES- cont.

Honeysuckle, Canadian
 Honeysuckle, Japanese
 Morning Glory, Common
 Nightshade, Bittersweet
 Olive, Russian
 Poison Ivy
 Rose, Sweet Brier
 Rose, Multiflora
 St. Johnswort, Shrubby
 Sea Lavender
 Sumac, Smooth
 Sumac, Winged
 Viburnum, Maple-Leaf
 Virginia Creeper, Woodbine
 Witch Hazel

Lonicera sempervirens
 L. japonica
 Ipomoea purpurea
 Solanum dulcamara
 Elaeagnus angustifolia
 R. radicans Rose, Multiflora
 Rosa multiflora
 Rosa eglanteria
 R. multiflora
 Hypericum spp.
 Limonium nashii
 Rhus glabra
 R. copallina
 Viburnum acerifolium
 Parthenocissus quinquefolia
 Hamamelis virginiana

WILDFLOWERS, GRASSES, FERNS

Alfalfa
 Alyssum, Hoary
 Anemone, Rue
 Asparagus, Wild
 Aster, Heart-leaved
 Aster, New York
 Aster, White wood
 Avens, White
 Baneberry, White
 Bindweed, Hedge
 Bindweed, Field
 Bluebells, Virginia
 Burdock, Common
 Buttercup, Common Tall
 Butter-and-Eggs
 Catnip
 Celandine
 Chickweed, Mouse-eared
 Chicory
 Clover, White
 Clover, Red
 Clover, Yellow Hop
 Daisy, Ox-eye
 Dandelion, Common
 Dock, Curled
 Dogbane, Spreading
 Evening Lychnis
 Fern, Marsh
 Fern, Sensitive

Medicago sativa
 Berteroa incana
 Anemonella thalictoides
 Asparagus officinalis
 Aster cordifolius
 A. novae-belgii
 A. divaricatus
 Geum canadense
 Actaea pachypoda
 Convolvulus sepium
 C. arvensis
 Mertensia virginica
 Arctium minus
 Ranunculus acris
 Linaria vulgaris
 Nepeta cataria
 Chelidonium majus
 Cerastium arvense
 Cichorium intybus
 Trifolium repens
 T. pratense
 T. agrarium
 Chrysanthemum leucathemum
 Taraxacum officinale
 Rumex crispus
 Apocymum androsaemifolium
 Lychnis alba
 Telypteris palustris
 Onoclea sensibilis

APPENDIX F

BOTANICAL INVENTORY- HOMMOCKS MARSH COMPLEXWILDFLOWERS, GRASSES, FERNS- cont.

Fleabane, Daisy	<i>Erigeron annuus</i>
Foxtail, Meadow	<i>Alopecurus</i> spp.
Geranium, Wild	<i>Geranium maculatum</i>
Goldenrod, Seaside	<i>Solidago sempervirens</i>
Goldenrod, Lance-Leaved	<i>S. graminifolia</i>
Goldenrod, Slender	<i>S. erecta</i>
Grass, Blue	<i>Poa pratensis</i> var.
Grass, Cord	<i>Spartina pectinata</i>
Grass, Reed Canary	<i>Phalaris arundinacea</i>
Hawkweed, Mouse-Ear	<i>Hieracium pilosella</i>
Heal-all	<i>Prunella vulgaris</i>
Horsetails	<i>Equisetum</i> spp.
Jack-in-the-Pulpit	<i>Arisaema dracontium</i>
Jewelweed (Spotted Touch-Me-Not)	<i>Impatiens capensis</i>
Joe-Pye Weed	<i>Eupatorium</i> spp.
Knotweed, Japanese	<i>Polygonum cuspidatum</i>
Knotweed, Virginia (Jumpseed)	<i>Tovara virginiana</i>
Lamb's quarters (Pigweed)	<i>Chenopodium alba</i>
Lettuce, Tall Blue	<i>Lactula biennis</i>
Loosestrife, Purple	<i>Lythrum salicaria</i>
Milkweed, Common	<i>Asclepias syriaca</i>
Mullein, Common	<i>Verbascum thapsus</i>
Mullein, Moth	<i>V. blattaria</i>
Mustard Garlic	<i>Alliaria officinalis</i>
Nettle, Stinging	<i>Urtica dioica</i>
Nightshade, Bittersweet	<i>Solanum dulcamara</i>
Nightshade, Enchanter's	<i>Circaea quadrisulcata</i>
Phlox, Wild Blue	<i>Phlox divaricata</i>
Phragmites	<i>Phragmites</i> spp.
Pineapple Weed	<i>Matricaria matricariodes</i>
Plantain, Common	<i>Plantago major</i>
Pokeweed	<i>Phytolacca americana</i>
Queen Anne's Lace	<i>Daucus carota</i>
Ragweed, Common	<i>Ambrosia artemisiifolia</i>
St. Johnswort, Common	<i>Hypericum perforatum</i>
Saxifrage, Early	<i>Saxifraga virginiensis</i>
Sedges	<i>Cyperus</i> spp.
Smartweed	<i>Polygonum pensylvanicum</i>
Solomon's Seal	<i>P. pubescens</i>
Sorrel, Wood	<i>Oxalis stricta</i>
Star-Grass, Yellow	<i>Hypoxis hirsuta</i>
Strawberry, Wild	<i>Fragaria virginiana</i>
Thistle, Bull	<i>Chelone glabra</i>
Vetch, Blue	<i>Vicia cracca</i>
Vetch, Crown	<i>Coronilla varia</i>
Violet, Common blue	<i>Viola papilionacea</i>

APPENDIX F

BOTANICAL INVENTORY- HOMMOCKS MARSH COMPLEX

WILDFLOWERS, GRASSES, FERNS- cont.

Violet, Smooth Yellow
Violet, Sweet White
Waterleaf, Virginia

V. pennsylvanica
V. lauceolata
Hydrophyllum virginianum

Source: Consultant Stephen Coleman 1992-1993.

APPENDIX G

BIRD SPECIES - HOMMOCKS SALT MARSH COMPLEX

KEY:

1 Consultant Stephen Coleman 1992-1993

*** Occasional or rare**

NY State DEC list (1983)

S SPECIES OF SPECIAL CONCERN

T THREATENED SPECIES

V VULNERABLE SPECIES

e, s, t NY State DEC list (1987)

GAVIIFORMES

S Common Loon *Gavia immer*

PODICIPEDIFORMES

Horned Grebe *Colymbus auritus*¹

PELECANIFORMES

Double-crested Cormorant *Phalacrocorax auritus*¹

CICONIIFORMES

Great Blue Heron *Ardea herodias*¹
 Great Egret *Casmerodius albus*¹
 Snowy Egret *Egretta thula*¹
 Black-crowned Night Her. *Nycticorax nycticorax*¹
 Green Heron *Butorides striatus*¹
 American Bittern *Botaurus lentiginosus*
 Glossy Ibis *Plegadis falcinellus*

ANSERIFORMES

Mute Swan *Cygnus olor*¹
 Canada Goose *Branta canadensis*¹
 Amer. Black Duck *Anas rubripes*¹
 Mallard *A. platyrhynchos*¹

FALCONIFORMES

Sharp-shinned Hawk *Accipiter striatus*¹
Tt Northern Harrier *Circus cyaneus*
 Red-tailed Hawk *Buteo jamaicensis*¹
Tt Osprey *Pandion haliaetus*¹
 American Kestrel *Falco sparverius*
 Merlin *F. columbarius*

GALLIFORMES

Ring-necked Pheasant *Phasianus colchicus*¹

GRUIFORMES

American Coot *Fulica americana*¹

APPENDIX G

BIRD SPECIES - HOMMOCKS SALT MARSH COMPLEX

CHARADRIIFORMES

	Semipalmated Plover	Charadrius semipalmatus ¹
	Killdeer	C. vociferous ¹
	Greater Yellowlegs	Tringa melanoleuca ¹
	Lesser Yellowlegs	T. flavipes
	Spotted Sandpiper	Actitis macularia
	Herring Gull	Larus argentatus ¹
	Ring-billed Gull	L. delawarensis ¹
	Laughing Gull	L. atricilla ¹
Tt	Common Tern	Sterna hirundo

COLUMBIFORMES

	Mourning Dove	Zenaida macroura ¹
	Rock Dove	Columba livia ¹

CAPRIMULGIFORMES

Ss	Common Nighthawk	Chordeiles minor ¹
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CORACIIFORMES

	Belted Kingfisher	Megasceryle alcyon ¹
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PICIFORMES

	Common Flicker	Colaptes auratus ¹
	Downy Woodpecker	Picoides pubescens ¹

PASSERIFORMES

	Tyrannidae-Flycatchers	
	Eastern Phoebe	Sayornis phoebe ¹

	Hirundinidae-Swallows	
	Barn Swallow	Hirundo rustica ¹
	Tree Swallow	Iridoprocne bicolor ¹

	Corvidae-Jays, Crows	
	Fish Crow	Corvus ossifragus ¹
	American (Common) Crow	C. brachyrhynchos ¹
	Blue Jay	Cyanocitta cristat ¹

	Paridae- Titmice	
	Black-capped Chickadee	Parus atricapillus ¹
	Tufted Titmouse	P. bicolor ¹

	Sittidae-Nuthatches	
	White-breasted Nuthatch	Sitta carolinensis ¹

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BIRD SPECIES - HOMMOCKS SALT MARSH COMPLEX

Troglodytidae- Wrens	
House Wren	Troglodytes aedon ¹
Carolina Wren	Thryothorus ludovicianus ¹
Mimidae-Mimic Thrushes	
Brown Thrasher	Toxostoma rufum
Gray Catbird	Dumetella carolinensis ¹
Northern Mockingbird	Mimus polyglottos ¹
Turdidae-Thrushes	
Ss Eastern Bluebird	Sialia sialis*
American Robin	Turdus migratorius ¹
Gray-Cheeked Thrush	Catharus minimus
Swainson's Thrush	C. ustulatus
Wood Thrush	Hylocichla mustelina ¹
Sylviidae - Kinglets, Gnatcatchers:	
Ruby-crowned Kinglet	Regulus calendula
Golden-crowned Kinglet	R. satrapa ¹
Bombycillidae - Waxwings:	
Cedar Waxwing	Bombycilla cedrorum ¹
Sturnidae - Starlings:	
European Starling	Sturnus vulgaris ¹
Vireonidae-Vireos	
Red-eyed Vireo	Vireo olivaceus ¹
Parulidae - Wood Warblers:	
Northern Parula Warbler	Parula americana
Black-throated Green War	Dendroica virens ¹
Black & White Warbler	Mniotilta varia ¹
Black-throated Blue War.	Dendroica caerulescens
Magnolia Warbler	D. magnolia
Yellow-rumped Warbler	D. coronata ¹
Chestnut-sided Warbler	D. pensylvanica ¹
American Redstart	Setophaga ruticilla ¹
Blue-winged Warbler	Vermivora pinus ¹
V Yellow Warbler	Dendroica petechia ¹
S Wilson's Warbler	Wilsonia pusilla
Common Yellowthroat	Geothlypis trichas ¹
Ploceidae - Weaver Finches:	
House Sparrow	Passer domesticus ¹

APPENDIX G

BIRD SPECIES - HOMMOCKS SALT MARSH COMPLEX

Icteridae - Blackbirds, Orioles:

Red-winged Blackbird	Agelaius phoeniceus ¹
Brown-headed Cowbird	Molothrus ater ¹
Common Grackle	Quiscalus guiscula ¹
Bobolink	Dolichonyx oryzivorus
V Eastern Meadowlark	Sturnella magna
Northern Oriole-Baltimore	Icterus galbula ¹

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Fringillidae - Finches, Sparrows:

Northern Junco	Junco hyemalis ¹
Northern Cardinal	Cardinalis cardinalis ¹
House Finch	Carpodacus mexicanus ¹
American Goldfinch	Carduelis tristis ¹
Indigo Bunting	Passerina cyanea ¹
Rufous-sided Towhee	Pipilo erythrophthalmus ¹
White-throated Sparrow	Zonotrichia albicollis ¹
Chipping Sparrow	Spizella passerina ¹
Fox Sparrow	Passerella iliaca ¹
Song Sparrow	Melospiza melodia ¹

APPENDIX G

BIOLOGICAL INVENTORY - HOMMOCKS SALT MARSH COMPLEX

MAMMALS

Eastern Chipmunk	Tamias striatus ¹
White-tailed Deer	Odocoileus virginianus ¹
Common Eastern Mole	Scalopus aquaticus ¹
White-footed Deer Mouse	Peromyscus leucopus ¹
Muskrat	Ondatra zibethicus ¹
Opossum	Didelphis marsupialis ¹
Eastern Cottontail Rabbit	Sylvilagus floridanus ¹
Raccoon	Procyon lotor ¹
Brown (Norway) Rat	Rattus norvegicus ¹
Short-tailed Shrew	Blarina brevicauda ¹
Striped Skunk	Mephitis monax ¹
Eastern Gray Squirrel	Sciurus carolinensis ¹
Black Squirrel	S. niger
North American Field Vole	Microtus pennsylvanicus ¹
Woodchuck	Marmota monax ¹

REPTILES

Northern Diamondback Terrapin	Malaclemys terrapin
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AMPHIBIANS

Gray Tree Frog	Hyla versicolor ¹
Bull Frog	Rana catesbeiana ¹
Green Frog	R. clamitans ¹
American Toad	Bufo americanus ¹

INSECTS

Damselfly
Dragonfly
Praying Mantis

AQUATIC SPECIES

Horseshoe Crab	Limulus polychamus ¹
Fiddler Crab	Uca minor ¹
Marsh Snail	Amnicola spp. ¹
Ribbed Mussel	Geukensia demissa

FISH

Alewives	Alosa pseudoharengus
Striped Bass	Morone saxatilis
Bluefish	Pomatomus saltatrix
American Eel	Anguilla rostrata
Flounder, winter	Pseudopleuronectes americanus
Killifish	Fundulus spp.
Mackerel	Scomber scombrus
Menhaden	Brevoortia tyrannus
Porgy	
Silversides	Menidia spp.
Tautog (Blackfish)	Tautoga onitis

APPENDIX H

MANAGEMENT RECOMMENDATIONS FOR THE HOMMOCKS SALT MARSH COMPLEX¹

by Stephen W. Coleman, Environmental Consultant, December 1993

Field observations of the Hommocks Salt Marsh Complex were conducted from March through November 1993. The Hommocks Salt Marsh Complex consists of a mixture of habitats including open fields, woods and meadows, salt marsh, intertidal flats and open water. The water depth tends to be shallow and consists mostly of salt or brackish water. Land use throughout the area includes a mixture of residential and commercial developments.

Management recommendations for the Hommocks Salt Marsh Complex follow standard operating practices used in natural area management. The eventual implementation of these management recommendations will require someone familiar with plant identification to oversee that proper restoration and maintenance strategies are performed correctly.

I. PRESENT PROBLEMS AND/OR THREATS

A. VISITOR ACCESSIBILITY AND PERCEPTIONS

The Hommocks Conservation Area is not clearly identified for the first time visitor. Trail signs are absent and once they find the area, it is not entirely clear where one should park and where the trail begins and ends.

RECOMMENDED ACTION

1. Paint all wood posts a consistent color that helps identify that each entrance location is part of the same area. "Brown paint with Yellow or White Lettering" is often used throughout other Westchester sites.
2. Maintain erected signs with appropriate signage that identifies the area as the Hommocks Conservation Area.
3. Garbage cans that are located at each entrance should be maintained on a regular basis and if possible replaced with newer ones that have a locking cover. They should also be placed in areas that are easier for maintenance crews to maintain on a regular basis.
4. Parking along the road is not an ideal situation. Cars parked along the road can be a nuisance to residents, passing motorists, and a potential safety hazard for visitors. A new parking area could be created at the corner of Hommocks Road and Oak Lane for up to 6 vehicles. A parking area in this location would serve to create a definable entrance to the Hommocks Conservation Area, remove parking from Hommocks Road, and create for the

¹ The complete, detailed Management Report may be seen at the Town of Mamaroneck Conservation Department. Appendix H is an excerpt of that report.

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visitor a clearly marked beginning point to the trail system. The periphery of the parking area could be screened with vegetation that is native to the site. An evergreen border with some deciduous shrubs would be appropriate. Included within the new parking area should be a trail kiosk that would provide information for visitors about the Hommocks Conservation Area, a large trail map, registration and other informational materials.

B. TRAIL SYSTEM

The present trail system needs some major repairs to improve the safety and overall experience for the visitor. The present layout of the trails is confusing in two areas: the field/meadow trail section and the lower trail nearest Hommocks Road. In addition, all of the boardwalks are in need of maintenance and stabilization.

RECOMMENDED ACTION

1. Make necessary repairs to the boardwalk sections of the trails.
2. At the junction of the main boardwalk where it goes out into the marsh and terminates was probably designed to serve as an area to allow easier access to the salt marsh. This could be re-built and expanded to serve as a sampling area for educational groups studying the salt marsh environments.
3. Where the trail ends at the school playing field, it would be desirable to visually demonstrate that the trail continues to the other end of the school playing field. Either marking the trail edge or creating a trail inside the edge of the playing field would solve this problem for visitors.
4. The trail within the field/meadow area needs to have a marking system to visibly show visitors that the trail goes around the edge of the field/meadow.
5. If the recommendation for creating a new parking area is adopted, the following improvements should also be made to the existing trail system:
 - a. The trail should begin and end at the new parking lot area.
 - b. The trail layout should be designed to be a one-way loop.
 - c. The trail entrances along Hommocks Road should be removed, posts should be taken out or chained with a sign indicating the direction for the new entrance area. The trail section for each entrance should be changed to be one continuous loop and marked with a sign, or vegetation planted to discourage their use by visitors and residents.
 - d. Garbage cans should only be present at the new parking area.

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- e. At the far edge of the salt marsh by the school playing field, it may be appropriate to install an informational sign/shelter that explains the Hommocks Conservation Area.

II. HABITAT MANAGEMENT AND RESTORATION

The Hommocks Salt Marsh Complex represents an ecological system that has been significantly altered due to internal and external influences. The Hommocks Conservation Area consists of approximately five distinct habitat types. These include a mixture of woodland habitats, an open field/meadow area, a salt marsh, intertidal flats within the salt marsh area, and an open water environment. Each habitat area has shown the adverse impacts of land use practices and encroachment from adjacent land use activities. The management recommendations that follow are designed to help restore and improve the natural functioning of this unique and very important ecological resource.

A. WOODLANDS/FOREST

The woodland habitat present within the Hommocks Salt Marsh Complex primarily refers to the areas adjacent to Hommocks Road. This wooded section provides a distinct transition zone between the residential homes and golf course on one side and the salt marsh complex on the other side. In many instances, this wooded section helps to serve as a corridor for wildlife species to move between habitat zones.

RECOMMENDED ACTION

1. Asiatic bittersweet has aggressively become established throughout the woodland habitat. This aggressive vine needs to be pruned back at its roots in successive years until the majority of it has been weakened and starts to die back.
2. Japanese Barberry and Japanese Honeysuckle should be spot cut and removed from the site to favor some of the more indigenous species.
3. Additional pruning of shrubs and vines should occur to keep them out of the trail areas and where they are encroaching other more sensitive native species.
4. Ailanthus and Locust trees should be cut immediately from the site. Ailanthus has become well established and will continue to take over the site and drastically change the transition zone between the forest edge and the salt marsh.
5. Introduced cultivated species like Blue Spruce should be cut and removed from the site. There is only one individual of this species present on the study area.
6. Several trees have been removed recently along the Hommocks Road adjacent to the golf course. This has served to alter the corridor that was present for wildlife species. In addition, these changes will encourage the introduction of more aggressive invasive species.

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Periodic surveys of what species become established will need to be monitored.

B. FIELD/MEADOW

The field/meadow habitat has a relatively good diversity of species and its small size allows the opportunity to create a more self-sustaining system with minimal management and maintenance. Species commonly associated with a farm/agricultural operation can be observed within the field/meadow. This is representative of former land use practices within this particular area. The field/meadow site has a minimal transition area to the salt marsh environment and consists of species that have adapted well to the limitations of the site. This area could be restored to demonstrate and reveal typical successional stages within a natural plant community.

RECOMMENDED ACTION

1. The trail around the edge of the field/meadow should be mowed frequently during the growing season. Poison Ivy (Rhus radicans) should be pulled out along the edges of the trail as needed.
2. All tree, shrub and vine saplings and shoots should be cut back within the open meadow area once per year.
3. The open meadow area should not be mowed every season as is currently the practice. Instead the meadow should be mowed every 3-4 years as long as step # 2 above is being done on an annual basis.
4. To restore the diversity of species present within the meadow it is advisable to add new plants on an annual basis. This will serve to increase diversity and in the long run help sustain the plant community. Perennial native wildflowers and grasses should be planted every spring or fall. This practice should continue for 3 -5 years.
5. Along the Hommocks Road border, a new corridor should be established to isolate the road and golf course from the field/meadow area. This should be done in two layers. First a layer of trees followed by a layer of shrubs to create two distinct zones of vegetation. Tree species should be native species. Evergreen trees would be ideal to create more of a screen from the golf course area. The shrub layer should consist of native species, preferably berry and seed producing species that are preferred by wildlife.
6. The screening border along the edge of the salt marsh should be maintained. Some pruning of the lower branches should be done to create a few more layered vistas from the field/meadow trail area into the salt marsh. All vines that are growing around these trees should be cut and later removed.

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C. SALT MARSH

The Salt Marsh appears to be relatively stable with the plant community fairly well established, especially the shrub layer. Species present are representative of other salt marsh communities. The loss of tidal flow throughout this area more than likely has influenced the growth of monotypic stands of salt marsh shrub species. A significant amount of pollution is evident within the salt marsh environment. Garbage and debris is readily found along with evidence of petroleum remains at the base of many of the plants.

RECOMMENDED ACTION

1. The phragmites have taken over the area between the two boardwalks and has virtually eliminated any other species. They should be cut and removed to encourage a more open growth pattern and establishment of other marsh grass species. Phragmites cannot be eradicated, however, a judicious cutting and removal a few times a year can have a pronounced effect on its aggressiveness.
2. If possible, a planting program to establish more diversity of salt marsh grasses would greatly improve the value of this area. Cord grass (Spartina pectinata), is readily available from many nursery sources. The key criteria would be to have the personnel to implement this type of project.
3. The edge of the salt marsh adjacent to the school field could be planted with a shrub and tree border to screen this area from the school field and create a more permanent buffer between these two areas.

D. INTERTIDAL FLATS

The intertidal flats habitat zone is well represented and provides plenty of suitable area for salt marsh species. There appears to be a limited abundance and activity by salt marsh organisms. Few crabs were observed in the area. Observed use by wildlife species appeared to be infrequent and these areas were not functioning as a principal feeding area. Wildlife species were observed using the area but were not actively exhibiting feeding behavior. The amount of intertidal habitat appears average for the site and relatively free from encroachment by shrub species. Through time, due to less tidal flushing action, it is likely that the amount of this particular habitat will begin to diminish in area.

RECOMMENDED ACTION

No specific recommendations at this time.

E. OPEN WATER

A large section of open water habitat is present within the salt marsh complex. The open water

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area is relatively shallow and appears to remain relatively consistent. At entry points there is evidence of siltation that is helping to reduce the amount of open water habitat available. A lot of debris is evident in the water. The water is murky and has a lot of suspended solids. Aquatic vegetation is minimal. Considerable use by wildlife species was observed, however, it appeared to be mainly for resting and loafing.

RECOMMENDED ACTION

1. A monitoring program should be established to determine the inflow of siltation into the salt marsh area from upstream entry point sources and the influence of sewer system and storm water discharge.
2. The water should be tested to determine the presence of any leachate material from the former landfill site or the leaf mulch operation.
3. More rip-rap material should be placed along the edges to minimize shoreline erosion and increased sedimentation.
4. Installation of a permanent siltation barrier should be investigated for the leaf mulch operation and for the present development project adjacent to the school. Further testing needs to be conducted to determine whether this type of device would assist with minimizing potential impacts to the salt marsh habitats.
5. The impact of the old barge remains within the salt marsh area requires further analysis to determine its contributive effect on the environment. Unless an educational value is associated to the old barge, it should be removed and disposed of properly.

III. EDUCATIONAL VALUE AND POTENTIAL USES

The Hommocks Salt Marsh Complex provides a wealth of potential for educating residents and visitors about the values of preserving and restoring natural areas. The proximity to the school and easy accessibility for visitors enables this site to serve as a major outreach service to the residents and area school children. Expansion of the informational materials provided about the site could enhance people's understanding about the Town's natural resources and why these critical areas have been preserved.

RECOMMENDED ACTION

1. A new trail map should be developed for the Hommocks Conservation Area. This should be designed to be part of a brochure that includes information about the Town's Conservation Areas and related programs and services.
2. A trail kiosk should be built that includes within its design a place to exhibit brochures and additional literature about the site.

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3. A self guided brochure could be developed in conjunction with making the trail system into a self-guided trail. To accentuate the interpretive value and interest level of visitors the self-guided trail and brochure should not exceed 10-12 stations.
4. If the recommendation for a new parking area is implemented, it would be a good time to restructure the trail system as outlined above. These improvements could be packaged together to help communicate to residents the exciting plans that are being put into place to restore and enhance the area for their enjoyment and use.
5. The CAC or CZMC should create an informative newsletter or brochure that talks about the Town's Critical Environmental Areas to educate the residents and visitors about these unique resources. It also may help residents to understand that these areas require management and maintenance and are not areas where people can dispose of their lawn clippings and other trash. It also could be a source to advertise for volunteer or community support to carry out some of the management initiatives outlined in this report.
6. Efforts should be made to interest local science teachers in utilizing the Hommocks Salt Marsh Complex for teaching environmental science and as a living laboratory for applying classroom concepts. Students could get involved in water testing, siltation studies, planting trees, shrubs and wildflowers, and many other experiential learning exercises. The boardwalk could be redesigned or modified to include a sampling station area.

APPENDIX I

MANAGEMENT PLAN FOR THE RESERVOIR-SHELDRAKE-LEATHERSTOCKING CRITICAL ENVIRONMENTAL AREA (RSL-CEA)¹

by Stephen W. Coleman, Environmental Consultant, December 1992.

I. OVERVIEW

Field Observations of the Reservoir-Sheldrake-Leatherstocking Critical Environmental Area (RSL-CEA) were conducted from February through November 1992. The RSL's main ecological habitats and communities consists of the 60 acre Larchmont Reservoir, sections of the West Branch of the Sheldrake River, the Bonnie Briar and Winged Foot Golf Courses (totaling over 421 acres) and the Sheldrake-Leatherstocking Conservation Area (comprising 55 acres). The Sheldrake Watershed and its tributaries provide the connecting links for the majority of habitats found within the RSL-CEA.

The importance of the RSL-CEA cannot be understated. The area due to its configuration of residential properties, private golf courses, and Town and Village Conservation areas provides a critical mass of open spaces resources. It is this extensive mosaic network of open space and natural resources which help contribute to the unique beauty and character of Mamaroneck and Larchmont. The values of the RSL-CEA are well documented within the LWRP and will not be mentioned in detail here.

The long history of existing land use patterns within the RSL-CEA and development in surrounding communities have created an extensive "green" corridor. The configuration of these properties and existing road systems have created a critical--though fragmented--"stable"--corridor for local wildlife populations. The RSL has an extensive sampling of most ecological communities typical of the Westchester region. Several stages of wooded communities are present, along with several wetlands, streams, ponds, meadows and fields.

II. GENERAL RECOMMENDATIONS

A. OPEN SPACE RESOURCES

The value to the TOM of open space resources provided within the RSL-CEA represent irreplaceable resources that could not be re-created. Based upon field observations and data provided as part of the recommendations submitted on the proposed development of the Bonnie Briar Country Club, they support the establishment of a new zoning district designated as **Recreation Zone**. The Bonnie Briar Country Club, The Winged Foot Country Club and a portions of the Hampshire Country Club should be included within this zone.

B. WATER RESOURCES

A majority of the fresh water resources within the TOM are located in the RSL-CEA. These include several wetland communities consisting of reservoirs, streams, wooded

¹ The complete, detailed Management Plan may be seen at the Town of Mamaroneck Conservation Department. Appendix I is an excerpt of that plan.

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swamps, wet meadows, and ephemeral ponds. The Sheldrake Watershed and its tributaries are the major water resource.

Natural surface water drainage patterns are still evident throughout the site, especially in the two golf courses, even though the natural contours of the landscape have been modified. The history of flooding within the golf courses, primarily Bonnie Briar, reflect that prior drainage patterns are still functioning to some degree despite present land use patterns.

Natural buffers adjacent to the Sheldrake River and its tributaries are basically non-existent, which further contributes to the intensity of siltation and erosion of the stream and its banks. The proper placement of vegetative buffer strips would help alleviate some of the problems from increased surface water runoff.

RECOMMENDATIONS

The following recommendations would provide greater protection and enhancement of existing water resources. It is important that any protective or improvement strategy adopted, bear in mind, that for enhancement measures to be successful, will require a long-term program. Several years are often needed to rehabilitate or improve the functioning of water resources.

1. Any development projects under consideration should require as part of the subdivision plan the cumulative effects of upstream development on the proposed new project and its impact on present water resources at the site and those downstream.
2. The Town of Mamaroneck should adopt a "no net loss" policy regarding its water resources especially wetlands or wetland habitats. All mitigation measures should be considered to avoid impacts to existing wetland resources with the exception of the common mitigation technique of replacing existing wetlands with the creation of new wetlands in other areas of a development project. Creating wetlands is not an exact science and in a majority of the cases, the results have not come even close to duplicating the natural features and functioning of an existing wetland system. All attempts be made to restore and enhance rather than replace a wetland.
3. Vegetative buffers should be established for all water resources within the RSL-CEA. They are as follows:
 - a. Ephemeral Ponds- Temporary, seasonal flooded areas which should have a minimum buffer of 50 feet. This is necessary to provide sufficient terrestrial habitat for those animals directly associated with this type of community. Ephemeral ponds or vernal ponds, are located at the Larchmont Reservoir, within the Sheldrake-Leatherstocking Conservation Area near Knollwood Drive, the Bonnie Briar and Winged Foot Country Clubs.
 - b. Wooded Swamps- A buffer should be established of a minimum of 100

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feet with a goal to extend them to 300 - 400 feet. These wetlands are located throughout the area. During field investigation, another wooded swamp was identified on the northeastern section of Bonnie Briar. This area probably represents remnants of wetlands that were once adjacent to the Sheldrake that is now piped underground and channeled.

c. Sheldrake River and its Tributaries--within Bonnie Briar where the lower Sheldrake traverses the property, the natural ability of this system to slow down the rate of runoff is severely limited. A vegetative buffer strip extending out a minimum of 20 feet with a mixture of meadow grasses that are allowed to grow taller and maintained at different heights and cut in different directions, would help trap sediments and filter some of the surface water runoff. If these buffers are properly designed it should have minimal impact on the fairways.

4. The placement of rip-rap along the bank of the Sheldrake combined with planting of meadow grasses would be another approach to trap and hold sediments longer before entering the river.

5. A long-term strategy would be to recommend the installation of circulation pumps/filtration devices to minimize the build-up of nutrients combined with periodic draining of the ponds themselves.

6. Sediment traps properly placed along the Sheldrake would help minimize some of the downstream pollution that occurs during major storms. In addition, water detention systems could be installed to hold back some of the storm water discharge.

7. Managing the harmful impacts from pesticides, herbicides and fertilizers is a major concern that is not restricted only to the RSL-CEA. Because the RSL-CEA has a high percentage of steep slopes, and the bedrock is close to the surface throughout the Sheldrake Watershed, the impact from chemicals is of major significance on surface and ground water resources.

a. The Town should require that an integrated pest management plan be developed for each of the golf courses to encourage or mandate adoption of an "organic" approach to golf course management. The plan should include a surface and ground water monitoring program.

b. The Town should have the annual ground water recharge rate tested to help predict what the current overall impact of nitrate compounds are within the groundwater supplies.

c. The use of synthetic fungicides which are often used to kill most weeds and insects should be discouraged.

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d. An overall monitoring program that reviews annual phosphorous and nitrogen loads would enable a more accurate prediction of what the Sheldrake Watershed's natural retention capabilities are.

e. The golf courses should be encouraged to consider the use of native grasses and a cutting rotation that allows grasses to grow longer. This will enable grasses to develop a stronger root system which in turn makes the plants stronger and less susceptible to disease; hence, less need for fungicides and herbicides.

C. WILDLIFE RESOURCES

Due to the long history of existing land use practices, wildlife populations are well represented with a good diversity of species present. The area is primarily second growth forests with various successional stages. The composition of plant communities and species is average with a good diversity of trees, shrubs and wildflowers typical of most Westchester naturalized environments.

RECOMMENDATIONS

1. The Town should adopt a "no net loss approach" to habitat management. This would imply that if any habitats are altered due to development or land use changes, that the areas altered should be replaced, with the exception of wetlands as previously noted.
2. All efforts should be made to minimize habitat fragmentation and if possible, expanding the size of these corridors would be preferred, especially in areas where there are gaps in the corridors.
3. A more thorough study should be conducted that looks at the relationship between wildlife populations, habitat suitability and productivity, to document the potential impacts on species composition and survivability from land use changes.
4. Periodic follow-up surveys should be conducted to document changes over time of species distribution throughout the RSL-CEA.
5. Applied management (for example, mechanical removal of Japanese Knotweed and Black Locust) should be implemented in dealing with the encroachment of exotic plant or animal species within the RSL-CEA.

D. SHELDRAKE--LEATHERSTOCKING CONSERVATION AREA

RECOMMENDATIONS

1. The entrance signs at all points should be improved. Painting of the signs to make them

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more visible would help people notice the area and increase usage.

2. The current Walk Books should be revised and simplified. The interpretive trail markers are in a state of disrepair and should either be removed or replaced to avoid confusion to visitors.

3. A new trail information kiosk should be erected at the major entrances to the trail system. Materials that could be displayed would include a registration book, trail maps, walk books, information on other Town programs, a blown-up laminated map of the entire trail system and rules and regulations. This would require regular maintenance but would help create a more active utilized look to the area.

4. Actual trail improvements appear to be under control by summer work crews and should continue.

5. More extensive improvements could be made to the trail system but would require additional resources and would require a more careful analysis than possible within this report.