

Appendix C: Biodiversity of the Upper Schoharie Creek

Prepared by the NYSDEC Hudson River Estuary Program, February 2007

Predicted Terrestrial Vertebrate Species (source: Hudson River Valley GAP)

Terrestrial, vertebrate species that are predicted to occur within the watershed based upon presumed associations of species with habitats. See the HRV-Gap Analysis Project report to view predicted species distribution maps. *New York Natural Heritage Program Rarity Rank Definitions provided at the end of this document.*

Key: TNC Status: For State and Global Rank explanations see www.nynhp.org; Legal Status: FE = Federal Endangered, FT = Federal Threatened, SE = State Endangered, ST = State Threatened, G = Game species, SC = State Special Concern; NYNHP Species: Rare species tracked by the NY Natural Heritage Program; NYSDEC SGCN: Species of Greatest Conservation Need included in State Wildlife Plan; Hudsonia Regional: Hudson Valley regional status: R = regionally rare, Rm = regionally rare migrant, S = regionally scarce, D = declining, V = vulnerable

Mammals		TNC Status	Legal Status	NYNHP Species	NYSDEC SGCN	Regional	Notes: (This section lists mapping criteria for elevation and nearness to water identified in the HRV-GAP. For more information on habitat associations, see the HRV-GAP report and references below.)
Big Brown Bat	<i>Eptesicus fuscus</i>	G5					
Eastern Pipistrelle	<i>Pipistrellus subflavus</i>	G5, S3				R	
Eastern Red Bat	<i>Lasiurus borealis</i>	G5, S5B, SZN			X	R	
Eastern Small-Footed Myotis	<i>Myotis leibii</i>	G3, S2	SC	X	X		
Hoary Bat	<i>Lasiurus cinereus</i>	G5, S4B, SZN			X	R	
Indiana Myotis	<i>Myotis sodalis</i>	G2, S1	FE, SE	X	X		
Little Brown Myotis	<i>Myotis lucifugus</i>	G5					
Northern Long-eared Myotis	<i>Myotis septentrionalis</i>	G2G3					
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	G5, S4B, SZN	SC		X	Rm	
Eastern Cottontail	<i>Sylvilagus floridanus</i>	G5					
Snowshoe Hare	<i>Lepus americanus</i>	G5					
Eastern Chipmunk	<i>Tamias striatus</i>	G5					
Woodchuck	<i>Marmota monax</i>	G5					
Eastern Gray Squirrel	<i>Sciurus carolinensis</i>	G5					Found in suitable habitats at elevations below 910 m (3000 ft)
Northern Flying Squirrel	<i>Glaucomys sabrinus</i>	G5					Found in suitable habitats at elevations above 180 m (600 ft)
Red Squirrel	<i>Tamiasciurus hudsonicus</i>	G5					
Southern Flying Squirrel	<i>Glaucomys volans</i>	G5					
Deer Mouse	<i>Peromyscus maniculatus gracilis</i>	G5					
Meadow Jumping Mouse	<i>Zapus hudsonius</i>	G5					
Woodland Jumping Mouse	<i>Napaeozapus insignis</i>	G5, S5				R	
White-footed Mouse	<i>Peromyscus leucopus</i>	G5					
Meadow Vole	<i>Microtus pennsylvanicus</i>	G5					

Rock Vole	<i>Microtus chrotorrhinus</i>	G5					Found in suitable habitats at elevations above 760 m (2500 ft)
Southern Red-backed Vole	<i>Clethrionomys gapperi</i>	G5					
Woodland Vole	<i>Microtus pinetorum</i>	G5					Found in suitable habitats at elevations below 610 m (2000 ft)
Long-tailed Shrew	<i>Sorex dispar</i>	G4, S4				R	Found in suitable habitats at elevations above 180 m (600 ft)
Masked Shrew	<i>Sorex cinereus</i>	G5					
Northern Short-tailed Shrew	<i>Larina brevicauda</i>	G5					
Pygmy Shrew	<i>Sorex hoyi</i>	G5					
Smoky Shrew	<i>Sorex fumeus</i>	G5					
Water shrew	<i>Sorex palustris</i>	G5					Found in suitable habitats within 90 m (300 ft) of streams or lakes at elevations between 180 m (600 ft) and 1320 m (4350 ft)
Hairy-tailed Mole	<i>Parascalops breweri</i>	G5					Found in suitable habitats at elevations below 910 m (3000 ft)
Eastern Mole	<i>Scalopus aquaticus</i>	G5					
Star-nosed Mole	<i>Condylura cristata</i>	G5					
American Beaver	<i>Castor canadensis</i>	G5					Found in suitable habitats within 90 m (300 ft) of streams and lakes
Common Muskrat	<i>Ondatra zibethicus</i>	G5					Found in suitable habitats within 90 m (300 ft) of streams and lakes and in all occurrences of Shrub Swamp, Salt Shrub, Emergent Marsh/Open Fen/Wet Meadow, Salt Marsh, and Fresh Water land cover types
Southern Bog Lemming	<i>Synaptomys cooperi</i>	G5, S4				R	Found in suitable habitats at elevations below 1320 m (4350 ft)
Porcupine	<i>Erethizon dorsatum</i>	G5, S5				R	
Coyote	<i>Canis latrans</i>	G5					
Red Fox	<i>Vulpes vulpes</i>	G5					Found in suitable habitats at elevations below 610 m (2000 ft)
Gray Fox	<i>Urocyon cinereoargenteus</i>	G5					Found in suitable habitats at elevations below 610 m (2000 ft)
Black Bear	<i>Ursus americanus</i>	G5, S5	G			S	
Common Raccoon	<i>Procyon lotor</i>	G5					
Fisher	<i>Martes pennanti</i>	G4G5, S4	G			S	
Short-tailed Weasel	<i>Mustela erminea</i>	G5					
Long-tailed Weasel	<i>Mustela frenata</i>	G5					Found in suitable habitats at elevations below 610 m (2000 ft)
Mink	<i>Mustela vison</i>	G5					Found in suitable habitats within 90 m (300 ft) of streams and lakes and in all occurrences of Shrub Swamp, Salt Shrub, Emergent Marsh/Open Fen/Wet Meadow, Salt Marsh, and Fresh Water land cover types
Striped Skunk	<i>Mephitis mephitis</i>	G5					Found in suitable habitats at elevations below 760 m (2500 ft)
Bobcat	<i>Lynx rufus</i>	G5, S4	G			V	
Eastern Cougar	<i>Felis concolor cougar</i>	G5TH, SX	FE, SE		X		Extirpated
White-tailed Deer	<i>Odocoileus virginianus</i>	G5					
Virginia Opossum	<i>Didelphis virginiana</i>	G5					Found in suitable habitats at elevations below 460 m (1500 ft)
River Otter	<i>Lutra canadensis</i>	G5, S5	G		X	S	Found in all land cover types within 90 m (300 ft) of water
Amphibians		TNC Status	Legal Status	NYNHP Species	NYSDEC SGCN	Regional	Notes: (This section lists mapping criteria for elevation and nearness to water identified in the HRV-GAP. For more information on habitat associations, see the HRV-GAP report and references below.)
Jefferson Salamander	<i>Ambystoma jeffersonianum</i>	G5, S4	SC		X		Found in suitable habitats at elevations below 760 m (2500 ft)

Jefferson Salamander Complex	Ambystoma jeffersonianum x laterale	G4, S3	SC		X		Found in suitable habitats at elevations below 760 m (2500 ft)
Spotted Salamander	Ambystoma maculatum	G5, S5				V	Found in suitable habitats at elevations below 610 m (2000 ft)
Eastern American Toad	Bufo americanus americanus	G5					Found in suitable habitats at elevations below 1400 m (4600 ft)
Northern Dusky Salamander	Desmognathus fuscus	G5, S5				D, V	Found in suitable habitats at elevations below 1400 m (4600 ft)
Allegheny Dusky Salamander	Desmognathus ochrophaeus	G5					
Northern Two-lined Salamander	Eurycea bislineata	G5					
Longtail Salamander	Eurycea longicauda longicauda	G5, S2S3	SC	X	X		Found in suitable habitats within 90 m (300 ft) of water
Northern Spring Salamander	Gyrinophilus porphyriticus porphyriticus	G5					Found in suitable habitats at elevations below 910 m (3000 ft)
Four-toed Salamander	Hemidactylium scutatum	G5			X		
Gray Treefrog	Hyla versicolor	G5					
Common Mudpuppy	Necturus maculosus	G5, S4			X		Found in suitable habitats at elevations below 1060 m (3500 ft); Lakes, rivers, and streams
Red-spotted Newt	Notophthalmus viridescens viridescens	G5					
Northern Redback Salamander	Plethodon cinereus cinereus	G5					
Northern Slimy Salamander	Plethodon glutinosus complex	G5					Found in suitable habitats at elevations below 550 m (1800 ft)
Northern Spring Peeper	Pseudacris crucifer crucifer	G5					Found in suitable habitats within 30 m (100 ft) of streams and lake/pond edges
Northern Red Salamander	Pseudotriton ruber ruber	G5, S3S4			X		
Bullfrog	Rana catesbeiana	G5					Found in suitable habitats at elevations below 1060 m (3500 ft)
Green Frog	Rana clamitans melanota	G5					Found in suitable habitats at elevations below 1060 m (3500 ft)
Pickerel Frog	Rana palustris	G5					Found in suitable habitats within 30 m (100 ft) of streams and lake/pond edges at elevations below 760 m (2500 ft)
Northern Leopard Frog	Rana pipiens	G5, S5	G			R	Found in suitable habitats at elevations below 760 m (2500 ft)
Wood Frog	Rana sylvatica	G5, S5	G			V	Found in suitable habitats at elevations below 1400 m (4600 ft)
Reptiles		TNC Status	Legal Status	NYNHP Species	NYSDEC SGCN	Regional	Notes: (This section lists mapping criteria for elevation and nearness to water identified in the HRV-GAP. For more information on habitat associations, see the HRV-GAP report and references below.)
Common Snapping Turtle	Chelydra serpentina serpentina	G5					Found in suitable habitats at elevations below 1060 (3500 ft)
Painted Turtle	Chrysemys picta	G5					Found in suitable habitats at elevations below 910 m (3000 ft); Slow moving stream
Wood Turtle	Clemmys insculpta	G4, S3	SC, G		X		Found in suitable habitats within 1610 m (1 mile) of streams and rivers at elevations below 1060 m (3500 ft)
Timber Rattlesnake	Crotalus horridus	G5, S3	ST		X		Found in suitable habitats at elevations between 30 m (100 ft) and 520 m (1700 ft)

Northern Ringneck Snake	Diadophis punctatus edwardsii	G5					Found in suitable habitats at elevations below 760 m (2500 ft)
Eastern Milk Snake	Lampropeltis triangulum triangulum						Found in suitable habitats at elevations below 610 m (2000 ft)
Smooth Greensnake	Opheodrys vernalis	G5, S4			X	D	Found in suitable habitats at elevations below 610 m (2000 ft)
Northern Redbelly Snake	Storeria occipitomaculata occipitomaculata	G5					Found in suitable habitats at elevations below 550 m (1800 ft)
Eastern Box Turtle	Terrapene c. carolina	G5, S3	SC		X		
Garter Snake	Thamnophis sirtalis	G5					Found in suitable habitats at elevations below 1400 m (4600 ft)

Observed Breeding Birds (source: 1980-1985 Breeding Bird Atlas)

Breeding bird species known or suspected to be breeding within the watershed. The species list is derived from reports of observed breeding bird activity within Breeding Bird Atlas Blocks that overlap the watershed. Parties using these data for environmental review purposes do so at their own risk.

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Birds		TNC Status	Legal Status	NYNHP Species	NYSDEC SGCN	Other Ranking	# Blocks (35 total)	Notes: (This section lists mapping criteria for elevation and nearness to water identified in the HRV-GAP. For more information on habitat associations, see the HRV-GAP report and references below.)
Alder Flycatcher	Empidonax alorum	S5, G5					13	
American Black Duck	Anas rubripes	S4, G4	G		X	WL, PIF	3	
American Crow	Corvus brachyrhynchos	S5, G5					34	
American Goldfinch	Carduelis tristis	S5, G5					33	
American Kestrel	Falco sparverius	S5, G5					10	
American Redstart	Setophaga ruticilla	S5, G5					32	
American Robin	Turdus migratorius	S5, G5					34	
American Woodcock	Scolopax minor	S5, G5	G		X	WL, PIF	9	
Baltimore Oriole	Icterus galbula	S5, G5					29	
Bank Swallow	Riparia riparia	S5, G5					11	Found in suitable habitats within 500 m (1640 ft) of streams and rivers
Barn Swallow	Hirundo rustica	S5, G5					35	
Barred Owl	Strix varia	S5, G5					13	
Belted Kingfisher	Ceryle alcyon	S5, G5					22	Found in suitable habitats within 1000 m (3280 ft) of streams and rivers
Bicknell's Thrush	Catharus bicknelli	S2S3B, G4	SC	X	X	WL, PIF	5	
Black-and-white Warbler	Mniotilta varia	S5, G5					28	
Black-billed Cuckoo	Coccyzus erythrophthalmus	S5, G5			X		2	
Blackburnian Warbler	Dendroica fusca	S5, G5					25	
Black-capped Chickadee	Poecile atricapillus	S5, G5					32	
Blackpoll Warbler	Dendroica striata	S3, G5					7	

Black-throated Blue Warbler	Dendroica caerulescens	NR, G5			X		23	
Black-throated Green Warbler	Dendroica virens	S5, G5					27	
Blue Jay	Cyanocitta cristata	S5, G5					34	
Blue-gray Gnatcatcher	Poliophtila caerulea	S5, G5					5	
Blue-headed Vireo	Vireo solitarius	S5, G5					24	
Blue-winged Warbler	Vermivora pinus	S5, G5			X	WL, PIF	3	
Bobolink	Dolichonyx oryzivorus	S5, G5			X	PIF	15	
Broad-winged Hawk	Buteo platypterus	S5, G5					10	
Brown Creeper	Certhia Americana	S5, G5					13	
Brown Thrasher	Toxostoma rufum	S5, G5			X		21	
Brown-headed Cowbird	Molothrus ater	S5, G5					32	
Canada Goose	Branta Canadensis	S5, G5					1	Found in the Suburban/Residential land cover type when located within 90 m (300 ft) of water
Canada Warbler	Wilsonia Canadensis	S5, G5			X		13	
Cedar Waxwing	Bombycilla cedrorum	S5, G5					34	
Chestnut-sided Warbler	Dendroica pensylvanica	S5, G5					30	
Chimney Swift	Chaetura pelagica	S5, G5					19	
Chipping Sparrow	Spizella passerina	S5, G5					33	
Cliff Swallow	Petrochelidon pyrrhonota	S5, G5					22	
Common Grackle	Quiscalus quiscula	S5, G5					33	
Common Merganser	Mergus merganser	S5, G5					2	
Common Nighthawk	Chordeiles minor	S5, G5					1	
Common Raven	Corvus corax	S5, G5					2	
Common Snipe	Gallinago gallinago	S5, G5					1	
Common Yellowthroat	Geothlypis trichas	S5, G5					33	
Cooper's Hawk	Accipiter cooperii	S4, G5	SC		X		5	
Dark-eyed Junco	Junco hyemalis	S5, G5					29	
Downy Woodpecker	Picoides pubescens	S5, G5					30	
Eastern Bluebird	Sialia sialis	S5, G5					18	
Eastern Kingbird	Tyrannus tyrannus	S5, G5					32	
Eastern Meadowlark	Sturnella magna	S5, G5			X		14	
Eastern Phoebe	Sayornis phoebe	S5, G5					34	
Eastern Screech-Owl	Otus asio	S5, G5					2	
Eastern Towhee	Pipilo erythrophthalmus	S5, G5					27	
Eastern Wood-Pewee	Contopus virens	S5, G5					26	
European Starling	Sturnus vulgaris	SE, G5					34	
Evening Grosbeak	Coccothraustes vespertinus	S5, G5					1	
Field Sparrow	Spizella pusilla	S5, G5					31	
Golden-crowned Kinglet	Regulus satrapa	S5, G5					13	
Golden-winged Warbler	Vermivora chrysoptera	S4, G4	SC		X	WL, PIF	1	
Gray Catbird	Dumetella carolinensis	S5, G5					35	

Great Blue Heron	Ardea herodias	S5, G5		X			10	
Great Crested Flycatcher	Myiarchus crinitus	S5, G5					24	
Great Horned Owl	Bubo virginianus	S5, G5					12	
Green Heron	Butorides virescens	S5, G5					8	Found in suitable habitats at elevations below 610 m (2000 ft)
Green-winged Teal	Anas crecca	S3, G5					2	
Hairy Woodpecker	Picoides villosus	S5, G5					25	
Hermit Thrush	Catharus guttatus	S5, G5					28	
Hooded Merganser	Lophodytes cucullatus	S4, G5					1	
House Finch	Carpodacus mexicanus	SE, G5					19	
House Sparrow	Passer domesticus	SE, G5					29	
House Wren	Troglodytes aedon	S5, G5					32	
Indigo Bunting	Passerina cyanea	S5, G5					26	
Killdeer	Charadrius vociferous	S5, G5					17	
Least Flycatcher	Empidonax minimus	S5, G5					29	
Louisiana Waterthrush	Seiurus motacilla	NR, G5			X		18	Found in suitable habitats within 100 m (330 ft) of streams and rivers
Magnolia Warbler	Dendroica magnolia	S5, G5					23	
Mallard	Anas platyrhynchos	S5, G5					10	Found in the Suburban/Residential land cover type when located within 90 m (300 ft) of water
Mallard x Am. Black Duck Hybrid	Anas platyrhynchos x A. rubripes	NR					1	
Mourning Dove	Zenaida macroura	S5, G5					27	
Mourning Warbler	Oporornis Philadelphia	S5, G5					7	
Nashville Warbler	Vermivora ruficapilla	S5, G5					10	
Northern Bobwhite	Colinus virginianus	S4, G5	G		X		1	
Northern Cardinal	Cardinalis cardinalis	S5, G5					14	
Northern Flicker	Colaptes auratus	S5, G5					33	
Northern Goshawk	Accipiter gentiles	S4B, S3N, G4	SC		X		7	
Northern Mockingbird	Mimus polyglottos	S5, G5					5	
Northern Rough-winged Swallow	Stelgidopteryx serripennis	S5, G5					15	Found in suitable habitats within 500 m (1640 ft) of streams and rivers or near cliff faces with a slope gradient greater than 40%
Northern Waterthrush	Seiurus noveboracensis	S5, G5					7	
Olive-sided Flycatcher	Contopus cooperi	S5, G5			X	WL, PIF	3	
Ovenbird	Seiurus aurocapillus	S5, G5					29	
Pileated Woodpecker	Dryocopus pileatus	S5, G5					15	
Pine Siskin	Carduelis pinus	S5, G5					3	
Prairie Warbler	Dendroica discolor	S5, G5			X		12	
Purple Finch	Carpodacus purpureus	S5, G5					27	
Red Crossbill	Loxia curvirostra	S3, G5					2	
Red-breasted Nuthatch	Sitta Canadensis	S5, G5					19	
Red-eyed Vireo	Vireo olivaceus	S5, G5					33	
Red-headed Woodpecker	Melanerpes erythrocephalus	S4, G5	SC		X	WL, PIF	1	

Red-tailed Hawk	<i>Buteo jamaicensis</i>	S5, G5					17	
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	S5, G5					34	
Ring-necked Pheasant	<i>Phasianus colchicus</i>	SE, G5					6	
Rock Dove	<i>Columba livia</i>	SE, G5					10	
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	S5, G5					29	
Ruby-throated Hummingbird	<i>Archilochus colubris</i>	S5, G5					22	
Ruffed Grouse	<i>Bonasa umbellus</i>	NR, G5	G		X		20	
Savannah Sparrow	<i>Passerculus sandwichensis</i>	S5, G5					9	
Scarlet Tanager	<i>Piranga olivacea</i>	NR, G5			X		34	
Sharp-shinned Hawk	<i>Accipiter striatus</i>	S4, G5	SC		X		9	
Song Sparrow	<i>Melospiza melodia</i>	S5, G5					35	
Spotted Sandpiper	<i>Actitis macularia</i>	S5, G5					8	Found in suitable habitats within 90 m (300 ft) of streams or rivers.
Swainson's Thrush	<i>Catharus ustulatus</i>	S5, G5					7	
Swamp Sparrow	<i>Melospiza Georgiana</i>	S5, G5					13	
Tree Swallow	<i>Tachycineta bicolor</i>	S5, G5					32	
Tufted Titmouse	<i>Baeolophus bicolor</i>	S5, G5					3	
Turkey Vulture	<i>Cathartes aura</i>	S4, G5					26	
Veery	<i>Catharus fuscescens</i>	S5, G5					29	
Vesper Sparrow	<i>Poocetes gramineus</i>	S5, G5	SC		X		3	
Warbling Vireo	<i>Vireo gilvus</i>	S5, G5					16	
Whip-poor-will	<i>Caprimulgus vociferous</i>	S4, G5	SC		X	PIF	2	
White-breasted Nuthatch	<i>Sitta carolinensis</i>	S5, G5					29	
White-throated Sparrow	<i>Zonotrichia albicollis</i>	S5, G5					29	
Wild Turkey	<i>Meleagris gallopavo</i>	S5, G5					18	
Willow Flycatcher	<i>Empidonax traillii</i>	S5, G5			X	WL, PIF	5	
Winter Wren	<i>Troglodytes troglodytes</i>	S5, G5					16	
Wood Duck	<i>Aix sponsa</i>	S5, G5					6	
Wood Thrush	<i>Hylocichla mustelina</i>	S5, G5			X	WL, PIF	30	
Worm-eating Warbler	<i>Helmitheros vermivorus</i>	S4, G5			X		1	
Yellow Warbler	<i>Dendroica petechia</i>	S5, G5					32	
Yellow-bellied Flycatcher	<i>Empidonax flaviventris</i>	S3, G5					4	
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	S5, G5					26	
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	S5, G5					4	
Yellow-rumped Warbler	<i>Dendroica coronata</i>	S5, G5					23	
Yellow-throated Vireo	<i>Vireo flavifrons</i>	S5, G5					15	Found in suitable habitats within 500 m (1640 ft) of streams or rivers

Observed Rare Species and Significant Ecological Communities (source: NY Natural Heritage Program)

Rare plant and animals species with known populations within the watershed and documented examples of rare and high quality ecosystems within the watershed. Information regarding the locations of rare species is considered sensitive. The distribution of information which identifies the locations of rare species or their habitats may lead to the collection or disturbance of the animals and plants at those locations.

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Rare Birds		TNC Status	Legal Status	NYNHP Species	NYSDEC SGCN	Notes: (this section contains habitat association and distribution status information reported by the NY Natural Heritage Program)
Bald eagle	<i>Haliaeetus leucocephalus</i>	S2S3B, S2N, G5	ST, FT	X	X	Schoharie reservoir
Bicknell's Thrush	<i>Catharus bicknelli</i>	S2S3B, G4	SC	X	X	Found in high altitude spruce-fir forest typically above 3500 feet
Rare Plants		TNC Status	Legal Status	NYNHP Species	NYSDEC SGCN	Notes: (this section contains habitat association and distribution status information reported by the NY Natural Heritage Program)
Blunt-lobe Grape Fern	<i>Botrychium oneidense</i>	S2S3, G4Q	SE	X		Historical occurrence
Climbing Fern	<i>Lygodium palmatum</i>	S1, G4	SE	X		Historical occurrence
Musk Root	<i>Adoxa moschatellina</i>	S1, G5	SE	X		
Rough Avens	<i>Geum virginianum</i>	S2, G5	SE	X		Historical occurrence
Whorled Mountain-mint	<i>Pycnanthemum verticillatum</i> var. <i>verticillatum</i>	S1S2, G5T5	ST	X		
Rare Invertebrates		TNC Status	Legal Status	NYNHP Species	NYSDEC SGCN	Notes: (this section contains habitat association and distribution status information reported by the NY Natural Heritage Program)
Appalachian Tiger Beetle	<i>Cicindela ancocisconensis</i>	S1, G3	U	X	X	Stream (cobble); Found on cobble bars
Natural Communities		TNC Status	Legal Status	NYNHP Species	NYSDEC SGCN	Notes: (this section contains habitat association and distribution status information reported by the NY Natural Heritage Program)
Hemlock-northern hardwood forest		S4, G4G5		X		Lowest elevations, adjacent to and forming a mosaic with beech-maple mesic forest, found in ravines
Beech-Maple Mesic Forest		S4, G4		X		Matrix forest at mid to high elevations ranging from 900 to 3720 feet
Spruce-Northern Hardwood Forest		S3S4, G3G4		X		Mid to high elevations, ridgelines at slightly lower elevations than highest
Mountain fir forest		S2, G3		X		Highest elevations
Mountain Spruce-Fir Forest		S2S3, G3		X		Highest elevations

New York Natural Heritage Program Rarity Rank Definitions

NY LEGAL STATUS - Animals:

Categories of Endangered and Threatened species are defined in New York State Environmental Conservation Law section 11-0535. Endangered, Threatened, and Special Concern species are listed in regulation 6NYCRR 182.5.

E - Endangered Species: any species which meet one of the following criteria:

- Any native species in imminent danger of extirpation or extinction in New York.
- Any species listed as endangered by the United States Department of the Interior, as enumerated in the Code of Federal Regulations 50 CFR 17.11.

T - Threatened Species: any species which meet one of the following criteria:

- Any native species likely to become an endangered species within the foreseeable future in NY.
- Any species listed as threatened by the U.S. Department of the Interior, as enumerated in the Code of the Federal Regulations 50 CFR 17.11.

SC - Special Concern Species: those species which are not yet recognized as endangered or threatened, but for which documented concern exists for their continued welfare in New York. Unlike the first two categories, species of special concern receive no additional legal protection under Environmental Conservation Law section 11-0535 (Endangered and Threatened Species).

P - Protected Wildlife (defined in Environmental Conservation Law section 11-0103): wild game, protected wild birds, and endangered species of wildlife.

U - Unprotected (defined in Environmental Conservation Law section 11-0103): the species may be taken at any time without limit; however a license to take may be required.

G - Game (defined in Environmental Conservation Law section 11-0103): any of a variety of big game or small game species as stated in the Environmental Conservation Law; many normally have an open season for at least part of the year, and are protected at other times.

NY LEGAL STATUS - Plants:

The following categories are defined in regulation 6NYCRR part 193.3 and apply to NYS Environmental Conservation Law section 9- 1503.

E - Endangered Species: listed species are those with:

- 5 or fewer extant sites, or
- fewer than 1,000 individuals, or
- restricted to fewer than 4 U.S.G.S. 7 ½ minute topographical maps, or
- species listed as endangered by U.S. Department of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.11.

T - Threatened: listed species are those with:

- 6 to fewer than 20 extant sites, or
- 1,000 to fewer than 3,000 individuals, or
- restricted to not less than 4 or more than 7 U.S.G.S. 7 and ½ minute topographical maps, or
- listed as threatened by U.S. Department of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.11.

R - Rare: listed species have:

- 20 to 35 extant sites, or
- 3,000 to 5,000 individuals statewide.

V - Exploitably Vulnerable: listed species are likely to become threatened in the near future throughout all or a significant portion of their range within the state if causal factors continue unchecked.

U - Unprotected: no state status.

FEDERAL STATUS (PLANTS and ANIMALS):

The categories of federal status are defined by the United States Department of the Interior as part of the 1974 Endangered Species Act (see Code of Federal Regulations 50 CFR 17). The species listed under this law are enumerated in the Federal Register vol. 50, no. 188, pp. 39526 - 39527. The codes below without parentheses are those used in the Federal Register. The codes below in parentheses are created by Heritage to deal with species which have different listings in different parts of their range, and/or different listings for different subspecies or varieties.

(blank): No Federal Endangered Species Act status.

LE: The element is formally listed as endangered.

LT: The element is formally listed as threatened.

PE: The element is proposed as endangered.

PT: The element is proposed as threatened.

C: The element is a candidate for listing.

LE,LT: The species is formally listed as endangered in part of its range, and as threatened in the other part; or, one or more subspecies or varieties is listed as endangered, and the others are listed as threatened.

LT,PDL: Populations of the species in New York are formally listed as threatened, and proposed for delisting.

(LE): If the element is a full species, all subspecies or varieties are listed as endangered; if the element is a subspecies, the full species is listed as endangered.

LT,T(S/A): One or more subspecies or populations of the species is formally listed as threatened, and the others are treated as threatened because of similarity of appearance to the listed threatened subspecies or populations.

PS: Partial status: the species is listed in parts of its range and not in others; or, one or more subspecies or varieties is listed, while the others are not listed.

GLOBAL AND STATE RANKS (animals, plants, ecological communities and others):

Each element has a global and state rank as determined by the NY Natural Heritage Program. These ranks carry no legal weight. The global rank reflects the rarity of the element throughout the world and the state rank reflects the rarity within New York State. Intraspecific taxa are also assigned a taxon rank to reflect the intraspecific taxon's rank throughout the world. ? = Indicates a question exists about the rank. Range ranks, e.g. S1S2, indicate not enough information is available to distinguish between two ranks.

GLOBAL RANK:

G1: Critically imperiled globally because of extreme rarity (5 or fewer occurrences), or very few remaining acres, or miles of stream) or especially vulnerable to extinction because of some factor of its biology.

G2: Imperiled globally because of rarity (6 - 20 occurrences, or few remaining acres, or miles of stream) or very vulnerable to extinction throughout its range because of other factors.

G3: Either rare and local throughout its range (21 to 100 occurrences), or found locally (even abundantly at some of its locations) in a restricted range (e.g. a physiographic region), or vulnerable to extinction throughout its range because of other factors.

G4: Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.

G5: Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.

GH: Historically known, with the expectation that it might be rediscovered.

GX: Species believed to be extinct.

NYS RANK:

S1: Typically 5 or fewer occurrences, very few remaining individuals, acres, or miles of stream, or some factor of its biology making it especially vulnerable in New York State.

S2: Typically 6 to 20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in New York State.

S3: Typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State.

S4: Apparently secure in New York State.

S5: Demonstrably secure in New York State.

SH: Historically known from New York State, but not seen in the past 15 years.

SX: Apparently extirpated from New York State.

SZ: Present in New York State only as a transient migrant.

SxB and SxN, where Sx is one of the codes above, are used for migratory animals, and refer to the rarity within New York State of the breeding (B)populations and the non-breeding populations (N), respectively, of the species.

TAXON (T) RANK:

The T-ranks (T1 - T5) are defined the same way as the Global ranks (G1 - G5), but the T-rank refers only to the rarity of the subspecific taxon.

T1 through T5: See Global Rank definitions above.

Q: Indicates a question exists whether or not the taxon is a good taxonomic entity.

References:

Hudson River Valley - Gap Analysis Program (GAP)

Smith, C.R., S.D. DeGloria, M.E. Richmond, S.K. Gregory, M. Laba, S.D. Smith, J.L. Braden, W.P. Brown, and E.A. Hill. 2001. An Application of Gap Analysis Procedures to Facilitate Planning for Biodiversity Conservation in the Hudson River Valley, Final Report, Part I: Gap Analysis of the Hudson River Valley and Part 2: Atlas of Predicted Ranges for Terrestrial Vertebrates in the Hudson River Valley. New York Cooperative Fish and Wildlife Research Unit, Department of Natural Resources, Cornell University, Ithaca, N.Y.

NY Natural Heritage Program

Online at: www.nynhp.org

NY Natural Heritage Program Conservation Guides

Online at: <http://www.acris.nynhp.org/>

Biodiversity Assessment Manual for the Hudson River Estuary Corridor

Kiviat, E. and G. Stevens. 2001. Biodiversity Assessment Manual for the Hudson River Estuary Corridor. Published by the NY State Department of Environmental Conservation with funding provided by the Hudson River Estuary Program. Hudsonia, Ltd., Bard College, Annandale, NY.

NYS Amphibian and Reptile Atlas

Online at: <http://www.dec.state.ny.us/website/dfwmr/wildlife/herp/>

NYS Breeding Bird Atlas

Online at: <http://www.dec.state.ny.us/website/dfwmr/wildlife/bba/index.html>

NYS Comprehensive Wildlife Conservation Strategy

Online at: <http://www.dec.state.ny.us/website/dfwmr/swg/cwcsmainpg.html>

NYS Threatened, Endangered & Special Concern Species List

Online at: <http://www.dec.state.ny.us/website/dfwmr/wildlife/endspec/>