

## **VII. Appendices**

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## **A. Appendix I: New Jersey's Most Vulnerable Wildlife**

### **1. Definitions of Status**

**Table W1.** Status of Wildlife in New Jersey

<p><b>Endangered:</b> A species whose prospects for survival in New Jersey are in immediate danger because of a loss or degradation of habitat, over-exploitation, predation, competition, disease, disturbance, or contamination. An endangered species requires immediate action to avoid extinction in New Jersey.</p>
<p><b>Threatened:</b> A species that may become endangered if conditions surrounding it begin to, or continue to, deteriorate. Thus, a threatened species is one that is already vulnerable as a result of small population size, restricted range, narrow habitat affinities, or significant population decline.</p>
<p><b>Special Concern:</b> A species that warrants special attention because continued (or further) habitat degradation or modification would result in their becoming threatened. This category also applies to species that meet these criteria and for which there is little understanding of their status in the state. The term, for the purpose of the Wildlife Action Plan, also includes species identified as regional concern in national and regional conservation plans such as Partners in Flight Bird Conservation Plans, North American Waterbird Conservation Plan (Mid-Atlantic/ New England/ Maritimes), USFWS species of conservation concern (2002), North American Waterfowl Management Plan, and the United States Shorebird Conservation Plan.</p>
<p><b>Secure/Stable:</b> A species that appears to be secure in the state and not in danger of falling into any of the preceding three categories in the near future.</p>
<p><b>Unknown:</b> A species for which it is impossible to assign any of the preceding statuses because enough information on which to base a judgment simply does not exist.</p>
<p><b>Extirpated:</b> Applies to a species previously known to occur in the state for which there is substantial evidence that no extant populations currently exist.</p>

**Table W2.** State and global element ranks as defined by NatureServe Conservation Status Assessment - (For more information, visit NatureServe Conservation Status Assessment web site: <http://www.natureserve.org/explorer/>)

<p><b>S1:</b> Critically imperiled in New Jersey because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres). Species ranked S1 are often restricted to specialized habitats and/ or restricted to an extremely small (3%) geographical area of the state. Also included are species which were formerly more abundant, but because of habitat destruction or some other critical factor of its biology, they have been demonstrably reduced in abundance. In essence, these are species for which even with intensive searching, sizable additional occurrences are unlikely to be discovered.</p>
<p><b>S2:</b> Imperiled in New Jersey because of rarity (6 to 20 occurrences or few remaining individuals or acres). Historically many of these species may have been more frequent, but now, largely through habitat destruction, are known from fewer extant occurrences. The S2 rank also includes species which occur in habitats restricted to 10 % of the total state area.</p>

**(Appendix I continued)**

<p><b>S3:</b> Rare in state with 21-100 occurrences. Includes species which are widely distributed in the state but often occurring in small populations, and also in habitats which may be common or widespread. Species having a moderately restricted distribution (but greater than 10%) in New Jersey but are locally abundant, are also included. Species ranked S3 are not yet imperiled in state but may soon be if additional populations are destroyed.</p>
<p><b>S4:</b> Apparently secure in state, with many occurrences.</p>
<p><b>S5:</b> Demonstrably secure in state and essentially ineradicable under present conditions.</p>
<p><b>SA:</b> Accidental in state, including species (usually birds or butterflies) recorded once or twice or only at very great intervals, hundreds or even thousands of miles outside their usual range; a few of these species may even have bred on the one or two occasions they were recorded; examples include European strays or western birds on the East Coast and vice-versa.</p>
<p><b>SH:</b> Elements of historical occurrence in New Jersey. Despite some searching of historical occurrences and/ or potential habitat, no extant occurrences are known. Since not all of the historic occurrences have been field surveyed, and unsearched potential habitat remains, historically ranked taxa are considered possibly extant, and remain a conservation priority for continued field work.</p>
<p><b>SU:</b> Elements believed to be in peril but the degree of rarity uncertain. Also included are rare taxa of uncertain taxonomical standing. More information is needed to resolve rank.</p>
<p><b>SZ:</b> Not of practical conservation concern in New Jersey, because there are no definable occurrences although the taxon is native and appears regularly in the state. An SZ rank will generally be used for long distance migrants whose occurrences during their migrations are too irregular (in terms of repeated visitation to the same locations), transitory, and dispersed to be reliably identified, mapped, and protected. In other words, the migrant regularly passes through the state, but enduring, mappable element occurrences cannot be defined. Typically, the SZ rank applies to a non-breeding population (N) in the state – for example, birds on migration. An SZ rank may in a few instances also apply to a breeding population (B), for example certain lepidoptera which regularly die out every year with no significant return migration.</p> <p>Although the SZ rank typically applies to migrants, it should not be used indiscriminately. Just because a species is on migration does not mean it receives an SZ rank. SZ will only apply when the migrations occur in an irregular, transitory and dispersed manner.</p>
<p><b>G1:</b> Critically imperiled globally because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction.</p>
<p><b>G2:</b> Imperiled globally because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extinction throughout its range.</p>
<p><b>G3:</b> Either very rare and local throughout its range or found locally (even abundantly at some of the locations) in a restricted range (e.g., a single western state, a physiographic region in the East) or because of other factors making it vulnerable to extinction throughout its range; with the number of occurrences in the range of 21-100.</p>
<p><b>G4:</b> Apparently secure globally; although it may be quite rare in parts of its range, especially at the periphery.</p>

**(Appendix I continued)**

<b>G5:</b> Demonstrably secure globally; although it may be quite rare in parts of its range, especially at the periphery.
<b>B:</b> Refers to the breeding population of the element in the state.
<b>N:</b> Refers to the non-breeding population of the element in the state.
<b>Q:</b> Element containing a “Q” in the global portion of its rank indicates that the taxon is of questionable, or uncertain taxonomical standing, e.g., some authors regard it as a full species, while others treat it at the subspecific level.

(Appendix I continued)

## 2. Wildlife of Greatest Conservation Need, their Location in New Jersey, and the Management Strategy

**Table W3. Federal Endangered and Threatened Species\***

Common Name	Scientific Name	Federal Status & Regional Priority	State & Global Rank	Atlantic Coastal Landscape	Delaware Bay Landscape	Piedmont Plains Landscape	Pinelands Landscape	Skylands Landscape
<b>Mammals</b>								
Blue whale	<i>Balaneoptera musculus</i>	E	SA, G3G4	I				
Fin whale	<i>Balaneoptera physalus</i>	E	SZN, G3G4	I				
Humpback whale	<i>Megaptera novaeangliae</i>	E	SZN, G3	I				
Indiana bat	<i>Myotis sodalis</i>	E	S1, G2	R	R	R	R	I
North Atlantic Right whale	<i>Balaena glacialis</i>	E	-	I				
Sei whale	<i>Balaneoptera borealis</i>	E	G3	I				
Sperm whale	<i>Physeter macrocephalus</i>	E	SA, G3G4	I				
<b>Birds</b>								
Piping plover	<i>Charadrius melodus</i>	T & RP	S1B, G3	I				
Roseate tern	<i>Sterna dougallii</i>	E/T & RP	SHB, G4	R				
<b>Reptiles</b>								
Bog turtle	<i>Glyptemys muhlenbergii</i>	T	S2, G3	R	R	I	I	I
Green sea turtle	<i>Chelonia mydas</i>	E/T	SZN, G3	I	I			
Hawksbill sea turtle	<i>Eretmochelys imbricata</i>	E	SZN, G3	I	I			
Kemp's ridley sea turtle	<i>Lepidochelys kempi</i>	E	SZN, G1	I	I			
Leatherback sea turtle	<i>Dermochelys coriacea</i>	E	SZN, G3	I	I			
Loggerhead sea turtle	<i>Caretta caretta</i>	T	SZN, G3	I	I			
<b>Mollusks</b>								
Dwarf wedgemussel	<i>Alasmidonta heterodon</i>	E & RP	S1, G1G2			I		I
<b>Insects</b>								
American burying beetle**	<i>Nicrophorus mericanus</i>	E	SH, G2G3			R		R
Mitchell's satyr**	<i>Neonympha m. mitchellii</i>	E	SH, G1G2					R
Northeastern beach tiger beetle	<i>Cincindela d. dorsalis</i>	T	S1, G4	I				
<b>Fish</b>								
Shortnose sturgeon	<i>Acipenser brevirostrum</i>	E & RP	S3, G3		M	R		

\* All Federal Endangered and Threatened species have an Endangered status on the NJ List of Endangered Wildlife.

\*\* Only historic records exist, species believed to be extirpated.

T: Federally threatened species.

E: Federally endangered species.

E/T: Federally endangered species during breeding season, federally threatened species during non-breeding season.

RP: Species of regional priority; currently mammals, reptiles, and insects are not identified due to information gaps.

M: Maintain population, species occurs within specific habitat(s) of landscape region.

I: Increase and stabilize population, species occurs within specific habitat(s) of landscape region.

R: Research and restore population, suitable habitat, species presence unknown.

X: Species present. Management strategy not yet determined.

(Appendix I continued)

**Table W4. State Endangered Species**

Common Name	Scientific Name	Regional Priority	State & Global Rank	Atlantic Coastal Landscape	Delaware Bay Landscape	Piedmont Plains Landscape	Pinelands Landscape	Skylands Landscape
<b>Mammals</b>								
Allegheny woodrat	<i>Neotoma floridana magister</i>		S1, G3G4			I		R
Bobcat	<i>Lynx rufus</i>		S3, G5		R	I	R	I
<b>Birds</b>								
American bittern	<i>Botaurus lentiginosus</i>	RP	S2B, G4	R	R	I	I	I
Bald eagle	<i>Haliaeetus leucocephalus</i>	T	S1B, S2N, G4	I	I	I	I	I
Black skimmer	<i>Rynchops niger</i>	RP	S1B, G5	I	R	I	M	
Henslow's sparrow	<i>Ammodramus henslowii</i>	RP	S1B, G4		I			
Least tern	<i>Sterna antillarum</i>	RP	S1B, G4	I	I	I	M	
Loggerhead shrike	<i>Lanius ludovicianus</i>	RP	S1B, S1N, G5 (migrant only)		R	R		
Northern goshawk	<i>Accipiter gentilis</i>		S1B, S4N, G5					I
Northern harrier	<i>Circus cyaneus</i>		S1B, S3N, G5	I	I	I		I
Peregrine falcon	<i>Falco peregrinus</i>		S1B, G4	M	M	I		R
Pied-billed grebe	<i>Podilymbus podiceps</i>	RP	S1B, S3N, G5	I	R	I		I
Red-shouldered hawk	<i>Buteo lineatus</i>		S1B, S2N, G5		I	I	I	I
Sedge wren	<i>Cistothorus plantensis</i>	RP	S1B, G5	M	I	I		I
Short-eared owl	<i>Asio flammeus</i>	RP	SHB, S3N, G5	I	I	I		I
Upland sandpiper	<i>Batramia longicauda</i>	RP	S1B, G5			I	I	I
Vesper sparrow	<i>Pooecetes gramineus</i>		S1B, S2N, G5		I	I	I	I
<b>Reptiles</b>								
Corn snake	<i>Elaphe g. guttata</i>		S1, G5		I		I	
Timber rattlesnake	<i>Crotalus h. horridus</i>		S2, G4		R		I	I
Queen snake*	<i>Regina septemvittata</i>		SU, G5			R		
<b>Amphibians</b>								
Blue-spotted salamander	<i>Ambystoma laterale</i>		S1, G5					I
Cope's gray treefrog	<i>Hyla chrysocelis</i>		S2, G5	M	I		I	
Eastern tiger salamander	<i>Ambystoma tigrinum</i>		S2, G5		I	R		
<b>Mollusks</b>								
Brook floater	<i>Alasmidonta varicosa</i>	RP	S1, G3					I
Green floater	<i>Lasmigona subviridis</i>	RP	S1, G3					R
<b>Insects</b>								
Appalachian grizzled skipper*	<i>Pyrgus wyandot</i>		SH, G2			R		R
Arogos skipper	<i>Atrytone arogos arogos</i>		S1, G3G4				I	I
Bronze copper	<i>Lycaena hyllus</i>		S2, G5		I	I		

\* Only historic records exist, species believed to be extirpated.

RP: Species of regional priority; currently mammals, reptiles, and insects are not identified due to information gaps.

M: Maintain population, species occurs within specific habitat(s) of landscape region.

I: Increase and stabilize population, species occurs within specific habitat(s) of landscape region.

R: Research and restore population, suitable habitat, species presence unknown.

(Appendix I continued)

**Table W5. State Threatened Species**

Common Name	Scientific Name	Regional Priority	State & Global Rank	Atlantic Coastal Landscape	Delaware Bay Landscape	Piedmont Plains Landscape	Pinelands Landscape	Skylands Landscape
<b>Birds</b>								
Barred owl	<i>Strix varia</i>		S3B, G5		I	I	I	I
Black rail	<i>Laterallus jamaicensis</i>	RP	S2B, G4	I	I			
Black-crowned night-heron	<i>Nycticorax nycticorax</i>	RP	S3B, S4N, G5	I	I	I	I	I
Bobolink	<i>Dolichonyx oryzivorus</i>	RP	S2B, G5		I	I	I	I
Cooper's hawk	<i>Accipiter cooperii</i>	RP	S3B, S4N, G5		I	I	I	M
Grasshopper sparrow	<i>Ammodramus savannarum</i>	RP	S2B, G5		I	I	M	I
Long-eared owl	<i>Asio otus</i>		S2B, S2N, G5		I	I		I
Osprey	<i>Pandion haliaetus</i>		S2B, G5	M	I	I	M	I
Red knot	<i>Calidris canutus</i>	RP	S3N, G5	I	I			
Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>	RP	S2B, S2N, G5		I	I	I	I
Savannah sparrow	<i>Passerculus sandwichensis</i>		S2B, S4N, G5		I	I	M	I
Yellow-crowned night-heron	<i>Nyctanassa violaceus</i>	RP	S2B, G5	I	R	I	M	
<b>Reptiles</b>								
Northern pine snake	<i>Pituophis m. melanoleucus</i>		S3, G4		I	I	I	
Wood turtle	<i>Clemmys insculpta</i>		S3, G4			I	I	I
<b>Amphibians</b>								
Eastern mud salamander	<i>Pseudotriton montanus</i>		S1, G5			R	R	
Long-tailed salamander	<i>Eurycea longicauda</i>		S2, G5			R		I
Pine Barrens treefrog	<i>Hyla andersonii</i>		S3, G4		I	I	I	
<b>Mollusks</b>								
Eastern lampmussel	<i>Lampsilis radiata</i>		S3, G5					I
Eastern pondmussel	<i>Ligumia nasuta</i>		S1, G4G5			I		
Tidewater mucket	<i>Leptodea ochracea</i>	RP	S1, G4			R		R
Triangle floater	<i>Alasmidonta undulata</i>		S3, G4			I		I
Yellow lampmussel	<i>Lampsilis cariosa</i>	RP	S1, G3G4			M		M
<b>Insects</b>								
Checkered white	<i>Pontia protodice</i>		S1, G4			I		
Frosted elfin	<i>Callophrys irus</i>		S2S3, G3		I	I	I	
Silver-bordered fritillary	<i>Bolaria selene myrina</i>		S2, G5			I	I	I

RP: Species of regional priority; currently mammals, reptiles, and insects are not identified due to information gaps.

M: Maintain population, species occurs within specific habitat(s) of landscape region.

I: Increase and stabilize population, species occurs within specific habitat(s) of landscape region.

R: Research and restore population, suitable habitat, species presence unknown.

(Appendix I continued)

**Table W6.** Nongame Species of Conservation Concern

Note: Recovery goals based upon regional plans.

Common Name	Scientific Name	Conservation Status	State & Global Rank	Atlantic Coastal Landscape	Delaware Bay Landscape	Piedmont Plains Landscape	Pinelands Landscape	Skylands Landscape
<b>Mammals</b>								
Eastern red bat	<i>Lasiurus borealis</i>	RP		R	R	R	R	R
Eastern small-footed myotis	<i>Myotis leibii</i>		S1, G3		R	R	R	R
Hoary bat	<i>Lasiurus cinereus</i>	RP		R	R	R	R	R
Long-tailed (Rock) shrew	<i>Sorex dispar</i>	RP	S1, G4					R
Marsh rice rat	<i>Oryzomys palustris</i>		S3, G5	R	R	R	R	
Silver-haired bat	<i>Lastonycteris noctivgans</i>	RP		R	R	R	R	R
Southern bog lemming	<i>Synaptomys cooperi</i>	RP	S2, G5	R	R	R	R	R
<b>Birds</b>								
Acadian flycatcher	<i>Empidonax vireescens</i>	RP	-		M	M	M	I
American golden-plover	<i>Pluvialis dominica</i>	RP	-	M	M	M		I
American kestrel	<i>Falco sparverius</i>	SC	S3B, G5		I	I	I	I
American oystercatcher	<i>Haematopus palliatus</i>	RP	-	I	M	I		
Audubon's shearwater	<i>Puffinus lherminieri</i>	RP	-	M				
Baltimore oriole	<i>Icterus galbula</i>	RP	-		I	I	I	I
Black tern	<i>Chlidonias niger</i>	SC/ RP	SZN, G4	M	I	I		
Black-and-white warbler	<i>Mniotilta varia</i>	RP	-		I	I	I	I
Black-billed cuckoo	<i>Coccyzus erythrophthalmus</i>	RP	-		I	I	I	I
Blackburnian warbler	<i>Dendroica fusca</i>	RP	-		M	I		M
Black-throated blue warbler	<i>Dendroica caerulescens</i>	RP	G5			M		M
Black-throated green warbler	<i>Dendroica virens</i>	SC	S3B, G5		I	I	I	I
Blue-headed vireo (solitary vireo)	<i>Vireo solitarius</i>	SC	S3B, G5			I		I
Blue-winged warbler	<i>Vermivora pinus</i>	RP	-		I	I	I	M
Bridled tern	<i>Sterna anaethetus</i>	RP	-	M				
Broad-winged hawk	<i>Buteo platypterus</i>	SC/ RP	S3B, G5		M	M	M	M
Brown thrasher	<i>Toxostoma rufum</i>	RP	-		I	I	M	I
Canada warbler	<i>Wilsonia canadensis</i>	SC/ RP	S3B, G5		M	M		I
Caspian tern	<i>Sterna caspia</i>	SC	SPB, G5	M				
Cattle egret	<i>Bubulcus ibis</i>	RP	-	I	M	M	M	
Cerulean warbler	<i>Dendroica cerulea</i>	SC/ RP	S3B, G4			I	M	I
Chimney swift	<i>Chaetura pelagica</i>	RP	-	I	I	I		I
Chuck-will's-widow	<i>Caprimulgus carolinensis</i>	RP	-		I	R	I	
Cliff swallow	<i>Petrochelidon pyrrhonota</i>	SC	S2B, G5			M		M
Common barn owl	<i>Tyto alba</i>	SC	S3B, G5	M	I	I	I	M
Common nighthawk	<i>Chordeiles minor</i>	SC	S3B, G5		I	M	M	I
Common tern	<i>Sterna hirundo</i>	SC/ RP	S3B, G5	I	I	M		
Dickcissel	<i>Spiza americana</i>	RP	S1B, S4N, G5		M	M	M	

NJ Wildlife Action Plan: 01/23/08

(Appendix I; Nongame Species of Conservation Concern continued)

Common Name	Scientific Name	Conservation Status	State & Global Rank	Atlantic Coastal Landscape	Delaware Bay Landscape	Piedmont Plains Landscape	Pinelands Landscape	Skylands Landscape
<b>Birds (continued)</b>								
Eastern kingbird	<i>Tyrannus tyrannus</i>	RP	-		I	I	M	I
Eastern meadowlark	<i>Sturnella magna</i>	SC/ RP	S3B, S4N, G5		I	I	M	I
Eastern screech-owl	<i>Otus asio</i>	RP	-		M	I	M	M
Eastern towhee	<i>Pipilo erythrophthalmus</i>	RP	-		I	I	I	I
Eastern wood-pewee	<i>Contopus virens</i>	RP	-		I	I	I	I
Field sparrow	<i>Spizella pusilla</i>	RP	-		I	I	I	I
Forster's tern	<i>Sterna forsteri</i>	RP	-	M	M	M		
Glossy ibis	<i>Plegadis falcinellus</i>	RP	S3B, S4N, G5	I	I	M		
Golden-winged warbler	<i>Vermivora chrysoptera</i>	SC/RP	S3B, G4			I		I
Gray catbird	<i>Dumetella carolinensis</i>	RP	-		M	M	M	M
Gray-cheeked thrush	<i>Catharus minimus</i>	SC	-			M		M
Great blue heron	<i>Ardea herodias</i>	SC/ RP	S2B, S4N, G5	M	M	M	M	M
Great crested flycatcher	<i>Myiarchus crinitus</i>	RP	-	I	I	I	I	M
Great egret	<i>Ardea alba</i>	RP	-	M	M	M	M	
Greater shearwater	<i>Puffinus gravis</i>	RP	-	M	M	M		
Greater yellowlegs	<i>Tringa melanoleuca</i>	RP	-	M				
Green heron	<i>Butorides virescens</i>	RP	-	M	M	I	M	M
Gull-billed tern	<i>Sterna nilotica</i>	RP	S1B, G5	M				
Hooded warbler	<i>Wilsonia citrina</i>	RP	S3B, G5		M	M	M	M
Horned grebe	<i>Podiceps auritus</i>	RP	G5	M	M	M		
Horned lark	<i>Eremophila alpestris</i>	SC	S3B, S4N, G5	M	I	M	M	M
Hudsonian godwit	<i>Limosa haemastica</i>	RP	-	M				
Indigo bunting	<i>Passerina cyanea</i>	RP	-		I	I	M	I
Kentucky warbler	<i>Oporornis formosus</i>	SC/ RP	S3B, G5		I	I	I	I
King rail	<i>Rallus elegans</i>	SC/ RP	S3B, G4G5	M	M	M	M	M
Least bittern	<i>Ixobrychus exilis</i>	SC/ RP	S3B, G5	M	M	M		M
Least flycatcher	<i>Empidonax minimus</i>	SC/ RP	S3B, G5			I	I	I
Little blue heron	<i>Egretta caerulea</i>	SC/ RP	S2B, G5	I	M	I	M	
Louisiana waterthrush	<i>Seiurus motacilla</i>	RP	-		M	M	M	I
Manx shearwater	<i>Puffinus puffinus</i>	RP	-	M				
Marbled godwit	<i>Limosa fedoa</i>	RP	-	M				
Marsh wren	<i>Cistothorus palustris</i>	RP	S4B, S4N, G5	M	M	I	M	M
Nelson's sharp-tailed sparrow	<i>Ammodramus nelsoni</i>	RP	-	M				
Northern flicker	<i>Colaptes auratus</i>	RP	-		I	I	I	I
Northern gannet	<i>Morus bassanus</i>	RP	-	M	M	M		
Northern parula	<i>Parula Americana</i>	SC	S3B, G5		M	M	M	M
Pine warbler	<i>Dendroica pinus</i>	RP	-		M	M	M	M
Prairie warbler	<i>Dendroica discolor</i>	RP	-		I	I	I	I
Prothonotary warbler	<i>Protonotaria citrea</i>	RP	-		I	I	I	
Purple finch	<i>Carpodacus purpureus</i>	RP	S3B, S4N, G5			R		I

NJ Wildlife Action Plan: 01/23/08

(Appendix I; Nongame Species of Conservation Concern continued)

Common Name	Scientific Name	Conservation Status	State & Global Rank	Atlantic Coastal Landscape	Delaware Bay Landscape	Piedmont Plains Landscape	Pinelands Landscape	Skylands Landscape
<b>Birds (continued)</b>								
Purple sandpiper	<i>Calidris maritima</i>	RP	-	M				
Razorbill	<i>Alca torda</i>		-	M	M	M		
Red-throated loon	<i>Gavia stellata</i>	RP	-	M	M	M		
Rose-breasted grosbeak	<i>Pheucticus ludovicianus</i>	RP	-		I	I	I	I
Royal tern	<i>Sterna maxima</i>	RP	S1B, G5	I				
Ruddy turnstone	<i>Arenaria interpres</i>	RP	-	M	I			
Saltmarsh sharp-tailed sparrow	<i>Ammodramus caudacutus</i>	RP	-	I	I	R	M	
Sanderling	<i>Calidris alba</i>	SC/ RP	-	M	I			
Scarlet tanager	<i>Piranga olivacea</i>	RP	-		I	I	I	M
Seaside sparrow	<i>Ammodramus maritimus</i>	RP	-	M	M	R	M	
Semipalmated sandpiper	<i>Calidris pusilla</i>	RP	-	I	I			
Sharp-shinned hawk	<i>Accipiter striatus</i>	SC/ RP	S2B, S3N, G5		M	M		M
Snowy egret	<i>Egretta thula</i>	SC/ RP	S3B, S4N, G5	I	I	I	M	
Spotted sandpiper	<i>Actitis macularia</i>	SC	S3B, G5		M	M	M	M
Summer tanager	<i>Piranga rubra</i>	RP	-			M		
Swainson's warbler	<i>Limothlypis swainsonii</i>	RP	-		M			
Tricolored heron	<i>Egretta tricolor</i>	SC/ RP	S3B, G5	I	I			
Veery	<i>Catharus fuscescens</i>	SC	S3B, G5		I	I	I	I
Whimbrel	<i>Numenius phaeopus</i>	SC/ RP	S3N, G5	M				
Whip-poor-will	<i>Caprimulgus vociferus</i>	RP	S4B, G5		I	I	I	I
Willet	<i>Catoptrophorus semipalmatus</i>	RP	-	M	M	M		
Willow flycatcher	<i>Empidonax traillii</i>	RP	-		I	I		I
Wilson's phalarope	<i>Phalaropus tricolor</i>	RP	-	M				
Winter wren	<i>Troglodytes troglodytes</i>	SC	S3B, S4N, G5			M		M
Wood thrush	<i>Hylocichla mustelina</i>	RP	-		I	I	I	I
Worm-eating warbler	<i>Helmitheros vermivorus</i>	RP	S3B, G5		M	M	M	I
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	RP	-					M
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	RP	-		I	I	I	I
Yellow-breasted chat	<i>Icteria virens</i>	SC/ RP	S3B, G5		I	I	M	I
Yellow-throated vireo	<i>Vireo flavifrons</i>	RP	-		I	I	I	M
Yellow-throated warbler	<i>Dendroica dominica</i>	RP	-		M	M	M	M
<b>Reptiles</b>								
Coastal plain milk snake	<i>Lampropeltis triangulum triangulum</i> x <i>L. t. elapsoides</i>	SC	-			M	M	
Eastern box turtle	<i>Terrapene carolina carolina</i>	SC	-	M	M	M	M	M
Eastern kingsnake	<i>Lampropeltis getula getula</i>	SC	S4, G5		M	M	M	

NJ Wildlife Action Plan: 01/23/08

(Appendix I; Nongame Species of Conservation Concern continued)

Common Name	Scientific Name	Conservation Status	State & Global Rank	Atlantic Coastal Landscape	Delaware Bay Landscape	Piedmont Plains Landscape	Pinelands Landscape	Skylands Landscape
<b>Reptiles (continued)</b>								
Northern copperhead	<i>Agkistrodon contortrix mokasen</i>	SC	S4, G5			M		M
Northern diamondback terrapin	<i>Malaclemys terrapin terrapin</i>	SC	SU, G4	I	I	I	M	
Spotted turtle	<i>Clemmys guttata</i>	SC	-		M	M	M	M
<b>Amphibians</b>								
Carpenter frog	<i>Rana virgatipes</i>	SC	-		M	M	M	M
Fowler's toad	<i>Bufo woodhousii fowleri</i>	SC	-	M	M	M	M	M
Jefferson salamander	<i>Ambystoma jeffersonianum</i>	SC	S3, G5			M		M
Marbled salamander	<i>Ambystoma opacum</i>	SC	S3, G5		M		M	M
Northern spring salamander	<i>Gyrinophilus porphyriticus porphyriticus</i>	SC	S3, G5			M		M
<b>Mollusks</b>								
Creeper	<i>Strophitus undulates</i>	SC	-			M		M
<b>Insects</b>								
	<i>Catocala jair ssp 2</i>		S3, G4				EX	
	<i>Eusarca fundaria</i>		S2S3, G4		EX			
	<i>Lytrosis sinuosa</i>		S3, G4		EX			
	<i>Nemoria saturiba</i>		S1?, G4?					
	<i>Pero zalissaria</i>		S2S4, G4		X			
	<i>Richia sp 2</i>		S1, G1Q				EX	
	<i>Simyra sp 1</i>		S1?, G4Q		EX			
	<i>Zanclognatha sp 1</i>		S3, G3G4		X		EX	
A geometrid moth	<i>Idaea violacearia</i>		S1S3, G4		X		X	
A geometrid moth	<i>Metarranthis lateritaria</i>		S1, G2G4				X	
A geometrid moth	<i>Metarranthis sp 1</i>		S2, G3		X		X	
A noctuid moth	<i>Apamea inebriata</i>		S2S4, G4		X			
A noctuid moth	<i>Apamea mixta</i>		S2S4, G3G4					
A noctuid moth	<i>Apharetra dentata</i>		S2S3, G4				X	
A noctuid moth	<i>Chytonix sensilis</i>		S1S3, G4			X	X	
A noctuid moth	<i>Cucullia alfarata</i>		S2?, G4		EX		X	
A notodontid moth	<i>Heterocampa varia</i>		S3, G3G4			X		
A noctuid moth	<i>Macrochilo louisiana</i>		S2S3, G4			X	X	
A noctuid moth	<i>Macrochilo santerivalis</i>		S1S3, G3G4		X	X		
A noctuid moth	<i>Macrochilo sp 1</i>		S3, G3		X	X	X	
A noctuid moth	<i>Meropleon cosmion</i>		S1S2, G4		X		X	
A noctuid moth	<i>Meropleon titan</i>		S1, G2G4		X			
A slugmoth	<i>Monoleuca semifascia</i>		S2S3, G4G5			X	X	
A spanworm	<i>Itame sp 1</i>		S3, G3			X	X	

NJ Wildlife Action Plan: 01/23/08

(Appendix I; Nongame Species of Conservation Concern continued)

Common Name	Scientific Name	Conservation Status	State & Global Rank	Atlantic Coastal Landscape	Delaware Bay Landscape	Piedmont Plains Landscape	Pinelands Landscape	Skylands Landscape
<b>Insects (continued)</b>								
Buchholz's gray	<i>Hypomecis buchholzaria</i>		S3, G3G4				X	
Carter's noctuid moth	<i>Spartiniphaga carterae</i>		S2, G2G3				X	
Chain fern borer moth	<i>Papaipema stenocelis</i>		S3, G4		X		X	
Clubtail dragonfly	<i>Gomphus septima</i>		S1, G2			X		X
Daecke's pyralid moth	<i>Crambus daeckellus</i>		S1S3, G1G3				X	
Doll's merolonche	<i>Merolonche dolli</i>		S1S3, G3G4			EX	X	
Dotted skipper	<i>Hesperia attalus</i>	SC	S2S3, G3G4		M		M	
Extra-striped snaketail	<i>Ophiogomphus anomalus</i>		SH, G3					X
Granitosa fern moth	<i>Callopietria granitosa</i>		S2S3, G4G5				X	
Green-faced clubtail	<i>Gomphus viridifrons</i>		S1, G3					
Half yellow moth	<i>Tarachidia semiflava</i>		S2S4, G4		X			
Harris's checkerspot	<i>Chlosyne harrisii</i>	SC	S2S3, G4			M		M
Herodias or Gerhard's underwing	<i>Catocala herodias gerhardi</i>		S3, G3				X	
Hessel's hairstreak	<i>Callophrys hesseli</i>	SC	S3S4, G3G4		M		M	
Lemmer's pinion moth	<i>Lithophane lemmeri</i>		S2, G3G4		X	X	X	
Maritime sunflower borer	<i>Papaipema maritima</i>		S1, G3	X	X			
New England bluet	<i>Enallagma laterale</i>		S1S2, G3					X
Northern metalmark	<i>Calephelis borealis</i>	SC	S2S3, G3G4					M
Pine Barrens bluet	<i>Enallagma recurvatum</i>		S3, G3		X		X	
Pine Barrens zale	<i>Zale sp 1</i>		S3, G3Q				EX	
Pink streak	<i>Faronta rubripennis</i>		S3, G3G4		X	X	X	
Pitcher plant borer moth	<i>Papaipema appassionate</i>		S2S3, G4				X	X
Placentia tiger moth	<i>Grammia placentia</i>		S1S3, G4				X	
Precious underwing	<i>Catocala pretiosa pretiosa</i>		S2S3, G4		X		EX	
Rare skipper	<i>Problema bulenta</i>		S2, G2G3		X	X	X	
Regal moth	<i>Citheronia regalis</i>		S3, G5		X			
Ringed boghaunter	<i>Williamsonia lintneri</i>		SH, G3			X		
Rippled wave	<i>Idaea obfusaria</i>		S2S4, G4G5		X			
Scarlet bluet	<i>Enallagma pictum</i>		S3, G3		X	X	X	
Schweitzer's buckmoth	<i>Hemileuca sp 2</i>		S1, G1Q					X
Southern ptichodis	<i>Ptichodis bistrigata</i>		S1S3, G3				X	
The consort, or consors underwing	<i>Catocala consors sorsconi</i>		S1S3, G4		EX	X***	EX	
Two-spotted skipper	<i>Euphyes bimacula</i>	SC	S3, G4				M	

(Appendix I; Nongame Species of Conservation Concern continued)

Common Name	Scientific Name	Conservation Status	State & Global Rank	Atlantic Coastal Landscape	Delaware Bay Landscape	Piedmont Plains Landscape	Pinelands Landscape	Skylands Landscape
<b>Fish</b>								
American brook lamprey*	<i>Lampetra appendix</i>	RP	S2, G4			X	X	X
Atlantic sturgeon	<i>Acipenser oxyrhynchus</i>	SC** & RP	S3, G3	X	X	X		
Banded sunfish*	<i>Enneacanthus obesus</i>	RP	-				X	
Black-banded sunfish	<i>Enneacanthus chatedon</i>	RP	-				X	
Bridle shiner	<i>Notropis bifrenatus</i>	RP	-			X		X

\*Species is also recognized as target species of ecoregional concern by the Nature Conservancy - NJ Chapter

\*\*Federal species of special concern. Note: Atlantic sturgeon is a game species, currently with a national moratorium on any take.

\*\*\* Only historic records exist, species believed to be extirpated.

SC: NJ state species of special concern.

RP: Species of regional priority; currently mammals, reptiles, and insects are not identified due to information gaps.

M: Maintain population, species occurs within specific habitat(s) of landscape region.

I: Increase and stabilize population, species occurs within specific habitat(s) of landscape region.

R: Research and restore population, suitable habitat, species presence unknown.

X: Species present. Management strategy not yet determined.

EX: Extant population. Observations are extremely rare, but populations still exist in the state.

**Table W7. Game Species of Regional Priority**

Note: Species identified within the table have seasonal harvests within New Jersey.

Common Name	Scientific Name	Regional Priority	State & Global Rank	Atlantic Coastal Landscape	Delaware Bay Landscape	Piedmont Plains Landscape	Pinelands Landscape	Skylands Landscape
<b>Birds</b>								
American black duck	<i>Anas rubripes</i>	RP	-	M	M	I	I	I
American woodcock	<i>Scolopax minor</i>	RP	-		I	I	I	I
Atlantic brant	<i>Branta bernicla</i>	RP	-	M		M		
Black scoter	<i>Melanitta nigra</i>	RP	-	R	R	R		
Bufflehead	<i>Bucephala albeola</i>	RP	-	M	M	M		
Canada geese (Atlantic population, migrants)	<i>Branta canadensis interior</i>	RP	-	M	M	M	M	M
Canvasback	<i>Aythya valisineria</i>	RP	-	I	I	I		
Clapper rail	<i>Rallus longirostris</i>	RP	-	M	M	M		
Common eider*	<i>Somateria mollissima</i>	RP	-	X				
Greater scaup	<i>Aythya marila</i>	RP	-	I	I	I		
Harlequin duck*	<i>Histrionicus histrionicus</i>	-	-	X				
Lesser scaup	<i>Aythya affinis</i>	RP	-	I	I	I		
Long-tailed duck	<i>Clangula hyemalis</i>	RP	-	R	R	R		
Northern bobwhite	<i>Colinus virginianus</i>	RP	-		R	R	R	R
Northern pintail	<i>Anas acuta</i>	RP	-	I	I	I		
Surf scoter	<i>Melanitta perspicillata</i>	RP	-	R	R	R		
Virginia rail	<i>Rallus limicola</i>	RP	-	R	R	R	R	R
White-winged scoter	<i>Melanitta fusca</i>	RP	-	R	R	R		
Wood duck	<i>Aix sponsa</i>	RP	-		M	M	M	M
<b>Fish</b>								
Brook trout ♦	<i>Salvelinus fontinalis</i>		S3, G5			X		X

\*Species considered regional priority, however, NJ is south of the species' normal winter range and there is no natural habitat. A few occur along man-made rock jettys each winter, but this is insignificant to the overall population status.

♦Species is a New Jersey game species, but is also an excellent indicator of water quality.

RP: Species of regional priority; currently mammals, reptiles, and insects are not identified due to information gaps.

M: Maintain population, species occurs within specific habitat(s) of landscape region.

I: Increase and stabilize population, species occurs within specific habitat(s) of landscape region.

R: Research and restore population, suitable habitat, species presence unknown.

X: Species present. Management strategy not yet determined.

(Appendix I continued)

**Table W8. Fish Species**

Note: Species identified within the table are nongame species within New Jersey, currently without state or regional status.

Common Name	Scientific Name	Regional Priority*	State & Global Rank	Atlantic Coastal Landscape	Delaware Bay Landscape	Piedmont Plains Landscape	Pinelands Landscape	Skylands Landscape
<b>Fish</b>								
Comely shiner	<i>Notropis amoenus</i>	-	-			X		X
Cutlips minnow	<i>Exoglossum magilllingua</i>	-	-			X		X
Hickory shad	<i>Alosa mediocris</i>	-	S3, G5	X	X	X		X
Ironcolor shiner	<i>Notropis chaleybaeus</i>	-	S1S2, G4			X	X	X
Longnose gar	<i>Lepisosteus osseus</i>	-	-					X
Margined madtom	<i>Noturus insignis</i>	-	-		X	X	X	X
Northern hogsucker	<i>Hypentelium nigricans</i>	-	-					X
Pirate perch	<i>Aphroderus sayanus</i>	-	-				X	
Rainbow smelt	<i>Osmerus mordax</i>	-	SU, G5			X		
Shield darter	<i>Perca peltata</i>	-	-			X	X	X
Slimy sculpin**	<i>Cottus cognatus</i>	-	S3, G5			X		X

\*\*Species has undergone Delphi review and has potential listing for state species of special concern.

X: Species present. Management strategy not yet determined.

**Table W9. Game Species**

Note: Species identified within the table have seasonal harvests within New Jersey and currently are not identified as regional priority species, but they are considered by DFW to be species of concern.

Common Name	Scientific Name	Regional Priority	State & Global Rank	Atlantic Coastal Landscape	Delaware Bay Landscape	Piedmont Plains Landscape	Pinelands Landscape	Skylands Landscape
<b>Mammals</b>								
River otter	<i>Lutra canadensis</i>	-	-	M	M	M	M	M
<b>Birds</b>								
Ruffed grouse	<i>Bonasa umbellus</i>	-	-		R	R	R	R
Sora rail	<i>Porzana carolina</i>	-	-	R	R	R	R	R
<b>Fish</b>								
Brown trout*	<i>Salmo trutta</i>	-	-			X		X
Rainbow trout*	<i>Oncorhynchus mykiss</i>	-	-			X		X

\* Species are not native to New Jersey. Established breeding populations exist due to stocking for recreational use.

RP: Species of regional priority; currently mammals, reptiles, and insects are not identified due to information gaps.

M: Maintain population, species occurs within specific habitat(s) of landscape region.

I: Increase and stabilize population, species occurs within specific habitat(s) of landscape region.

R: Research and restore population, suitable habitat, species presence unknown.

X: Species present. Management strategy not yet determined.

(Appendix I continued)

**Table W10. Suites of Wildlife Species and their Location in New Jersey**

Suite	Members include but are not limited to	Atlantic Coastal Landscape	Delaware Bay Landscape	Piedmont Plains Landscape	Pinelands Landscape	Skylands Landscape
<b>Mammals</b>						
Forest Dwelling Bats	Eastern pipistrel, Indiana bat, Northern long-eared bat, Small-footed myotis, red bat, silver-haired bat and hoary bat	X	X	X	X	X
Pinnipeds	Harbor seal	X				
Whales	Blue whale, Fin whale, Humpback whale, Right whale, Sei whale, Sperm whale	X				
<b>Birds</b>						
Beachnesting Birds	Black skimmer, Least tern, Piping plover, American Oystercatcher, Common Tern	X	X	X	X	
Interior Forest Cavity Nesters	Barred owl, Long eared owl, Pileated woodpecker		X	X	X	X
Savannah and Forest-edge Habitat Cavity Nesters	Red-headed woodpecker, Northern flicker, American kestrel, Great crested flycatcher, Eastern screech-owl, Prothonotary warbler		X	X	X	X
Coastal High Marsh Birds	Black rail, Henslow's sparrow, Marsh wren, Northern harrier, Saltmarsh sharp-tailed sparrow, Seaside sparrow, Sedge wren, American oystercatcher, Short-eared owl	X	X	X		
Coastal Low Marsh Birds	Saltmarsh sharp-tailed sparrow and seaside sparrow					
Colonial Waterbirds	Black-crowned night-heron, Caspian tern, Forster's tern, Glossy ibis, Great blue heron, Great egret, Little blue heron, Snowy egret, Tricolored heron, Yellow-crowned night-heron, Willet, Common tern, Green heron	X	X	X	X	X
Forest Passerines	Acadian flycatcher, Black-and-white warbler, Blackburnian warbler, Black-throated blue warbler, Black-throated green warbler, Canada warbler, Cerulean warbler, Chuck-will's-widow, Eastern wood-pewee, Hooded warbler, Kentucky warbler, Least flycatcher, Louisiana waterthrush, Northern parula, Pine warbler, Prothonotary warbler, Purple finch, Rose-breasted grosbeak, Scarlet tanager, Blue-headed vireo, Veery, Whip-poor-will, Winter wren, Wood thrush, Worm-eating warbler, Yellow-billed cuckoo, Yellow-throated warbler, Yellow-throated vireo		X	X	X	X
Freshwater Wetland Birds	American bittern, King rail, Least bittern, Pied-billed grebe, Sedge wren, Spotted sandpiper		X	X	X	X
Grassland Birds	Bobolink, Eastern kingbird, Eastern meadowlark, Field sparrow, Grasshopper sparrow, Henslow's sparrow, Northern harrier, Savannah sparrow, Upland sandpiper, Vesper sparrow, American kestrel		X	X	X	X

NJ Wildlife Action Plan: 01/23/08

(Appendix I; Suites of Wildlife Species and their Location in New Jersey continued)

Suite	Members include but are not limited to	Atlantic Coastal Landscape	Delaware Bay Landscape	Piedmont Plains Landscape	Pinelands Landscape	Skylands Landscape
<b>Birds (continued)</b>						
Grassland Birds	Bobolink, Eastern kingbird, Eastern meadowlark, Field sparrow, Grasshopper sparrow, Henslow's sparrow, Northern harrier, Savannah sparrow, Upland sandpiper, Vesper sparrow, American kestrel		X	X	X	X
Migratory Shorebirds	Red knot, Ruddy turnstone, Sanderling, Semipalmated sandpiper, Whimbrel	X	X	X		
Migratory Songbirds and Raptors		X	X	X	X	X
Pelagic and Seasonally Pelagic Birds	Audubon's Shearwater, Red-throated Loon, Horned Grebe	X	X			
Forest Raptors	Barred owl, Broad-winged hawk, Cooper's hawk, Long-eared owl, Northern goshawk, Red-shouldered hawk, Sharp-shinned hawk, Bald eagle, Long-eared owl, Red-shouldered hawk		X	X	X	X
Shrub-scrub/Open Field (3 - 7 year) Birds	Baltimore oriole, Black-billed cuckoo, Blue-winged warbler, Brown thrasher, Common nighthawk, Eastern towhee, Golden-winged warbler, Gray catbird, Horned lark, Least flycatcher, Prairie warbler, Willow flycatcher, Yellow-breasted chat, Indigo bunting, Common barn owl		X	X	X	X
Early Succession (0 -3 years) Open Field Birds	Upland sandpiper, Grasshopper sparrow, Bobolink; Henslow's sparrow, Savannah sparrow, Vesper sparrow and Eastern meadowlark are found in 2-5 yr early succession habitat					
Waterfowl	American black duck, Wood duck	X	X	X	X	X
Other	Peregrine falcon, Chimney swift, Common nighthawk, Cliff swallow	X	X	X	X	X
<b>Reptiles</b>						
Forest Dwelling Reptiles	<i>Snakes:</i> Corn snake, Timber rattlesnake, Northern pine snake, Northern copperhead, Eastern kingsnake, Coastal plain milk snake		X	X	X	X
Reptile Inhabitants of Wetland, Marsh and Bog	<i>Turtles:</i> Bog turtles, Eastern box turtle (???or make another category for open field type), Spotted turtle (??)		X	X	X	X
Reptiles Associated with water (lakes, ponds, streams)	<i>Snakes:</i> Queen snake <i>Turtles:</i> Wood turtles		X	X	X	X
Reptiles of Special Concern	Coastal plain milk snake, Eastern box turtle, Eastern kingsnake, Northern copperhead, Spotted turtle	X	X	X	X	X
Sea Turtles	Hawksbill turtle, Kemp's ridley sea turtle, Atlantic green sea turtle, Atlantic leatherback sea turtle, Atlantic loggerhead sea turtle	X				
<b>Amphibians</b>						
Amphibians of Special Concern	Carpenter frog, Fowler's toad, Jefferson salamander, marbled salamander, northern spring salamander	X	X	X	X	X

NJ Wildlife Action Plan: 01/23/08

(Appendix I; Suites of Wildlife Species and their Location in New Jersey continued)

Suite	Members include but are not limited to	Atlantic Coastal Landscape	Delaware Bay Landscape	Piedmont Plains Landscape	Pinelands Landscape	Skylands Landscape
<b>Amphibians (continued)</b>						
Vernal Pool and Vernal Sinkhole Breeders	Obligate species: Jefferson salamander, blue-spotted salamander, spotted salamander, tiger salamander, marbled salamander, wood frogs, spadefoot toad Facultative species: Pine Barrens treefrog, spring peeper, southern or northern gray treefrog, green frog, southern leopard frog, pickerel frog, cricket frog, upland or NJ chorus frog, carpenter frog, bullfrog, American toad, Fowler's toad, four-toed salamander, red-spotted newt adults, long-tailed salamander, spotted turtles, painted turtles, snapping turtles, mud turtle	X	X	X	X	X
Non-vernal Sinkhole Inhabitants	Spring peeper, southern or northern gray treefrog, green frog, southern leopard frog, pickerel frog, cricket frog, upland or NJ chorus frog, carpenter frog, bullfrog, American toad, Fowler's toad, red-spotted newt adults, spotted turtles, painted turtles, snapping turtles		X		X	X
Limestone Fen Inhabitants	Bog turtle, long-tailed salamander, northern red salamander, green frog, bullfrog, spotted turtle, snapping turtle					X
<b>Mollusks</b>						
Mollusks of Special Concern	Creeper			X		X
<b>Insects</b>						
Lepidoptera of Federal or State Legal Status	Mitchell's satyr, Appalachian grizzled skipper, Bronze copper, Frosted elfin, Silver-bordered fritillary, Checkered white					
Lepidoptera of Special Concern	Dotted skipper, Harris's checkerspot, Hessel's hairstreak, northern metalmark, two-spotted skipper		X	X	X	X
Odonata Species			X	X	X	X
<b>Fish</b>						
Anadromous of Special Concern		X	X	X	X	X

X: Species suite occurs within identified landscape region.