

CHAPTER 3.0

DISTRIBUTION AND ABUNDANCE OF WILDLIFE

*It was a mossy swamp, which required the long legs of a moose to traverse,
And it is very likely that we scared some of them in our transit,
Though we saw none. It was ready to echo the growl of a bear,
the howl of a wolf, or the scream of a panther;
but when you get fairly into the middle of one of these grim forests,
you are surprised to find that the larger inhabitants are not at home commonly,
but have left only a puny red squirrel to bark at you.*

Henry David Thoreau, 1846, *The Maine Woods*

3.1 DISTRIBUTION AND ABUNDANCE OF ALL SPECIES IN MAINE

Maine covers nearly as much territory as the rest of the New England states combined, and percentage wise, it is the most heavily forested state in the Union. Maine also covers a wide range of latitude. Species of plants characteristic of southern Appalachia can be found in southern Maine, and subarctic species can be found in the northern tier counties (Gawler et al. 1996). These influences, along with those of man, have played, and continue to play, an important role in the distribution and abundance of fish and wildlife in Maine.

In this section we discuss the abundance and distribution of Maine's fauna as we know and understand them. For convenience, we address them by taxa, i.e. birds, herpetofauna (reptiles and amphibians), invertebrates, inland fish, mammals (non-marine), and marine wildlife. Based on the best available existing information and guidance provided by the Department of Marine Resources (MDMR) and National Marine Fisheries Service (NMFS), the marine portion of Maine's CWCS focuses attention on listed marine mammals (whales), listed marine turtles, and diadromous fish from the suite of marine species. Outside of these groups, the majority of the species that have active research programs within the Department of Marine Resources are commercially harvested and have management plans and/or regulations in place for conservation purposes (Chapter 6, Appendix 10) or are National Marine Fisheries Service species of concern in the northeast region (Maine through Virginia) and have proactive conservation programs addressing conservation opportunities (Chapter 6, Appendix 10). With cooperation and guidance from MDMR and NMFS, we will place a high priority on further evaluating the full suite of marine resources for future inclusion in Maine's CWCS.

Where appropriate, sources of information are referenced in the text. However, much of the following information has been summarized in tabular form. Tables 30-35 (Chapter 5) are more complex, but for the purpose of this chapter, they provide tabular information about the higher

priority species, their distribution, abundance, and habitat associations. The reader is encouraged to refer to these tables for additional information.

Throughout this section, there are a series of tables describing species distribution as: *Most of State, Coastal, South, North, East, West, Central, and Spotty*. These terms are generally described below, and the geographic areas are illustrated in Figure 1. Please refer to Figure 5 and the associated text in Chapter 4, Section 4.1.8 for more detailed descriptions of Maine's ecoregions.

Figure 1. General Geographic Areas Describing the Distribution of Wildlife in Maine.



- **Coastal:** generally refers to the Gulf of Maine Coastal Lowlands, CMASCo Bay Coast, Penobscot Bay Region, and the East Coastal Region ecoregions.
- **South:** generally refers to the Sebago – Ossipee Hill and Plain and Gulf of Maine Coastal Plain ecoregions, but may also include Gulf of Maine Coastal Lowlands.
- **North:** generally refers to the Boundary Plateau, Saint John Uplands, Aroostook Hills, and Aroostook Lowlands ecoregions.
- **East:** generally refers to the Maine – New Brunswick Lowlands and Eastern Interior ecoregions.
- **West:** generally refers to the Connecticut Lakes, Mahoosuc and Rangeley Lakes, White Mountains, and Western Foothills ecoregions.
- **Spotty:** indicates that the distribution of the species is spotty within the geographic areas they are found.

3.1.1 BIRDS

General Overview

Many of Maine's 292 species of birds occur statewide in suitable habitat, but others occur only in portions of the state (Boone and Krohn 1998b). Gawler et al. (1996) reported that at least 29 inland breeding species of birds reach the northern limits of their normal breeding distribution in Maine, 28 species the southern limits, and 2 species their eastern limits. Two species (Wild Turkey and Peregrine Falcon) have recently been reintroduced in Maine. The Peregrine Falcon population is slowly increasing, but the Wild Turkey has expanded into areas beyond our expectations. Other species, such as the Turkey Vulture, Blue-winged Warbler, Evening Grosbeak, American Oystercatcher, and Great Cormorant have expanded their range into Maine at various times over the past century. A list of birds occurring in Maine is provided in Table 2.

Table 2. Birds of Maine – Species List.	
Species	Scientific Name
Loons and Grebes	
Common Loon	<i>Gavia immer</i>
Horned Grebe	<i>Podiceps auritis</i>
Pied-billed Grebe	<i>Podilymbus podiceps</i>
Red-necked Grebe	<i>Podiceps grisgena</i>
Red-throated Loon	<i>Gavia stellata</i>
Shearwaters and Storm-petrels	
Greater Shearwater	<i>Puffinus gravis</i>
Leach's Storm-petrel	<i>Oceanodroma leucorhoa</i>
Manx Shearwater	<i>Puffinus puffinis</i>
Northern Fulmar	<i>Fulmarus glacialis</i>
Sooty Shearwater	<i>Puffinus griseus</i>
Wilson's Storm-petrel	<i>Oceanites oceanicus</i>
Cormorants and Gannet	
Double-crested Cormorant	<i>Phalacrocorax auritus</i>
Great Cormorant	<i>Phalacrocorax carbo</i>
Northern Gannet	<i>Morus bassanus</i>
Wading Birds	
American Bittern	<i>Botaurus lentiginosus</i>
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>
Cattle Egret	<i>Bubulcus ibis</i>
Glossy Ibis	<i>Plegadis falcinellus</i>
Great Blue Heron	<i>Ardea herodias</i>
Great Egret	<i>Ardea alba</i>
Green Heron	<i>Butorides virescens</i>
Least Bittern	<i>Ixobrychus exilis</i>
Little Blue Heron	<i>Hydranassa caerulea</i>
Snowy Egret	<i>Egretta thula</i>
Tri-colored Heron	<i>Hydranassa tricolor</i>
Waterfowl	
American Black Duck	<i>Anas rubripes</i>
American Widgeon	<i>Anas americana</i>

Table 2. Birds of Maine – Species List.	
Species	Scientific Name
Atlantic Brant	<i>Branta bernicla</i>
Barrow's Goldeneye	<i>Bucephala islandica</i>
Black Scoter	<i>Melanitta nigra</i>
Blue-winged Teal	<i>Anas discors</i>
Bufflehead	<i>Bucephala albeola</i>
Canada Goose	<i>Branta canadensis</i>
Canada Goose (North Atlantic Population)	<i>Branta canadensis</i>
Common Eider	<i>Somateria mollissima</i>
Common Goldeneye	<i>Bucephala clangula</i>
Common Merganser	<i>Mergus merganser</i>
Gadwall	<i>Anas strepera</i>
Greater Scaup	<i>Aythya marila</i>
Green-winged Teal	<i>Anas crecca</i>
Harlequin Duck	<i>Histrionicus histrionicus</i>
Hooded Merganser	<i>Lophodytes cucullatus</i>
King Eider	<i>Somateria spectabilis</i>
Lesser Scaup	<i>Aythya affinis</i>
Long-tailed Duck	<i>Clangula hyemalis</i>
Mallard	<i>Anas platyrhynchos</i>
Mute Swan ^{NI}	<i>Cygnus olor</i>
Northern Pintail	<i>Anas acuta</i>
Northern Shoveler	<i>Anas clypeata</i>
Red-breasted Merganser	<i>Mergus serrator</i>
Ring-necked Duck	<i>Aythya collaris</i>
Ruddy Duck	<i>Oxyura jamaicensis</i>
Snow Goose	<i>Chen caerulescens</i>
Surf Scoter	<i>Melanitta perspicillata</i>
White-winged Scoter	<i>Melanitta fusca</i>
Wood Duck	<i>Aix sponsa</i>
Raptors	
American Kestrel	<i>Falco sparverius</i>
Bald Eagle	<i>Haliaeetus leucocephalus</i>
Broad-winged Hawk	<i>Buteo platypterus</i>
Cooper's Hawk	<i>Accipiter cooperii</i>
Golden Eagle	<i>Aquila chrysaetos</i>
Merlin	<i>Falco columbarius</i>
Northern Goshawk	<i>Accipiter gentilis</i>
Northern Harrier	<i>Circus cyaneus</i>
Osprey	<i>Pandion haliaetus</i>
Peregrine Falcon	<i>Falco peregrinus</i>
Red-shouldered Hawk	<i>Buteo lineatus</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
Rough-legged Hawk	<i>Buteo lagopus</i>
Sharp-shinned Hawk	<i>Accipiter striatus</i>
Turkey Vulture	<i>Cathartes aura</i>
Gallinaceous Birds	
Northern Bobwhite ^{NI}	<i>Colinus virginianus</i>

Table 2. Birds of Maine – Species List.	
Species	Scientific Name
Ring-necked Pheasant ^{NI}	<i>Phasianus colchicus</i>
Ruffed Grouse	<i>Bonasa umbellus</i>
Spruce Grouse	<i>Dendragapus canadensis</i>
Wild Turkey	<i>Meleagris gallopavo</i>
Rails, Coot, and Crane	
American Coot	<i>Fulica americana</i>
Common Moorhen	<i>Gallinula chloropus</i>
Sandhill Crane	<i>Grus canadensis</i>
Sora	<i>Porzana carolina</i>
Virginia Rail	<i>Rallus limicola</i>
Yellow Rail	<i>Coturnicops noveboracensis</i>
Shorebirds	
American Golden Plover	<i>Pluvialis dominica</i>
American Oystercatcher	<i>Haematopus palliatus</i>
American Woodcock	<i>Scolopax minor</i>
Baird's Sandpiper	<i>Calidris bairdii</i>
Black-bellied Plover	<i>Pluvialis squatarola</i>
Buff-breasted Sandpiper	<i>Tryngites subruficollis</i>
Dunlin	<i>Calidris alpina</i>
Eskimo Curlew	<i>Numenius borealis</i>
Greater Yellowlegs	<i>Tringa melanoleuca</i>
Hudsonian Godwit	<i>Limosa haemastica</i>
Killdeer	<i>Charadrius vociferus</i>
Least Sandpiper	<i>Calidris minutilla</i>
Lesser Yellowlegs	<i>Tringa flavipes</i>
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>
Pectoral Sandpiper	<i>Calidris melanotos</i>
Piping Plover	<i>Charadrius melodus</i>
Purple Sandpiper	<i>Calidris maritima</i>
Red Knot	<i>Calidris canutus</i>
Red Phalarope	<i>Phalaropus fulicaria</i>
Red-necked Phalarope	<i>Phalaropus lobatus</i>
Ruddy Turnstone	<i>Arenaria interpres</i>
Sanderling	<i>Calidris alba</i>
Semipalmated Plover	<i>Charadrius semipalmatus</i>
Semipalmated Sandpiper	<i>Calidris pusilla</i>
Short-billed Dowitcher	<i>Limnodromus griseus</i>
Solitary Sandpiper	<i>Tringa solitaria</i>
Spotted Sandpiper	<i>Actitis macularia</i>
Stilt Sandpiper	<i>Calidris himantopus</i>
Upland Sandpiper	<i>Bartramia longicauda</i>
Western Sandpiper	<i>Calidris mauri</i>
Whimbrel	<i>Numenius phaeopus</i>
White-rumped Sandpiper	<i>Calidris fuscicollis</i>
Willet	<i>Catoptrophorus semipalmatus</i>
Wilson's Phalarope	<i>Phalaropus tricolor</i>
Wilson's Snipe	<i>Gallinago delicata</i>

Table 2. Birds of Maine – Species List.	
Species	Scientific Name
Gulls and Terns	
Arctic Tern	<i>Sterna paradisaea</i>
Black Tern	<i>Chlidonias niger</i>
Black-headed Gull	<i>Larus ridibundus</i>
Black-legged Kittiwake	<i>Rissa tridactyla</i>
Bonaparte's Gull	<i>Larus philadelphia</i>
Common Tern	<i>Sterna hirundo</i>
Glaucous Gull	<i>Larus glaucescens</i>
Great Black-backed Gull	<i>Larus marinus</i>
Great Skua	<i>Stercorarius skua</i>
Herring Gull	<i>Larus argentatus</i>
Iceland Gull	<i>Larus glaucoides</i>
Laughing Gull	<i>Larus atricilla</i>
Least Tern	<i>Sterna antillarum</i>
Little Gull	<i>Larus minutus</i>
Parasitic Jaeger	<i>Stercorarius pomarinus</i>
Pomarine Jaeger	<i>Stercorarius parasiticus</i>
Ring-billed Gull	<i>Larus delawarensis</i>
Roseate Tern	<i>Sterna dougallii</i>
Auks	
Atlantic Puffin	<i>Fratercula arctica</i>
Black Guillemot	<i>Cephus grylle</i>
Common Murre	<i>Uria aalge</i>
Dovekie	<i>Alle alle</i>
Razorbill	<i>Alca torda</i>
Thick-billed Murre	<i>Uria lomvia</i>
Doves	
Mourning Dove	<i>Zenaida macroura</i>
Rock Pigeon ^{NI}	<i>Columba livia</i>
Cuckoos	
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>
Owls and Nightjars	
Barred Owl	<i>Strix varia</i>
Boreal Owl	<i>Aegolius funereus</i>
Common Nighthawk	<i>Chordeiles minor</i>
Eastern Screech-Owl	<i>MegASCops asio</i>
Great-horned Owl	<i>Bubo virginianus</i>
Long-eared Owl	<i>Asio otus</i>
Northern Saw-whet Owl	<i>Aegolius acadicus</i>
Short-eared Owl	<i>Asio flammeus</i>
Snowy Owl	<i>Nyctea scandiaca</i>
Whip-poor-will	<i>Caprimulgus vociferous</i>
Swift and Hummingbird	
Chimney Swift	<i>Chaetura pelagica</i>
Ruby-throated Hummingbird	<i>Archilochus colubris</i>
Kingfisher	

Table 2. Birds of Maine – Species List.	
Species	Scientific Name
Belted Kingfisher	<i>Ceryle alcyon</i>
Woodpeckers	
American Three-toed Woodpecker	<i>Picoides dorsalis</i>
Black-backed Woodpecker	<i>Picoides arcticus</i>
Downy Woodpecker	<i>Picoides pubescens</i>
Hairy Woodpecker	<i>Picoides villosus</i>
Northern Flicker	<i>Colaptes auratus</i>
Pileated Woodpecker	<i>Dryocopus pileatus</i>
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>
Flycatchers, Lark, and Swallows	
Alder Flycatcher	<i>Empidonax alnorum</i>
Bank Swallow	<i>Riparia riparia</i>
Barn Swallow	<i>Hirundo rustica</i>
Cliff Swallow	<i>Hirundo pyrrhonata</i>
Eastern Kingbird	<i>Tyrannus tyrannus</i>
Eastern Phoebe	<i>Sayornis phoebe</i>
Eastern Wood-Pewee	<i>Contopus virens</i>
Great-crested Flycatcher	<i>Myiarchus crinitus</i>
Horned Lark	<i>Eremophila alpestris</i>
Least Flycatcher	<i>Empidonax minimus</i>
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>
Olive-sided Flycatcher	<i>Contopus borealis</i>
Purple Martin	<i>Progne subis</i>
Tree Swallow	<i>Tachycineta bicolor</i>
Willow Flycatcher	<i>Empidonax traillii</i>
Yellow-bellied Flycatcher	<i>Empidonax flaviventris</i>
Jays, Crow, and Raven	
American Crow	<i>Corvus brachyrhynchos</i>
Blue Jay	<i>Cyanocitta cristata</i>
Common Raven	<i>Corvus corax</i>
Gray Jay	<i>Perisoreus canadensis</i>
Chickadees, Titmouse, and Nuthatches	
Black-capped Chickadee	<i>Parus atricapillus</i>
Boreal Chickadee	<i>Parus hudsonicus</i>
Brown Creeper	<i>Certhia americana</i>
Red-breasted Nuthatch	<i>Sitta canadensis</i>
Tufted Titmouse	<i>Parus bicolor</i>
White-breasted Nuthatch	<i>Sitta carolinensis</i>
Wrens	
Carolina Wren	<i>Thryothorus ludovicianus</i>
House Wren	<i>Troglodytes aedon</i>
Marsh Wren	<i>Cistothorus palustris</i>
Sedge Wren	<i>Cistothorus platensis</i>
Winter Wren	<i>Troglodytes troglodytes</i>
Mimic Thrushes, Thrushes, and Kinglets	

Table 2. Birds of Maine – Species List.	
Species	Scientific Name
American Robin	<i>Turdus migratorius</i>
Bicknell's Thrush	<i>Catharus bicknelli</i>
Blue-gray Gnatcatcher	<i>Poliophtila caerulea</i>
Brown Thrasher	<i>Toxostoma rufum</i>
Eastern Bluebird	<i>Sialia sialia</i>
Golden-crowned Kinglet	<i>Regulus satrapa</i>
Gray Catbird	<i>Dumetella carolinensis</i>
Hermit Thrush	<i>Catharus guttatus</i>
Northern Mockingbird	<i>Mimus polyglottus</i>
Ruby-crowned Kinglet	<i>Regulus calendula</i>
Swainson's Thrush	<i>Catharus ustulatus</i>
Veery	<i>Catharus fuscescens</i>
Wood Thrush	<i>Hylocichla mustelina</i>
Pipit and Waxwings	
American Pipit	<i>Anthus rubescens</i>
Bohemian Waxwing	<i>Bombycilla garrulus</i>
Cedar Waxwing	<i>Bombycilla cedrorum</i>
Shrikes	
Loggerhead Shrike	<i>Lanius ludovicianus</i>
Northern Shrike	<i>Lanius excubitor</i>
Vireos	
Blue-headed Vireo	<i>Vireo solitarius</i>
Philadelphia Vireo	<i>Vireo philadelphicus</i>
Red-eyed Vireo	<i>Vireo olivaceus</i>
Warbling Vireo	<i>Vireo gilvus</i>
Yellow-throated Vireo	<i>Vireo flavifrons</i>
Warblers	
American Redstart	<i>Setophaga ruticilla</i>
Bay-breasted Warbler	<i>Dendroica castanea</i>
Black and White Warbler	<i>Mniotilta varia</i>
Blackburnian Warbler	<i>Dendroica fusca</i>
Blackpoll Warbler	<i>Dendroica striata</i>
Black-throated Blue Warbler	<i>Dendroica caerulescens</i>
Black-throated Green Warbler	<i>Dendroica virens</i>
Blue-winged Warbler	<i>Vermivora pinus</i>
Canada Warbler	<i>Wilsonia canadensis</i>
Cape May Warbler	<i>Dendroica tigrina</i>
Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>
Common Yellowthroat	<i>Geothlypis trichas</i>
Golden-winged Warbler	<i>Vermivora chrysoptera</i>
Louisiana Waterthrush	<i>Seiurus motacilla</i>
Magnolia Warbler	<i>Dendroica magnolia</i>
Mourning Warbler	<i>Oporornis philadelphia</i>
Nashville Warbler	<i>Vermivora ruficapilla</i>
Northern Parula	<i>Parula americana</i>
Northern Waterthrush	<i>Seiurus noveboracensis</i>
Orange-crowned Warbler	<i>Vermivora celata</i>

Table 2. Birds of Maine – Species List.	
Species	Scientific Name
Ovenbird	<i>Seiurus aurocapilla</i>
Palm Warbler	<i>Dendroica palmarum</i>
Pine Warbler	<i>Dendroica pinus</i>
Prairie Warbler	<i>Dendroica discolor</i>
Tennessee Warbler	<i>Vermivora peregrina</i>
Wilson's Warbler	<i>Wilsonia pusilla</i>
Yellow Warbler	<i>Dendroica petechia</i>
Yellow-rumped Warbler	<i>Dendroica coronata</i>
Grosbeaks and Bunting	
Indigo Bunting	<i>Passerina cyanea</i>
Northern Cardinal	<i>Cardinalis cardinalis</i>
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>
Scarlet Tanager	<i>Piranga olivacea</i>
Snow Bunting	<i>Plectrophenax nivalis</i>
Towhee and Sparrows	
American Tree Sparrow	<i>Spizella arborea</i>
Chipping Sparrow	<i>Spizella passerina</i>
Dark-eyed Junco	<i>Junco hyemalis</i>
Eastern Towhee	<i>Pipilo erythrophthalmus</i>
Field Sparrow	<i>Spizella pusilla</i>
Fox Sparrow	<i>Passerella iliaca</i>
Grasshopper Sparrow	<i>Ammodramus savannarum</i>
House Sparrow ^{NI}	<i>Passer domesticus</i>
Lapland Longspur	<i>Calcarius lapponicus</i>
Lincoln's Sparrow	<i>Melospiza lincolnii</i>
Nelson's Sharp-tailed Sparrow	<i>Ammodramus nelsoni</i>
Saltmarsh Sharp-tailed Sparrow	<i>Ammodramus caudacutus</i>
Savannah Sparrow	<i>Passerculus sandwichensis</i>
Seaside Sparrow	<i>Ammodramus maritimus</i>
Song Sparrow	<i>Melospiza melodia</i>
Swamp Sparrow	<i>Melospiza georgiana</i>
Vesper Sparrow	<i>Poocetes gramineus</i>
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>
White-throated Sparrow	<i>Zonotrichia albicollis</i>
Blackbirds and Starling	
Baltimore Oriole	<i>Icterus galbula</i>
Bobolink	<i>Dolichonyx oryzivorus</i>
Brown-headed Cowbird	<i>Molothrus ater</i>
Common Grackle	<i>Quiscalus quiscula</i>
Eastern Meadowlark	<i>Sturnella magna</i>
European Starling ^{NI}	<i>Sturnus vulgaris</i>
Orchard Oriole	<i>Icterus spurius</i>
Red-winged Blackbird	<i>Agelaius phoeniceus</i>
Rusty Blackbird	<i>Euphagus carolinus</i>
Finches	
American Goldfinch	<i>Carduelis tristis</i>
Common Redpoll	<i>Carduelis flammea</i>

Table 2. Birds of Maine – Species List.	
Species	Scientific Name
Dickcissel	<i>Spiza americana</i>
Evening Grosbeak	<i>Coccothraustes vespertinus</i>
House Finch ^{NI}	<i>Carpodacus mexicanus</i>
Pine Grosbeak	<i>Pinicola enucleator</i>
Pine Siskin	<i>Carduelis pinus</i>
Purple Finch	<i>Carpodacus purpureus</i>
Red Crossbill	<i>Loxia curvirostra</i>
White-winged Crossbill	<i>Loxia leucoptera</i>
NI = Non-indigenous	

Listed Birds

The Golden Eagle, Peregrine Falcon, Piping Plover, Roseate Tern, Least Tern, Black Tern, Sedge Wren, American Pipit, and Grasshopper Sparrow are all on Maine's list of Endangered Species, and the Bald Eagle, Razorbill, Atlantic Puffin, Harlequin Duck, Arctic Tern, and Upland Sandpiper are listed as Threatened. The Roseate Tern and Eskimo Curlew are federally listed as Endangered, and the Bald Eagle and Piping Plover are federally listed as Threatened. The Eskimo Curlew and Common Murre are listed as Extirpated, and the Passenger Pigeon, Great Auk, and Labrador Duck are extinct. Twenty-four species of birds are considered to be species of Special Concern in Maine (Appendix 4).

Coots, Cranes, and Rails

Breeding American Coots occur at just a few sites in central Maine, but their status is believed to be stable. Common Moorhens occur at roughly ten emergent marshes, mostly in central and southern Maine, but nothing is known about population trend. The Sandhill Crane is believed to have reproduced at least irregularly for the past 10-15 years at a single site in central Maine. The Yellow Rail, although recorded at several sites, has never been confirmed to be breeding in Maine. The American Coot, Common Moorhen, and Yellow Rail are all species of Special Concern in Maine (Appendix 4).

Distribution of Coots, Cranes, and Rails in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
American Coot (breeding)			X				X	X
Common Moorhen			X	X			X	X
Sandhill Crane							X	X
Sora	X							
Virginia Rail	X							
Yellow Rail				X	X			X

Cuckoos

Two species of Cuckoos are found in Maine, the Black-billed and Yellow-billed Cuckoo. Although the Black-billed Cuckoo is distributed statewide, it is much less common in the

northwest portion of the state. Its population appears stable in Maine, but significant, short-term declines (1980-2003) have been reported in the Northern New England Physiographic Region (Sauer et al. 2005). The Yellow-billed Cuckoo is less common and less widely distributed (Adamus 1987).

Distribution of Cuckoos in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
Black-billed Cuckoo	X							
Yellow-billed Cuckoo			X		X	X	X	

Doves

Only two species of doves occur in Maine, the Rock Pigeon and Mourning Dove. Both are considered abundant and have statewide distributions. The Rock Pigeon was introduced to the United States from Europe in the 1600s. The Mourning Dove is not hunted in Maine.

Distribution of Doves in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
Mourning Dove	X							
Rock Pigeon	X							

Gallinaceous Birds

Maine recognizes five Galliforms, of which the Ring-necked Pheasant is not a native species of Maine or the U.S. The Northern Bobwhite is not believed to be part of Maine's native avifauna, although small populations may persist locally for a few years following intentional (or accidental) reintroduction (Palmer 1949). The Wild Turkey was reintroduced to Maine beginning in 1977 with wild-trapped birds from Vermont. The population has increased dramatically, and it has become a popular game species since the first spring gobbler hunt was initiated in 1986. Ruffed Grouse or "partridge" is considered to be the most sought after game bird in Maine with an estimated population of over 1,700,000 birds (Weik 2000). The Spruce Grouse is confined to the boreal conifer forests and is not hunted in Maine.

Distribution of Gallinaceous Birds in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
Northern Bobwhite			X					
Ring-necked Pheasant			X					
Ruffed Grouse	X							
Spruce Grouse				X	X	X		
Wild Turkey			X		X	X	X	

Hummingbirds and Swifts

There are only two species in this group – the Chimney Swift and the Ruby-throated Hummingbird. There are approximately 80,000 Chimney Swifts currently in Maine (Rosenberg 2004), but the population significantly declined between 1966 and 2004, and appears to be continuing in its decline (Sauer et al. 2005). The Ruby-throated Hummingbird is considered to be common statewide.

Distribution of Hummingbirds and Swifts in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
Chimney Swift	X							
Ruby-throated Hummingbird	X							

Kingfisher

Only the Belted Kingfisher is found in Maine. It is distributed over most of the state and is considered to be common (Boone and Krohn 1998b).

Loons and Grebes

There are two species of loons and three species of grebes found in Maine, the Common and Red-throated Loon and the Horned, Pied-billed, and Red-necked Grebes. Maine Audubon, which initiated a long-term “Loon Count” effort in Maine more than 20 years ago, estimates there are approximately 4,000 breeding pairs of Common Loons in Maine; the number of adults appears to be increasing, yet their productivity remains stable. The Pied-billed Grebe is distributed statewide, but is not abundant anywhere, and population trend data are unavailable.

Distribution of Loons and Grebes in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
Common Loon	X							
Red-throated Loon		X						
Horned Grebe		X						
Pied-billed Grebe	X							
Red-necked Grebe		X						

Owls and Nightjars

MDIFW and Maine Audubon have been developing a volunteer-based monitoring program for owls in Maine. An initial test survey conducted in 2002 and 2003, involved 608 individual surveys on 146 unique routes. Results confirmed that Northern Saw-whet Owls, Barred Owls, and Great Horned Owls are distributed statewide. During that period, volunteers detected 5 Eastern Screech-owls, 11 Long-eared Owls, and 3 Short-eared Owls, but no Boreal Owls or Common Barn Owls. Barred owls were the most abundant, followed by Saw-whet Owls and Great Horned Owls (Hodgman 2004).

The Eastern Screech owl population is believed to be less than 100 pairs located primarily in York and Cumberland Counties, and the Long-eared Owl is speculated to occur statewide at very low densities. The Short-eared Owl is a rare breeder known to breed only in Aroostook and eastern Washington Counties; its population is believed to be declining. The Eastern Screech Owl and Short-eared Owl are species of Special Concern in Maine (Appendix 4).

The Common Nighthawk population is estimated to be 1,500 – 5,500 individuals distributed statewide (Rosenberg 2004). The Whip-poor-will population is estimated between 2,200 and 5,000 individuals (Rosenberg 2004) and believed to be experiencing a long-term decline.

Distribution of Owls and Nightjars in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
Barred Owl	X							
Boreal Owl								X
Eastern Screech-Owl			X					
Great-horned Owl	X							
Long-eared Owl	X							X
Northern Saw-whet Owl	X							
Short-eared Owl				X	X			X
Snowy Owl	X							X
Common Nighthawk	X							
Whip-poor-will			X		X	X	X	

Passerines – Forest

Approximately 27,639 square miles (90%) of Maine's landscape, is forested (Griffith and Alerich 1996), so most forest-related species will be affected by forest management practices. Thirteen of Maine's Passerines could be considered obligates of conifer-dominated forests, which is the most abundant forest type in Maine (>11,000 square miles)(Hodgman 1998). Of those 13 species, there are insufficient data for three species to estimate trends. Four species showed significant, long-term increases in their populations, whereas none have declined significantly (Sauer et al. 2005). Three species (Bicknell's Thrush, Blackpoll Warbler, and Pine Grosbeak) have insufficient data to estimate a trend reliably. Of the 41 Passerines found in deciduous or mixed forest habitats, over one-third of the trends are non-significant, however, 22 species showed significant long-term (1966-2004) trends; 15 species have increased and 7 have declined (Sauer et al. 2005). The Bicknell's Thrush and Olive-sided Flycatcher are species of Special Concern in Maine (Appendix 4).

Distribution of Forest Passerines in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
American Crow	X							
American Redstart	X							
Baltimore Oriole	X							
Bay-breasted Warbler				X	X	X	X	
Bicknell's Thrush				X		X		X
Black and White Warbler	X							

Distribution of Forest Passerines in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
Blackburnian Warbler	X							
Black-capped Chickadee	X							
Blackpoll Warbler		X		X		X		
Black-throated Blue Warbler	X							
Black-throated Green Warbler	X							
Blue Jay	X							
Blue-headed Vireo	X							
Boreal Chickadee				X	X	X		
Brown Creeper	X							
Canada Warbler	X							
Cape May Warbler				X	X	X		
Common Raven	X							
Dark-eyed Junco	X							
Eastern Phoebe	X							
Eastern Wood-Pewee	X							
Evening Grosbeak	X							
Golden-crowned Kinglet	X							
Gray Jay				X	X	X		
Great-crested Flycatcher	X							
Hermit Thrush	X							
Least Flycatcher	X							
Magnolia Warbler	X							
Northern Parula	X							
Olive-sided Flycatcher	X							X
Orange-crowned Warbler	X							
Ovenbird	X							
Philadelphia Vireo				X	X	X	X	
Pine Grosbeak (breeding)				X				
Pine Siskin	X							
Pine Warbler			X		X	X	X	
Purple Finch	X							
Red Crossbill	X							
Red-breasted Nuthatch	X							
Red-eyed Vireo	X							
Rose-breasted Grosbeak	X							
Ruby-crowned Kinglet		X		X	X	X	X	
Scarlet Tanager	X							
Swainson's Thrush				X	X	X		
Tennessee Warbler				X	X	X	X	
Tufted Titmouse		X	X				X	
Veery	X							
Warbling Vireo	X							
White-breasted Nuthatch	X							
White-winged Crossbill	X							
Winter Wren	X							
Wood Thrush	X							
Yellow-bellied Flycatcher				X	X	X	X	
Yellow-rumped Warbler	X							
Yellow-throated Vireo			X					

Passerines – Grassland

This habitat category encompasses a variety of nonforested upland habitats including alpine areas, blueberry barrens, as well as hayfields, pastures, and other agricultural lands. These distinctly different habitats support relatively unique assemblages of breeding birds. Alpine areas are rare in Maine, but a portion of the summit of Mt. Katahdin, Maine's tallest mountain, provides suitable habitat for Maine's only population of American Pipits. Blueberry barrens are common in eastern Maine and at various locations along the coast. Upland Sandpiper and Vesper Sparrow are attracted to these habitats, which offer quite sparse vegetative cover. In southern Maine, this habitat also supports Grasshopper Sparrow. In contrast, lands managed for hay production or pasture are denser structurally, and host a different group of species including, Bobolinks, Eastern Meadowlarks, and the more ubiquitous Savannah Sparrow.

Of the grassland Passerines, the breeding population of the American Pipit is listed as an Endangered species in Maine (McCullough et al. 2003). The Grasshopper Sparrow also is listed in Maine as Endangered (McCullough 2003). It occurs at four breeding locations in York and Cumberland Counties where 50-80 territorial males have been documented (Todd 1991). The Eastern Meadowlark and Vesper Sparrow are species of Special Concern in Maine (Appendix 4).

Habitat for grassland birds is significantly less now than during the period of widespread agriculture following colonial times. However, amounts today may be more than prior to European settlement (Hodgman 1988). The trend of declining habitat for grassland birds may continue as farms cease operation and abandoned fields revert to woodland (Hodgman 1998).

Of the other passerines that breed in Maine grasslands, Eastern Meadowlarks appear to be declining significantly, and Bobolinks and Savannah Sparrows appear to be stable (Sauer et al. 2005). Horned Larks and Vesper Sparrows need better assessments to determine their population status and trends (Hodgman 1998). Although the House Sparrow and European Starling are listed here, both use a wide variety of habitats, and both are non-indigenous species.

Distribution of Grassland Passerines in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
American Pipit (breeding)								X
Bobolink	X							
Eastern Meadowlark			X		X	X	X	
European Starling	X							
Grasshopper Sparrow			X					
Horned Lark (breeding)	X							
House Sparrow	X							
Lapland Longspur	X							X
Savannah Sparrow	X							
Snow Bunting	X							
Vesper Sparrow		X	X		X			

Passerines – Scrub-shrub

Over 40 Passerines use shrubland habitats, which have fluctuated in abundance over time with changes in land-use patterns (Hodgman 1998). Farmland abandonment, regenerating forests, utility right-of-ways, fire, roadsides, railroads, etc. all contribute to the availability of scrub-shrubland habitat. None of these species are federally or state listed, but the Loggerhead Shrike and Orchard Oriole are species of Special Concern in Maine (Appendix 4). Eighteen shrubland Passerines have significant, long-term ((1966-2004) population trends: 7 have increased, and 11 have declined (Sauer et al. 2005). Populations of 9 species appear to be stable, yet, for another ten species, trends for their breeding populations are unknown (Sauer et al. 2005). Five Shrubland passerines are found only in Maine during the non-breeding season. Christmas Bird Count data indicate one species is increasing (Bohemian Waxwing), three species appear stable, and one remains unknown (Sauer et al. 2005).

Distribution of Scrub-shrub Passerines in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
Alder Flycatcher	X							
American Goldfinch	X							
American Robin	X							
American Tree Sparrow	X							
Blue-gray Gnatcatcher			X					X
Blue-winged Warbler			X					X
Bohemian Waxwing	X							
Brown Thrasher			X		X	X	X	
Brown-headed Cowbird	X							
Carolina Wren			X					X
Cedar Waxwing	X							
Chestnut-sided Warbler	X							
Chipping Sparrow	X							
Common Grackle	X							
Common Redpoll	X							
Common Yellowthroat	X							
Dickcissel			X					X
Eastern Bluebird	X							
Eastern Kingbird	X							
Eastern Towhee		X	X		X		X	
Field Sparrow		X	X					
Fox Sparrow				X		X		
Golden-winged Warbler			X					X
Gray Catbird	X							
House Finch			X				X	
House Wren		X	X		X	X	X	
Indigo Bunting		X	X		X	X	X	
Lincoln's Sparrow				X	X	X		
Loggerhead Shrike (non-breeding)								X
Mourning Warbler	X							
Nashville Warbler	X							
Northern Cardinal		X	X				X	
Northern Mockingbird		X	X		X		X	
Northern Shrike	X							X

Distribution of Scrub-shrub Passerines in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
Orchard Oriole			X					X
Prairie Warbler			X				X	
Song Sparrow	X							
White-crowned Sparrow	X							
White-throated Sparrow	X							
Willow Flycatcher		X	X					
Wilson's Warbler				X	X	X	X	
Yellow Warbler	X							

Passerines – Swallows

There are six swallow species in Maine. None are federally or state listed, and none are on Maine's list of species of Special Concern (Appendix 4). Breeding Bird Survey data are too limited to determine trend estimates for Northern Rough-winged Swallows and Purple Martins (Sauer et al. 2005), but the Purple Martin population is believed to be declining and may warrant state listing (Hodgman 1998). Of the four swallows with sufficient data during the period 1966 – 2004, only the Cliff Swallow and Bank Swallow populations appeared to be stable, whereas Barn Swallows and Tree Swallows appeared to be declining significantly (Sauer et al. 2005). For decades, the Barn Swallow population has experienced steep, significant declines in Maine, and the rate of decline may be increasing (Sauer et al. 2005).

Distribution of Swallows in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
Bank Swallow	X							
Barn Swallow	X							
Cliff Swallow	X							
Northern Rough-winged Swallow			X		X	X	X	
Purple Martin		X	X					X
Tree Swallow	X							

Passerines – Wetlands

There are at least ten wetland-associated Passerines in Maine. Most of these species have not been adequately surveyed or studied. Of those for which adequate population trend data exist for Maine (two species), the Red-winged Blackbird is in significant, long-term decline, and the Swamp Sparrow has shown a significant increase since 1966 (Sauer et al. 2005). The Sedge Wren is listed in Maine as an Endangered species (McCullough et al. 2003). The size of this wren's population is unknown, but is believed to be fewer than 100 pairs, and evidence points to a declining population (McCullough et al. 2003). The Rusty Blackbird is a species of Special Concern in Maine (Appendix 4).

Distribution of Wetland Passerines in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
Louisiana Waterthrush			X					
Marsh Wren		X	X		X		X	
Nelson's Sharp-tailed Sparrow		X						
Northern Waterthrush	X							
Palm Warbler				X	X	X	X	X
Red-winged Blackbird	X							
Rusty Blackbird				X	X	X		X
Saltmarsh Sharp-tailed Sparrow		X	X					
Seaside Sparrow		X	X					
Sedge Wren		X	X				X	X
Swamp Sparrow	X							

Raptors

Of the raptors, three are state listed and one is federally listed. The Bald Eagle is currently listed as Threatened by both Maine and the USFWS (McCollough et al. 2003). The Golden Eagle and Peregrine falcon are only listed by Maine as Endangered species (McCollough et al. 2003). The Cooper's Hawk and Northern Goshawk are species of Special Concern in Maine (Appendix 4).

The Bald Eagle has experienced a remarkable recovery from a low of 21 nesting pairs and 4 young eaglets in the mid-1960s, to 346 pairs producing 298 young in 2004 (Todd 2004a, Todd 2004d). This eagle's initial decline was attributed primarily to environmental contaminants and human-induced disturbance and deaths. The recovery followed controls placed on contaminants, and intensive management and protection of eagle nesting sites by MDIFW and cooperating landowners.

The Golden Eagle has not been as fortunate. Residual environmental contaminants continue to play a significant role in preventing their recovery. Also, they are limited by the lack of open expanses of uplands to hunt their favored prey, marmots and lagomorphs; instead, they frequently consume wading birds such as bitterns and herons. The last breeding pair was documented in Maine during 1984 – 1997 in Piscataquis County. In 1999, a nesting attempt was documented in Somerset County (Todd 2000, Todd 2004b).

The Peregrine Falcon was extirpated from Maine and the entire eastern United States in the early 1960s, a victim of DDE, a persistent by-product of DDT. By 2003, 16 nesting pairs of Peregrine Falcons were documented in Maine as a result of the release of 144 young peregrines (produced in a captive-breeding program) at 8 different sites over several years (Todd 1991, Todd 2004c).

Distribution of Raptors in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
American Kestrel	X							
Bald Eagle	X							
Broad-winged Hawk	X							
Cooper's Hawk	X							X

Distribution of Raptors in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
Golden Eagle								X
Merlin	X							X
Northern Goshawk	X							
Northern Harrier	X							
Osprey	X							
Peregrine Falcon								X
Red-shouldered Hawk	X							X
Red-tailed Hawk	X							
Rough-legged Hawk				X	X			
Sharp-shinned Hawk	X							
Turkey Vulture		X	X				X	

Shorebirds

Eight species of shorebirds nest in Maine (American Oystercatcher, American Woodcock, Wilson's Snipe, Killdeer, Piping Plover, Spotted Sandpiper, Upland Sandpiper, and Willet). The American Oystercatcher and Willet recently expanded their breeding range to include southern and mid-coastal Maine and appear to be increasing. Wilson's Snipe, Killdeer, and Spotted Sandpiper are common in both coastal and inland habitats (Tudor 2000).

Twenty shorebird species commonly use staging areas in Maine and at least seven other shorebird species are occasional or infrequent visitors. The Maine Department of Inland Fisheries and Wildlife (MDIFW) retains a database of 500 coastal sites and the results of aerial and/or ground surveys conducted since 1981. However, available data are not of the quality to definitively describe population trends for these species. Nevertheless, indications are that numbers have been fluctuating. Of nine feeding and roosting sites surveyed once a week during August of 1980, 1991, and 1997, shorebird numbers declined dramatically in eight of them (Tudor 2000).

Piping Plovers are listed as an Endangered species in Maine because of their rarity and the threats they face during the nesting season (McCollough et al. 2003). They are also listed as a federally Threatened species by the U. S. Fish and Wildlife Service (USFWS). Piping Plovers have been monitored annually since 1981. The number of breeding pairs has fluctuated between seven pairs at four sites in 1983 to 61 pairs at 19 sites in 2003 (McCollough 2000, Bozenhard 2004b). The species persists and is increasing in Maine, primarily because of intense management and protection afforded the species by Maine Audubon, MDIFW, USFWS, and other committed conservation partners (Bozenhard 2004b).

The Upland Sandpiper is listed in Maine as a Threatened species (McCollough et al. 2003). The statewide population is unknown, but at least 148 breeding pairs occupied 59 grassland-barrens and airports in 1999 (Weik 2000). The species was more common in the 1800s when more of Maine's land area was being used for agriculture (McCollough et al. 2003).

The Purple Sandpiper is the only shorebird that is a regular winter resident in Maine (Tudor 2000). During the winter 2003-2004, surveys of the offshore islands and ledges along the coast of Maine (where these sandpipers feed) recorded 7,000 Purple Sandpipers (Mittelhauser et al. 2004, Tudor 2004)

Red-necked Phalaropes were common around Eastport and Lubec Maine prior to 1986, numbering in concentrations of 250,000 – 1,000,000+ birds. By 1989, they became virtually absent from the area (Chilelli 1997). Recent surveys have documented fewer than 1,000 individuals. The Red-necked Phalarope and Whimbrel are considered species of Special Concern in Maine (Appendix 4).

The American Woodcock is a popular game bird in Maine. Woodcock were probably most abundant in the mid to late 1800s, when agriculture was much more prevalent in Maine, but have declined since then, and are believed to be currently declining in the east (Weik 2001, Kelly and Rau 2005).

Distribution of Shorebirds in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
American Golden Plover		X						X
American Oystercatcher		X						
American Woodcock	X							
Baird's Sandpiper		X						X
Black-bellied Plover		X						
Buff-breasted Sandpiper		X						X
Dunlin		X						
Eskimo Curlew	Extirpated	X						
Greater Yellowlegs		X						
Hudsonian Godwit		X						
Killdeer	X							
Least Sandpiper		X						
Lesser Yellowlegs		X						
Long-billed Dowitcher		X						
Pectoral Sandpiper		X						
Piping Plover		X	X					
Purple Sandpiper		X						
Red Knot		X						
Red-necked Phalarope		X			X			
Red Phalarope		X						
Ruddy Turnstone		X						
Sanderling		X						
Semipalmated Plover		X						
Semipalmated Sandpiper		X						
Short-billed Dowitcher		X						
Solitary Sandpiper				X	X		X	X
Spotted Sandpiper	X							
Stilt Sandpiper		X						
Upland Sandpiper			X	X	X		X	X
Western Sandpiper		X						X
Whimbrel		X						
White-rumped Sandpiper		X						
Willet		X						
Wilson's Phalarope		X						X
Wilson's Snipe	X							

Terns

There are five species of terns that occur in Maine; three of them (Arctic, Common, and Roseate Terns) are discussed in the following Island-nesting Colonial Waterbirds section. The other two species (Least and Black Terns) are discussed here.

The Least Tern, the smallest of Maine's terns, was nearly extirpated in the late 1800s by the feather trade and egg collectors (McCollough 1993). This tern, which nests on Maine's sandy beaches, is now a state-listed Endangered species that is monitored and protected (along with the Piping Plover) by a partnership among MDIFW, USFWS, and Maine Audubon. In the past 13 years, the population has fluctuated between 39 pairs at 3 sites in 1982, to 156 pairs at 5 sites in 2003. These fluctuations have been attributed to predation, human disturbance, and natural events (Bozenhard 2004a).

The Black Tern nests in colonies on freshwater wetlands, primarily in central and eastern Maine. A study by Nokomis High School students over the past 13+ years has revealed that the Black Tern is Maine's rarest tern, which led to it being listed as a state Endangered species. Nokomis HS reported 98 nesting pairs at six sites in 2003; the ten-year average is 80 nesting pairs (deMaynadier 2004).

Distribution of Terns in Maine								
SPECIES	Most of State	Coastal	South	North	East	West	Central	Spotty
Black Tern					X		X	X
Least Tern		X	X					

Wading Birds

Many of the wading birds are covered under the Island-nesting Colonial Waterbird section. The three that are not are the American and Least Bitterns and the Green Heron. The American Bittern is secure in Maine, and data indicate the population is stable; but there is anecdotal evidence of a decline in Southern Maine and in Southern New England. The Least Bittern is listed as a species of Special Concern in Maine (Appendix 4). There are no population trend data, but there is anecdotal evidence of local declines. Green Herons appear to be doing well, though few data exist.

Distribution of Wading Birds in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
American Bittern	X							
Green Heron	X							
Least Bittern			X		X		X	X

Waterbirds (Island-nesting Colonial)

Maine has over 4,600 islands or ledges along its convoluted coast, and roughly 500 of them support island-nesting wading birds, seabirds, and common eiders. Many island-nesting bird

populations declined dramatically prior to the passage of the Migratory Bird Treaty Act in 1918 because of human use of the offshore islands for livestock grazing, logging, granite quarrying, and for fishing villages. Also many of the island species were harvested for food, eggs, and the millinery trade. Many of these species have recovered dramatically because of the protection afforded them by the Act and other federal and state regulations, but others have recovered slowly, and then only because of intense management. Some species continue to struggle in their recovery, because much of their island habitats have been rendered sub-optimal or unsuitable due to the presence of nesting, large gulls, which are predators of the eggs and young of other island-nesting birds (Tudor 2005).

Three of the five species of terns that nest in Maine are found primarily on coastal islands (Roseate, Common, and Arctic Terns), but a few dozen pairs of Common Terns also nest on islands in large, inland lakes in northern and coastal Maine (Tudor 2005). The Common Tern is a species of Special Concern in Maine (Appendix 4). The Roseate Tern is state and federally listed as an Endangered species, and the Arctic Tern is state listed as Threatened (McCullough et al. 2003). In 2004, these three terns nested on 24 coastal islands, but only ten of those islands supported colonies of more than 100 nesting pairs – down from 16 islands in 1931 (Tudor 2005). It was estimated that 170 pairs of Roseate Terns, 5,547 pairs of Common Terns, and 3,445 pairs of Arctic Terns nested in Maine in 2004 (Hall 2004). In general, substantial population gains have been realized for all three species over the past 20 years because of intensive management on a few coastal islands, but productivity is reported to be decreasing in the larger colonies due to disease and predation (Hall 2004, Tudor 2005).

The Atlantic Puffin and Razorbill are both listed as Threatened species in Maine (McCullough et al. 2003). Both populations were reduced substantially in the mid-1980s due to over-harvest for food and also feathers for the milliner's trade (Chilelli 1999a). Both species are somewhat rare in Maine, but have been slowly increasing since the mid-1970s, primarily because of intensive management efforts by a partnership among National Audubon Society, USFWS, Maine Audubon, and MDIFW. In 1977, there were 125 Atlantic Puffin pairs on one island, and 25 Razorbills on two islands in Maine; by 2004, there were 617 pairs of Atlantic Puffins on four islands, and an estimated 423 pairs of Razorbills nesting on six islands.

Black Guillemots nesting in Maine are at the southernmost edge of their range (Woodward and Hutchinson 1986), yet are the most abundant and widely distributed Alcid on the Maine coast. Nesting pairs of these birds increased in Maine between 1977 and 2003, from 2,668 pairs to 12,273 adults; however, census methods were different between these estimates (Allen 2004).

Black-crowned Night Heron populations remained stable between 1977 and 2003 at approximately 118 pairs in 7 colonies; they are a species of Special Concern in Maine (Appendix 4). During the same period, coastal-nesting Great Blue Herons declined from 903 to 644 pairs, and inland Great Blue Herons may have declined as well, but we have no population trend data; Little Blue Herons increased from four to eight pairs; and no Tri-colored Herons were found nesting in Maine in 2003 – there was only one nesting pair in 1977 (Allen 2004).

Cattle Egrets were not found nesting in Maine in either 1977 or 2003, but were found nesting between these dates; no Great Egrets were found in Maine in 1977, but by 2003, five pairs had been reported in one colony; and Snowy Egrets increased from 90 pairs to 213 pairs between 1977 and 2003 (Allen 2004). The Glossy Ibis population also increased during the same period from 75 pairs to 182 pairs in three colonies (Allen 2004).

The Common Eider almost was extirpated in the late 1800s, primarily from egg collecting and year-round shooting, but has recovered since then (Allen 2000). Between 1977 and 2003, nesting pairs of Common Eiders increased from 22,390 in 241 colonies, to 29,000 in 321 colonies (Allen 2004).

The Common Murre is listed as state Extirpated, but non-breeders have been reported on Matinicus Rock for the past several years, and an egg was found in 2005. The National Audubon Society is attempting to attract more of them to the island.

Double-crested Cormorants are considered common and doing well in Maine (Bird Group 1993); they increased from 15,333 pairs in 1977 to 19,680 pairs in 2003 (Allen 2004). Great Cormorants returned to Maine as a breeding species in 1983 (Bird Group 1993) and their population had increased to 150 pairs at six locations in 2004; they are listed as species of Special Concern in Maine (Appendix 4).

Great Black-backed Gulls increased between 1977 and 2003 from an estimated 9,847 pairs to 15,800 pairs, and Herring Gulls from 26,037 to 28,290 pairs. Laughing Gulls, a species of Special Concern in Maine (Appendix 4), increased from 231 to 3,200 pairs during the same period (Allen 2004), and are now becoming somewhat of a nuisance to tern restoration activities.

The Leach's Storm-petrel, a species of Special Concern in Maine (Appendix 4), declined significantly in the early 1990s because of predation by domestic dogs and cats, introduced wild predators, grazing, and other human-related disturbances. Whether the Storm-petrel population has recovered from this decline is unknown based on available data (Chilelli 1999b). In 1977, approximately 19,370 pairs of petrels nested in 17 colonies. By 2003, only 10,370 pairs in 33 colonies were reported (Allen 2004).

Distribution of Island-nesting Colonial Waterbirds in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
Arctic Tern		X						
Atlantic Puffin		X						
Black-crowned Night Heron		X	X	X	X			
Black Guillemot		X						
Cattle Egret		X	X					
Common Eider		X						
Common Murre	Extirpated	X						
Common Tern		X	X	X	X			
Double-crested Cormorant		X						
Glossy Ibis		X	X					
Great Black-backed Gull		X						
Great Blue Heron	X							
Great Cormorant (breeding)		X						
Great Egret		X	X					
Herring Gull		X						
Laughing Gull		X						
Leach's Storm-petrel		X						
Little Blue Heron		X	X					
Razorbill		X						
Roseate Tern		X						

Distribution of Island-nesting Colonial Waterbirds in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
Snowy Egret		X	X					
Tri-colored Heron		X	X					

Waterbirds (Non Island-nesting)

There are a number of waterbirds (most of which are pelagic) that are found along Maine's coast, but do not breed on the islands of Maine. Some nest at inland sites but the rest do not nest in Maine; they are attracted to Maine's abundant marine life and oddments from fishing boats.

Distribution of Non Island-nesting Waterbirds in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
Black-headed Gull		X						
Black-legged Kittiwake		X						
Bonaparte's Gull		X						
Dovekie		X						
Glaucous Gull		X						
Great Skua		X						
Greater Shearwater		X						
Iceland Gull		X						
Little Gull		X						
Manx Shearwater		X						
Northern Fulmer		X						
Northern Gannet		X						
Parasitic Jaegar		X						
Pomerine Jaegar		X						
Ringed-billed Gull	X							
Sooty Shearwater		X						
Thick-billed Murre		X						
Wilson's Storm-petrel		X						

Waterfowl

Eighteen species of waterfowl breed, or occur during breeding season, in Maine, and 20 species spend the winter in Maine's coastal waters (Weik 2005). Most breeding populations of ducks in Maine have been stable or have increased slightly since 1996. Black ducks have stabilized from previous declines, Common Goldeneyes have declined, and wintering numbers of Mallards and Canada Geese have increased (Weik 2005). Since 1985, brood counts of Black Ducks, Common Goldeneyes, Blue-winged Teal, and Common Mergansers have declined; broods of Wood Ducks, Hooded Mergansers, and Green-winged Teal have remained stable; and Mallard broods have slightly increased (Meehan 2002, Weik 2005). Note: the Common Eider is covered under the Island-nesting Colonial Waterbird section.

The Harlequin Duck is listed as a Threatened species in Maine (McCullough et al. 2003). During winter, Maine supports a significant portion of the eastern North American population of

Harlequin Ducks, which is found primarily around Isle au Haut and surrounding islands in Jericho and Penobscot Bays (Wickett 1999). Maine's wintering population of Harlequin Ducks is estimated at 1,150 – 1,300 birds.

The Barrow's Goldeneye is a species of Special Concern in Maine (Appendix 4).

Distribution of Waterfowl in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
American Black Duck	X							
American Widgeon								X
Atlantic Brant		X						
Barrow's Goldeneye		X					X	X
Black Scoter		X						
Blue-winged Teal	X							
Bufflehead		X						
Canada Goose	X							
Canada Goose (NAP) (non-breeding)	X							
Common Eider		X						
Common Goldeneye	X							
Common Merganser				X	X	X	X	
Gadwall			X	X				X
Greater Scaup (non-breeding)		X						
Green-winged Teal	X							
Harlequin Duck		X						X
Hooded Merganser	X							
King Eider		X						X
Lesser Scaup		X						
Long-tailed Duck		X						
Mallard	X							
Mute Swan		X	X					
Northern Pintail	X							
Northern Shoveler				X				
Red-breasted Merganser (breeding)		X		X		X		
Ring-necked Duck	X							
Ruddy Duck	X							
Snow Goose	X							
Surf Scoter		X						
White-winged Scoter		X						
Wood Duck	X							

Woodpeckers

The American Three-toed Woodpecker is a species of Special Concern in Maine (Appendix 4). There are no population trend data for this species, but anecdotal evidence suggests a decline, possibly in response to prey availability.

The Northern Flicker population is considered to be stable in Maine, but data indicate a significant decline in the Northern New England Region (Sauer et al. 2005). The Yellow-bellied

Sapsucker population is estimated to be 243,000 – 417,000 individuals and increasing in Maine (Rosenberg 2004).

Distribution of Woodpeckers in Maine								
Species	Most of State	Coastal	South	North	East	West	Central	Spotty
American Three-toed Woodpecker				X	X	X		
Black-backed Woodpecker				X	X	X	X	
Downy Woodpecker	X							
Hairy Woodpecker	X							
Northern Flicker	X							
Pileated Woodpecker	X							
Red-bellied Woodpecker		X	X				X	X
Red-headed Woodpecker		X	X					X
Yellow-bellied Sapsucker	X							

3.1.2 REPTILES AND AMPHIBIANS

General Overview

By eastern U.S. standards, Maine is a large and climatically diverse state. Thus, while reptiles and amphibians (herptiles or herpetofauna) are generally richest at southern latitudes, Maine's relatively moderate southern and coastal climate permits a large number of species, especially reptiles, to reach their northeastern range limit in the state. Only one species, the mink frog (*Rana septentrionalis*), reaches the southern edge of its range in Maine (and northern New Hampshire and Vermont). There are 38 species and subspecies of herpetofauna known from Maine (Table 3), including 9 salamanders, 9 frogs and toads, 8 turtles, and 12 snakes (one is state listed as Extirpated). All of Maine's herptiles are native except the mudpuppy (*Necturus maculosus*).

Much of what we know about amphibians and reptiles has been the result of a 1986-1990 cooperative atlas effort by MDIFW, Maine Audubon Society, and the University of Maine. During a 4-year period, over 250 volunteers contributed roughly 1,200 records that were compiled and published in book form, *The Amphibians and Reptiles of Maine* (Hunter et al. 1992). Subsequently, additional volunteers updated the records and a second edition was published (Hunter et al. 1999). Also in 1997, MDIFW and Maine Audubon launched Maine's Calling Amphibian Survey as part of a nationwide survey organized by the U.S. Geological Survey. Sixty-one randomly selected survey routes were established statewide and are now monitored 3 times each spring. Over time, these surveys will hopefully provide population trend data for most of Maine's 9 frogs and toads (deMaynadier 2004).

Finally, the Department has expended considerable effort toward survey and research of Blanding's and spotted turtles in southern Maine. For the past 15 years MDIFW, with support from USFWS and U. S. Environmental Protection Agency (EPA), has conducted surveys of new wetland locales for both species to improve our understanding of their distribution and status. Furthermore, in the early 1990s, and again currently, MDIFW has cooperated with the University of Maine to sponsor intensive radio-telemetry research on the movements and habitat preferences of both species in an effort to inform and improve regulatory (environmental review

under MESA) and non-regulatory (habitat protection and outreach) protection initiatives (deMaynadier 2004).

Table 3. Herpetofauna of Maine – Species List.	
Species	Scientific Name¹
Amphibians	
Salamanders	
Blue-spotted Salamander	<i>Ambystoma laterale x jeffersonianum</i>
Common Mudpuppy	<i>Necturus maculosus</i>
Four-toed Salamander	<i>Hemidactylium scutatum</i>
Northern Dusky Salamander	<i>Desmognathus fuscus</i>
Northern Redback Salamander	<i>Plethedon cinereus</i>
Northern Spring Salamander	<i>Gyrinophilus p. porphyriticus</i>
Northern Two-lined Salamander	<i>Eurycea bislineata</i>
Red-spotted Newt	<i>Notophthalmus v. viridescens</i>
Spotted Salamander	<i>Ambystoma maculatum</i>
Frogs	
American Toad	<i>Bufo americanus</i>
Bullfrog	<i>Rana catesbeiana</i>
Gray Treefrog	<i>Hyla versicolor</i>
Green Frog	<i>Rana clamitans melanota</i>
Mink Frog	<i>Rana septentrionalis</i>
Northern Leopard Frog	<i>Rana pipiens</i>
Northern Spring Peeper	<i>Pseudacris c. crucifer</i>
Pickerel Frog	<i>Rana palustris</i>
Wood Frog	<i>Rana sylvatica</i>
REPTILES	
Turtles	
Blanding's Turtle	<i>Emys blandingii</i>
Common Musk Turtle	<i>Sternotherus odoratus</i>
Common Snapping Turtle	<i>Chelydra s. serpentina</i>
Eastern Box Turtle	<i>Terrapene c. carolina</i>
Eastern Painted Turtle	<i>Chrysemys p. picta</i>
Midland Painted Turtle	<i>Chrysemys picta marginata</i>
Spotted Turtle	<i>Clemmys guttata</i>
Wood Turtle	<i>Glyptemys insculpta</i>
Snakes	
Eastern Garter Snake	<i>Thamnophis s. sirtalis</i>
Eastern Milk Snake	<i>Lampropeltis t. triangulum</i>
Eastern Ribbon Snake	<i>Thamnophis s. sauritus</i>
Maritime Garter Snake	<i>Thamnophis sirtalis pallidulus</i>
Northern Black Racer	<i>Coluber c. constrictor</i>
Northern Brown Snake	<i>Storeria d. dekayi</i>
Northern Redbelly Snake	<i>Storeria o. occipitamaculata</i>
Northern Ribbon Snake	<i>Thamnophis sauritus septentrionalis</i>
Northern Ringneck Snake	<i>Diadophis punctatus edwardsii</i>
Northern Water Snake	<i>Nerodia s. sipedon</i>
Smooth Green Snake	<i>Liochlorophis vernalis</i>

Table 3. Herpetofauna of Maine – Species List.	
Species	Scientific Name ¹
Timber Rattlesnake	<i>Crotalus horridus</i>
¹ The taxonomy of this list follows Collins and Taggart 2002 with the exception of Blanding's Turtle, which uses the genus <i>Emys</i> as assigned by NatureServe 2005.	

Listed Reptiles and Amphibians

A relatively large proportion of Maine's reptile fauna (50%) is listed as state Endangered (three species), Threatened (one species), Special Concern (five species/subspecies), or Extirpated (one species). This is in part due to the biogeography described above, whereby the area of greatest reptile diversity, southern Maine, is also the area of the state experiencing greatest threats from human population growth and development, including habitat loss, road traffic, predation, pollution, and illegal collecting.

The Blanding's turtle (*Emys blandingii*), box turtle (*Terrapene carolina*), and black racer (*Coluber constrictor*) are listed as Endangered by Maine's Endangered Species Act, and the spotted turtle (*Clemmys guttata*) is listed as Threatened. The wood turtle (*Glyptemys insculpta*), stinkpot (*Sternotherus odoratus*), ribbon snake (*Thamnophis sauritus*), brown snake (*Storeria dekayi*), northern leopard frog (*Rana pipiens*), northern spring salamander (*Gyrinophilus porphyriticus*), and four-toed salamander (*Hemidactylium scutatum*) are all species of Special Concern in Maine (Appendix 4).

Amphibians – Frogs and Toads

None of the frogs or toads in Maine is listed as Endangered or Threatened, but the northern leopard frog (*Rana pipiens*) is a species of Special Concern (Appendix 4). The other species are considered to be relatively secure throughout their range in Maine.

Distribution of Frogs in Maine									
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
American Toad	<i>Bufo americanus</i>	X							
Bullfrog	<i>Rana catesbeiana</i>	X							
Gray Treefrog	<i>Hyla versicolor</i>		X	X		X		X	
Green Frog	<i>Rana clamitans melanota</i>	X							
Mink Frog	<i>Rana septentrionalis</i>				X	X	X	X	
Northern Leopard Frog	<i>Rana pipiens</i>	X							
Northern Spring Peeper	<i>Pseudacris c. crucifer</i>	X							
Pickerel Frog	<i>Rana palustris</i>	X							
Wood Frog	<i>Rana sylvatica</i>	X							

Amphibians – Salamanders

None of Maine's salamanders are state or federally listed, but the four-toed salamander (*Hemidactylium scutatum*) and northern spring salamander (*Gyrinophilus porphyriticus*) are both species of Special Concern because of limited records and specialized habitat preferences (Appendix 4). Other salamanders are considered secure in Maine, with the possible exception of the Blue-spotted salamander (*Ambystoma laterale*), a species considered vulnerable to habitat degradation due to its spotty distribution and use of poorly protected pocket swamps and vernal pools for breeding.

Distribution of Salamanders in Maine									
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
Common Mudpuppy	<i>Necturus maculosus</i>							X	X
Blue-spotted Salamander	<i>Ambystoma laterale x jeffersonianum</i>	X							X
Spotted Salamander	<i>Ambystoma maculatum</i>	X							
Red-spotted Newt	<i>Notophthalmus v. viridescens</i>	X							
Northern Dusky Salamander	<i>Desmognathus fuscus</i>	X							
Northern Two-lined Salamander	<i>Eurycea bislineata</i>	X							
Northern Spring Salamander	<i>Gyrinophilus p. porphyriticus</i>			X			X	X	
Four-toed Salamander	<i>Hemidactylium scutatum</i>		X	X		X		X	
Northern Redback Salamander	<i>Plethedon cinereus</i>	X							

Reptiles – Snakes

Of the 12 species and subspecies of snakes that have been documented in Maine, only the eastern garter snake (*Thamnophis s. sirtalis*) is distributed statewide.

The northern black racer (*Coluber c. constrictor*) is the only snake on Maine's Endangered species list, where it is listed because of rarity, range declines, and inadequate protection from take (Todd 2000, McCollough et al. 2003). At the northern edge of its distribution in Maine, the black racer has lost ground throughout much of its statewide range because of habitat loss from development and agricultural succession. Only about 40 (modern) occurrences have been documented in Maine.

The timber rattlesnake (*Crotalus horridus*) is considered Extirpated in Maine, but unconfirmed encounters are reported regularly, and, with further survey effort, it is hoped that a viable den site might still be identified in the remote hills of southwestern Maine.

The northern brown snake (*Storeia d. dekayi*) and ribbon snake (*Thamnophis sauritus*; both subspecies) are species of Special Concern (Appendix 4), with the ribbon snake considered

highly vulnerable to habitat loss and degradation due to its preference for small, clean pocket swamps and marshes in southern Maine.

Distribution of Snakes in Maine									
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
Eastern Garter Snake	<i>Thamnophis s. sirtalis</i>	X							
Eastern Milk Snake	<i>Lampropeltis t. triangulum</i>		X	X				X	
Eastern Ribbon Snake	<i>Thamnophis s. sauritus</i>			X					
Maritime Garter Snake	<i>Thamnophis sirtalis pallidulus</i>				X	X			X
Northern Black Racer	<i>Coluber c. constrictor</i>			X					
Northern Brown Snake	<i>Storeria d. dekayi</i>			X				X	
Northern Redbelly Snake	<i>Storeria o. occipitamaculata</i>		X	X		X	X	X	
Northern Ribbon Snake	<i>Thamnophis sauritus septentrionalis</i>			X					
Northern Ringneck Snake	<i>Diadophis punctatus edwardsii</i>		X	X		X	X	X	
Northern Water Snake	<i>Nerodia s. sipedon</i>		X	X				X	
Smooth Green Snake	<i>Liochlorophis vernalis</i>		X	X				X	
Timber Rattlesnake	<i>Crotalus horridus</i>	Extirpated		X			X		

Reptiles – Turtles

Of the eight species of turtles documented in Maine, three are state listed, and two are species of Special Concern (McCollough et al. 2003, Appendix 4). Only one species, the wood turtle (*Glyptemys insculpta*) is distributed statewide. Like the snakes, turtles are ectothermic and thus reach their greatest richness in southern and coastal Maine because of the marked climatic difference between southern and northern regions (Hunter et al. 1999).

The Blanding's turtle (*Emys blandingii*) was initially listed as Threatened in Maine in 1986 because of regional rarity; localized, small populations; and threats to their existing habitat; but was subsequently raised to Endangered status in 1997 (Ritter 1985, McCollough 1991a, McCollough et al. 2003). The total Blanding's turtle population is believed to be between 1,000 – 2,000 individuals confined to six focus areas in York and Cumberland Counties.

The eastern box turtle (*Terrapene c. carolina*) was listed in 1986 as an Endangered species in Maine because of its critically small population, northern range edge, and threats to its habitat (McCollough et al. 2003). It is probably the most rare and least understood reptile in Maine; sightings accrue at one or fewer per year, and no viable populations have yet been discovered in the state (Todd 2000, McCollough et al. 2003). Only 20 documented occurrences exist over a

20-year period, mainly across southern and central Maine, and concerns exist that some reports may be released pets originating from outside of the state.

The spotted turtle (*Clemmys guttata*), like the Blanding's turtle, was initially listed as Threatened in Maine in 1986 because of regional rarity; localized, small populations; and threats to their existing habitat (Ritter 1985, McCollough 1991b). Surveys in the 1990s identified approximately 100 new sites for the species, so the listing status remained Threatened in 1997 (McCollough et al. 2003). The current population is estimated to be 5,000-6,000 individuals located in seven or eight focus areas in York and Cumberland Counties.

Another turtle of conservation concern in Maine is the wood turtle (*Glyptemys insculpta*). This species is primarily a northeastern species that is declining throughout its range, and Maine likely hosts some of the largest and most viable remaining populations in the U.S. (deMaynadier 2004). Maine is tracking approximately 160 occurrences, with observations from every county. The population size is unknown, but it is believed to be declining from habitat degradation, recreational dam releases, road mortality, and pet collecting.

Distribution of Turtles in Maine									
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
Blanding's Turtle	<i>Emys blandingii</i>			X					X
Common Musk Turtle	<i>Sternotherus odoratus</i>		X	X					X
Common Snapping Turtle	<i>Chelydra s. serpentina</i>		X	X		X			
Eastern Box Turtle	<i>Terrapene c. carolina</i>			X					X
Eastern Painted Turtle	<i>Chrysemys p. picta</i>		X	X		X		X	
Midland Painted Turtle	<i>Chrysemys picta marginata</i>								X
Spotted Turtle	<i>Clemmys guttata</i>			X				X	X
Wood Turtle	<i>Glyptemys insculpta</i>	X							

3.1.3 INVERTEBRATES

General Overview

As is true globally, invertebrates, both in terms of richness and biomass, dominate Maine's biota. Based on available data, Gawler et al. (1996) conservatively estimated that Maine hosts a total of 15,000 non-marine invertebrate species, or nearly 98% of the state's animal species diversity. Like most other states, Maine's legal definition of "wildlife" ("any species of the animal kingdom") includes invertebrates, thus challenging agencies and cooperators with a tremendous breadth and volume of species to protect and manage (McCollough 1997).

The best-studied phyla in Maine, as in most states, are the Mollusca (e.g. snails and mussels; ~200 species) and Arthropoda (e.g. insects, crustaceans, spiders; ~7,950 species) – two groups that include all of the non-marine invertebrate species compiled for this report (Table 4). Within these phyla, the state of knowledge on distribution, status, and life history is strongest for just

three orders: the Unionoida (freshwater mussels), Odonata (damselflies and dragonflies), and Lepidoptera (butterflies and moths), or what some have referred to as the “charismatic microfauna” of the invertebrate world. Accordingly, a large proportion (67%) of the priority invertebrate species assessed for this report are represented by members of these same groups (freshwater mussels – 5 species; Odonates – 32 species; and Lepidoptera – 63 species). Other invertebrate taxa also considered because of partial knowledge (mainly from NatureServe 2005) include Gastropoda (snails; 15 species), Plecoptera (stoneflies; 7 species), Trichoptera (caddisflies; 3 species), Ephemeroptera (mayflies; 22 species), and Coleoptera (beetles; 2 species).

Table 4. Invertebrates of Maine – Species List¹					
<i>Better-known Orders of Two Major Invertebrate Phyla (terrestrial and freshwater only)</i>					
Phylum	Class	Subclass or Order (Family)	Families	Species	Source(s) - Notes
Mollusca	Gastropoda	Subclass Pulmonata Lung-breathing snails, slugs	23+	127+	Gleich and Gilbert 1976; Hotopp and Smith 1994; Martin 1999; Martin 2000; NatureServe 2005; Brian Coles (pers. communication)
				Bigmouth Pondsnaail <i>Stagnicola mighelsi</i>	
				Deep-Throat Vertigo <i>Vertigo nylanderi</i>	
				Great Lakes Physa <i>Physella magnalacustris</i>	
				Lamellate Supercoil <i>Paravitrea lamellidens</i>	
				Mystery Vertigo <i>Vertigo paradoxa</i>	
				Pleistocene Catinella <i>Catinella exile</i>	
				Six-whorl Vertigo <i>Vertigo morsei</i>	
				A Snail <i>Euconulus alderi</i>	
				A Snail <i>Vertigo sp. nov.</i>	
				Delicate Vertigo <i>Vertigo bollesiana</i>	
				Eastern Flat-whorl <i>Planogyra asteriscus</i>	
				Obese Pondsnaail <i>Stagnicola oronoensis</i>	
				Olive Vertigo <i>Vertigo perryi</i>	
			Subclass Prosobranchia Gill-breathing snails, etc.	8+	36+
	Bivalvia	Unionoida Freshwater Mussels	2	10	Clarke 1981; Nedeau et al. 2000; NatureServe 2005
Tidewater Mucket <i>Leptodea ochracea</i>					
Yellow Lampmussel <i>Lampsilis cariosa</i>					

Table 4. Invertebrates of Maine – Species List ¹						
Better-known Orders of Two Major Invertebrate Phyla (terrestrial and freshwater only)						
Phylum	Class	Subclass or Order (Family)	Families	Species	Source(s) - Notes	
Arthropoda (continued)	Bivalvia (continued)	Unionoida Freshwater Mussels (continued)		Brook Floater <i>Alasmidonta varicosa</i>		
				Creeper <i>Strophitus undulatus</i>		
				Triangle Floater <i>Alasmidonta undulata</i>		
		Veneroida Fingernail and Pea Clams	1	26+	Clarke 1981, Martin 1998	
	Crustacea	Decapoda Crayfish	1	7	Reid 1970; Reid 1977; Reid and Scott 1995	
	Arachnida	Araneae Spiders	32	500+	Jennings 1995	
	Insecta	Plecoptera Stoneflies	19+	148+	Mingo 1983; NatureServe 2005	
				A Stonefly <i>Neoperla mainensis</i>		
				A Stonefly <i>Allocapnia illinoensis</i>		
				A Stonefly <i>Alloperla ideii</i>		
A Stonefly <i>Alloperla voinae</i>						
A Stonefly <i>Ostocerca prolongata</i>						
Gaspe Sallfly <i>Utaperla gaspesiana</i>						
Spiny Salmonfly <i>Pteronarcys comstocki</i>						
Trichoptera Caddisflies (excluding Hydroptilidae)				14	184+	Blickle and Morse 1966 (predict total ME fauna is >300 species)
Trichoptera (Hydroptilidae) Caddisflies [micro]				1	50+	Blickle 1964, Huryn and Harris 2000; NatureServe 2005, Jay Cordeiro (pers. communication)
	A Caddisfly <i>Hydroptila tomah</i>					
	A Caddisfly <i>Ochrotrichia denningi</i>					
	A Caddisfly <i>Oxyethira rossi</i>					
Hymenoptera Bees, Wasps, Ants	52	855+	Dearborn et al. 1983; Stubbs et al. 1995			
Diptera Flies (excluding Tipulidae and allies, Culicidae, Simuliidae, and Tabanidae)	41	226	Dearborn et al. 1982; Dick Dearborn (pers. communication)			

Table 4. Invertebrates of Maine – Species List ¹						
Better-known Orders of Two Major Invertebrate Phyla (terrestrial and freshwater only)						
Phylum	Class	Subclass or Order (Family)	Families	Species	Source(s) - Notes	
Arthropoda (continued)	Insecta (continued)	Diptera (Tabanidae) Horseflies and Deerflies	1	76	Pechuman and Dearborn 1996	
		Diptera (Tipulidae and allies) Craneflies	5	285	Alexander 1962	
		Diptera (Simuliidae) Blackflies	1	43	Bauer and Granett 1979	
		Diptera (Culicidae) Mosquitoes	1	45	Foss 2004	
		Ephemeroptera Mayflies	13	162	Burian and Gibbs 1991; NatureServe 2005; Steve Burian (pers. Comm.)	
				Roaring Brook Mayfly <i>Epeorus frisoni</i>		
				Tomah Mayfly <i>Siphonisca aerodromia</i>		
				A Mayfly <i>Baetisca rubescens</i>		
				A Mayfly <i>Nixe horrida</i>		
				A Mayfly <i>Nixe rusticalis</i>		
				A Mayfly <i>Plauditus veteris</i>		
				A Mayfly <i>Procloeon mendax</i>		
				A Mayfly <i>Procloeon ozburni</i>		
				A Mayfly <i>Procloeon simplex</i>		
				A Mayfly <i>Siphonurus demaryi</i>		
		A Mayfly <i>Siphonurus securifer</i>				
		A Mayfly <i>Ameletus browni</i>				
		A Mayfly <i>Ameletus tertius</i>				
		A Mayfly <i>Baetisca beneri</i>				
		A Mayfly <i>Baetisca carolina</i>				
		A Mayfly <i>Centroptillum semirufum</i>				
		A Mayfly <i>Cloeon dipterum</i>				
		A Mayfly <i>Metretopus borealis</i>				
		A Mayfly <i>Procloeon intermediale</i>				

Table 4. Invertebrates of Maine – Species List ¹					
Better-known Orders of Two Major Invertebrate Phyla (terrestrial and freshwater only)					
Phylum	Class	Subclass or Order (Family)	Families	Species	Source(s) - Notes
Arthropoda (continued)	Insecta (continued)	Ephemeroptera Mayflies (continued)		A Mayfly <i>Rhithrogena brunneotincta</i>	
				A Mayfly <i>Rhithrogena uhari</i>	
				A Mayfly <i>Siphonurus barbaroides</i>	
		Lepidoptera Butterflies & Skippers	5	114	Brower 1974; Webster and deMaynadier 2004; NatureServe 2005
				Clayton's Copper <i>Lycaena dorcas claytoni</i>	
				Hessel's Hairstreak <i>Callophrys hesseli</i>	
				Katahdin Arctic <i>Oeneis polixenes katahdin</i>	
				Cobweb Skipper <i>Hesperia metea</i>	
				Coral Hairstreak <i>Satyrium titus</i>	
				Crowberry Blue <i>Plebejus idas empetri</i>	
				Early Hairstreak <i>Eroria laeta</i>	
				Edwards' Hairstreak <i>Satyrium edwardsii</i>	
				Frigga Fritillary <i>Boloria frigga</i>	
				Greenish Blue <i>Plebejus saepiolus amica</i>	
				Juniper Hairstreak <i>Callophrys gryneus</i>	
				Leonard's Skipper <i>Hesperia leonardus</i>	
				Purple Lesser Fritillary <i>Boloria chariclea grandis</i>	
				Sleepy Duskywing <i>Erynnis brizo</i>	
				Spicebush Swallowtail <i>Papilio troilus</i>	
				Appalachian Brown <i>Satyrodes appalachia</i>	
				Bog Elfin <i>Callophrys lanoraieensis</i>	
				Bog Fritillary <i>Boloria eunomia dawsoni</i>	
				Delaware Skipper <i>Anatrytone logan</i>	
				Frosted Elfin <i>Callophrys irus</i>	
				Karner Blue <i>Plebejus melissa samuelis</i>	

Table 4. Invertebrates of Maine – Species List ¹					
Better-known Orders of Two Major Invertebrate Phyla (terrestrial and freshwater only)					
Phylum	Class	Subclass or Order (Family)	Families	Species	Source(s) - Notes
Arthropoda (continued)	Insecta (continued)	Lepidoptera Butterflies & Skippers (continued)		Little Glassywing <i>Pompeius verna</i>	
				Persius Duskywing <i>Erynnis p. persius</i>	
				Regal Fritillary <i>Speyeria idalia</i>	
				Satyr Comma <i>Polygonia satyrus</i>	
				Tawny Crescent <i>Physiodes batesii</i>	
				Western Pine Elfin <i>Callophrys eryphon</i>	
				Western Tailed Blue <i>Cupido amyntula maritima</i>	
		Lepidoptera Moths [macro]	17	1152	Brower 1974; NatureServe 2005
				Twilight Moth <i>Lycia rachelae</i>	
				A Moth <i>Cucullia speyeri</i>	
				A Moth <i>Nepytia pellucidaria</i>	
				A Noctuid Moth <i>Chaetagnaea cerata</i>	
				Barrens Itame <i>Itame sp. 1</i>	
				Graceful Clearwing <i>Hemaris gracilis</i>	
				Pine Barrens Zale <i>Zale sp. 1nr. lunifera</i>	
				Pine Barrens Zanclognatha <i>Zanclognatha martha</i>	
				Pine Devil <i>Citheronia sepulcralis</i>	
				Pine Pinion <i>Lithophane l. lepida</i>	
				Pink Sallow <i>Psectraglaea carnosia</i>	
				Precious Underwing <i>Catocala p. pretiosa</i>	
				The Buckmoth <i>Hemileuca m. maia</i>	
				A Moth <i>Lepipolys perscripta</i>	
				A Moth <i>Syngrapha altera</i>	
				A Moth <i>Syngrapha cryptica</i>	
				A Moth <i>Syngrapha selecta</i>	

Table 4. Invertebrates of Maine – Species List ¹						
Better-known Orders of Two Major Invertebrate Phyla (terrestrial and freshwater only)						
Phylum	Class	Subclass or Order (Family)	Families	Species	Source(s) - Notes	
Arthropoda (continued)	Insecta (continued)	Lepidoptera Moths [macro] (continued)		A Noctuid Moth <i>Apamea mixta</i>		
				A Noctuid Moth <i>Chortodes defecta</i>		
				A Notodontid Moth <i>Furcula modesta</i>		
				A Seed Borer <i>Rhodoecia aurantiago</i>		
				Acadian Swordgrass Moth <i>Xylena thoracica</i>		
				Annointed Sallow Moth <i>Pyreffera ceromatica</i>		
				Barrens Metarranthis Moth <i>Metarranthis apiciaria</i>		
				Broad Sallow <i>Xylotype capax</i>		
				Chestnut Clearwing <i>Synanthedon castaneae</i>		
				Culvers Root Borer <i>Papaipema sciata</i>		
				Huckleberry Sphinx <i>Paonias astylus</i>		
				Oblique Zale <i>Zale obliqua</i>		
				Red-winged Sallow <i>Xystocephalus rufago</i>		
				Similar Underwing <i>Catocala similis</i>		
				Southern Pine Sphinx <i>Lapara coniferarum</i>		
				Spartina Borer Moth <i>Spartiniphaga inops</i>		
				Thaxter's Pinion <i>Lithophane thaxteri</i>		
			Trembling Sallow <i>Chaetagnathia tremula</i>			
			Lepidoptera Moths [micro]	41	1720	Brower 1983, 1984; D. Dearborn (pers. communication)
			Odonata Dragonflies and Damselflies	8	158	Brunelle 1999; Brunelle and deMaynadier in prep.; NatureServe 2005
					Rapids Clubtail <i>Gomphus quadricolor</i>	
					Ringed Boghaunter <i>Williamsonia lintneri</i>	
					Spatterdock Darner <i>Rhionaeschna mutata</i>	
					Arrow Clubtail <i>Stylurus spiniceps</i>	
					Arrowhead Spiketail <i>Cordulegaster obliqua</i>	

Table 4. Invertebrates of Maine – Species List¹					
<i>Better-known Orders of Two Major Invertebrate Phyla (terrestrial and freshwater only)</i>					
Phylum	Class	Subclass or Order (Family)	Families	Species	Source(s) - Notes
Arthropoda (continued)	Insecta (continued)	Odonata Dragonflies and Damselflies (continued)		Big Bluet <i>Enallagma durum</i>	
				Boreal Snaketail <i>Ophiogomphus colubrinus</i>	
				Canada Whiteface <i>Leucorrhinia patricia</i>	
				Citrine Forktail <i>Ischnura hastata</i>	
				Cobra Clubtail <i>Gomphus vastus</i>	
				Dusky Dancer <i>Argia translata</i>	
				Pygmy Snaketail <i>Ophiogomphus howei</i>	
				Quebec Emerald <i>Somatochlora brevicincta</i>	
				Rambur's Forktail <i>Ischnura ramburii</i>	
				Scarlet Bluet <i>Enallagma pictum</i>	
				Sedge Darner <i>Aeshna juncea</i>	
				Southern Pygmy Clubtail <i>Lanthus vernalis</i>	
				Swamp Darner <i>Epiaeschna heros</i>	
				Tule Bluet <i>Enallagma carunculatum</i>	
				Black Saddlebags <i>Tramea lacerata</i>	
				Broadtailed Shadowdragon <i>Neurocordulia michaeli</i>	
				Brook Snaketail <i>Ophiogomphus aspersus</i>	
				Carolina Saddlebags <i>Tramea carolina</i>	
				Comet Darner <i>Anax longipes</i>	
				Common Sanddragon <i>Progomphus obscurus</i>	
				Ebony Boghaunter <i>Williamsonia fletcheri</i>	
				Extra-striped Snaketail <i>Ophiogomphus anomalus</i>	
				Little Bluet <i>Enallagma minusculum</i>	
				Needhams Skimmer <i>Libellula needhami</i>	
				New England Bluet <i>Enallagma laterale</i>	

Table 4. Invertebrates of Maine – Species List¹						
<i>Better-known Orders of Two Major Invertebrate Phyla (terrestrial and freshwater only)</i>						
Phylum	Class	Subclass or Order (Family)	Families	Species	Source(s) - Notes	
Arthropoda (continued)	Insecta (continued)	Odonata Dragonflies and Damselflies (continued)		Spine-crowned Clubtail <i>Gomphus abbreviatus</i> Variegated Meadowhawk <i>Sympetrum corruptum</i>		
		Coleoptera Beetles (excluding Carabidae and Cicindelidae)	76	1054+	Dearborn and Donahue 1993; NatureServe 2005; D. Dearborn (pers. communication) estimate is orders of magnitude low	
		Coleoptera (Carabidae, including Cicindelidae) Ground Beetles	1	404	White Mountain Tiger Beetle <i>Cicindela ancocisconensis</i>	Dearborn et al. in prep.
		Orthoptera Grasshoppers, etc.	6	74		Morse 1921
		Heteroptera (Miridae) Plant Bugs	1	17		Wheeler 1991
		TOTALS			360+	7,423+

¹ Modified from Gawler et al. 1996.

Listed Invertebrates

While assessing current conservation status of better-known invertebrate groups is challenging, documenting historical presence and extirpation status is even more difficult. To the best of our knowledge, at least nine invertebrate species are likely extirpated from Maine including one beetle and eight butterflies and moths.

Maine's current Endangered and Threatened Species List includes the Roaring Brook mayfly (*Epeorus frisoni*), ringed boghaunter (*Williamsonia lintneri*), Clayton's copper (*Lycaena dorcas claytoni*), Edwards' hairstreak (*Satyrium edwardsii*), Hessel's hairstreak (*Callophrys hesseli*) and Katahdin arctic (*Oeneis polixenes katahdin*) as Endangered species, and the tidewater mucket (*Leptodea ochracea*), yellow lampmussel (*Lampsilis cariosa*), Tomah mayfly (*Siphonisca aerodromia*), pygmy snaketail (*Ophiogomphus howei*), twilight moth (*Lycia rachelae*), and pine barrens zanclognatha (*Zanclognatha martha*) as Threatened species. The American burying beetle (*Nicrophorus americanus*) and Karner blue butterfly (*Plebejus melissa samuelis*) are federally listed as Endangered.

The fact that an invertebrate species is not on Maine's list of Endangered and Threatened species, or on the list of species of Special Concern, does not mean the species does not merit conservation concern. Notably, Maine was the last state in New England to officially list invertebrates in 1997. At that time, only 12 species were added as Endangered or Threatened and 38 as Special Concern (Appendix 4), an infinitesimal percentage of the state's estimated species richness (0.4%) as compared to much greater representation by some vertebrate groups (birds – 18%; mammals – 28%, and reptiles – 47%; McCollough 1997). Invertebrate

representation on Maine's Endangered, Threatened, and Special Concern lists will grow as further knowledge is obtained on the population status, distribution, and trends of various at-risk taxa.

Mollusca (Phylum), Gastropoda (Class) Snails (Pulmonata and Prosobranchia)

According to Martin (1999, 2000), there are 16 families and 76 species of terrestrial snails, and seven families and 45 species of freshwater snails, reported from Maine. At least five species are introduced, and the taxonomic status of several others is questionable. While a number of individual investigations of Maine's snails exist (Gleich and Gilbert 1976, Hotopp and Smith 1994, Martin 1999, Martin 2000, Brian Coles (pers. Communication)), systematic surveys to determine their diversity, distribution, and status have never been conducted.

These taxa have been recently reviewed by NatureServe (2005), which tracks 135 species of terrestrial and aquatic snails for Maine. Fourteen of these are ranked as globally rare, including one G1 (*Amnicola decisus*) and several G2 species. An additional species (*Vertigo sp. Nov.*) not yet tracked by NatureServe is new to science and known from only one site in Maine (B. Coles, pers. Communication). These fifteen species are the only snails specifically addressed in this report. One of the fifteen, *the mystery vertigo (Vertigo paradoxa)*, was also formerly considered a candidate for federal listing. Consequently, it was designated a species of Special Concern in the state (Appendix 4), and is the only snail that has been assigned a state status. Because statewide surveys and status assessments have not been done, the snails as a group have never been reviewed as part of the state listing process.

Distribution of Rare Snails in Maine										
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty	Unknown
A Snail	<i>Euconulus alderi</i>			X	X	X		X		
A Snail	<i>Vertigo sp. Nov.</i>			X					X	
A Spire Snail	<i>Amnicola decisus</i>									X
Bigmouth Pondsnaill	<i>Stagnicola mighelsi</i>									X
Deep-Throat Vertigo	<i>Vertigo nylanderi</i>				X			X	X	
Delicate Vertigo	<i>Vertigo bollesiana</i>				X	X	X	X		
Eastern Flat-whorl	<i>Planogyra asteriscus</i>				X	X		X		
Great Lakes Physa	<i>Physella magnalacustris</i>									X
Lamellate Supercoi	<i>Paravitrea lamellidens</i>									X
Mystery Vertigo	<i>Vertigo paradoxa</i>				X	X				

Distribution of Rare Snails in Maine										
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty	Unknown
New England Silt Snail	<i>Floridobia winkleyi</i>									X
Obese Pondsnaill	<i>Stagnicola oronoensis</i>									X
Olive Vertigo	<i>Vertigo perryi</i>		X	X				X		
Pleistocene Catinella	<i>Catinella exile</i>				X					
Six-whorl Vertigo	<i>Vertigo morsei</i>				X				X	

Mollusca (Phylum), Bivalvia (Class) Freshwater Mussels (Unionoida)

Freshwater mussels are one of the few invertebrate taxa that have been a focus of intensive statewide survey efforts in Maine. From 1992 to 1997, MDIFW biologists systematically surveyed over 1,600 sites on the state's rivers, streams, lakes and ponds to document the distribution and status of mussels in Maine. Ten species are documented to occur here, all of which are native (Nedeau et al. 2000). Mussel diversity is lowest in the northern, western, and southwestern parts of the state, with just three or four species typically present. The greatest diversity is found in the Kennebec and Penobscot River drainages, where all ten species are often present in the same stretch of river (Nedeau et al. 2000).

While surveys determined that most of Maine's freshwater mussel species are relatively secure, several species were subsequently assigned a state listing status. The tidewater mucket (*Leptodea ochracea*) was documented at only 45 of the 1,600+ survey sites, and the yellow lampmussel (*Lampsilis cariosa*) was found at only 65 sites. Both were extremely restricted in distribution and confined to the St. George, Penobscot, and lower Kennebec River watersheds. Often occurring together, they also were typically found in very low numbers and densities. Consequently, both species were listed as Threatened in Maine in 1997. The yellow lampmussel is also a former candidate for federal listing. Both species are known to be declining throughout much of their range, and are listed by many states throughout the region.

Three species of mussels are designated as Special Concern in Maine: the brook floater (*Alasmidonta varicosa*), triangle floater (*Alasmidonta undulata*), and creeper (*Strophitus undulatus*) (Appendix 4).

The brook floater, which was documented at approximately 85 survey sites, is the rarest of the three. It is found mostly in Downeast, central, and Midcoast Maine, with just one population in southern Maine (Nedeau et al. 2000). Rarely have more than a few individuals been observed at any one site. This species is also a former candidate for federal listing, and is state-listed throughout much of its range.

The life history, distribution, and status of Maine's freshwater mussel species are documented in the MDIFW publication, *The Freshwater Mussels of Maine* (Nedeau et al. 2000). This book

summarizes the statewide survey efforts and contains individual species accounts for all ten native species, as well as for a few additional species that could potentially be found here. To date, the invasive zebra mussel (*Dreissena polymorpha*) has not been reported in Maine. None of Maine's mussel species are federally listed.

Distribution of Rare Freshwater Mussels in Maine										
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty	Unknown
Alewife Floater	<i>Anodonta implicata</i>		X	X		X		X		
Brook Floater	<i>Alasmidonta varicosa</i>		X			X	X	X		
Creeper	<i>Strophitus undulatus</i>			X		X	X	X		
Eastern Elliptio	<i>Elliptio complanata</i>	X								
Eastern Floater	<i>Pyganodon cataracta</i>	X								
Eastern Lampmussel	<i>Lampsilis radiata radiata</i>					X		X		
Eastern Pearlshell	<i>Margaritifera margaritifera</i>		X	X		X	X	X		
Tidewater Mucket	<i>Leptodea ochracea</i>		X					X		
Triangle Floater	<i>Alasmidonta undulata</i>	X								
Yellow Lampmussel	<i>Lampsilis cariosa</i>		X			X		X		

Fingernail and pea clams (Veneroida)

Very little is known about this group of species in Maine. What is known has been compiled largely from historical collections (Martin 1998). At least 26 species have been documented to occur in the state. This taxon has not been comprehensively assessed by NatureServe (2005), and there are currently no records for Maine species tracked in their database. Because statewide surveys and status assessments have not been done for freshwater clams, they have never been reviewed as part of the state listing process. No species are specifically addressed in this report.

Arthropoda (Phylum), Crustacea (Class) Crayfish (Decapoda)

There are seven species of crayfish documented to occur in Maine, of which three are introduced (Reid 1970, Reid 1977, Reid and Scott 1995). Maine's four native species are *Cambarus b. bartonii*, *Orconectes limosus*, *Orconectes virilis*, and *Orconectes immunis* (Reid and Scott 1996). Known distributions for these species have been determined primarily by past surveys of MDIFW fisheries biologists and University of Maine researchers. However, statewide surveys have never been done and these data are incomplete. NatureServe (2005) has not ranked any of Maine's crayfish species as globally rare. Because comprehensive surveys and

status assessments are lacking, this taxon has never been reviewed as part of the state listing process. No species are specifically addressed in this report.

Distribution of Rare Crayfish in Maine										
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty	Unknown
Appalachian Brook Crayfish	<i>Cambarus bartonii bartonii</i>				X			X		
Spinycheek Crayfish	<i>Orconectes limosus</i>		X	X				X		
Virile Crayfish	<i>Orconectes virilis</i>			X	X		X	X		
Calico crayfish	<i>Orconectes immunis</i>			X			X			
A Crayfish	<i>Orconectes obscurus</i>	Introduced		X			X			
Rusty Crayfish	<i>Orconectes rusticus</i>	Introduced						X		
White River Crayfish	<i>Procambarus acutus acutus</i>	Introduced	X							

Arthropoda (Phylum), Arachnida (Class) Spiders (Araneae)

Maine has a diverse spider fauna with 500-600 species present, and likely many new species yet to be discovered (Jennings 1995). While a number of studies have focused on the spider fauna of specific locations, knowledge of the overall species richness, distribution and status of Maine's spiders is extremely limited (Jennings 1996). With the exception of cave obligates, Arachnids have not been comprehensively assessed by NatureServe (2005), and there are no Maine species currently tracked in their database. Because statewide surveys and status assessments have not been done for spiders in Maine, this taxon has never been reviewed as part of the state listing process. No species are specifically addressed in this report.

Arthropoda (Phylum), Insecta (Class) Stoneflies (Plecoptera)

At least 94 species of stoneflies, representing all nine North American families, are reported from Maine (Mingo 1983; S. Burian, pers. Communication). Typically inhabiting cold, fast-flowing streams and rivers, stoneflies are most likely a more diverse fauna in Maine than what is currently documented. Past surveys have focused largely on specific watersheds or limited geographical areas, resulting in an incomplete understanding of species richness and distribution for most of the state. Only 20 Maine Plecoptera species are currently tracked by NatureServe (2005), which has not completed a comprehensive review of this taxon. Of these, seven are ranked as globally rare and are the only species addressed in this report. Because statewide surveys and status assessments have not been done for stoneflies in Maine, this group has never been reviewed as part of the state listing process.

Distribution of Rare Stoneflies in Maine										
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty	Unknown
A Stonefly	<i>Allocapnia illinoensis</i>									X
A Stonefly	<i>Alloperla ideii</i>									X
A Stonefly	<i>Alloperla voinae</i>									X
A Stonefly	<i>Neoperla mainensis</i>									X
A Stonefly	<i>Ostocerca prolongata</i>									X
Gaspé Sallfly	<i>Utaperla gaspesiana</i>									X
Spiny Salmonfly	<i>Pteronarcys comstocki</i>									X

Caddisflies (Trichoptera, including Hydroptilidae)

The species richness of caddisflies is higher in Maine than that of most regions of North America (Huryn 2000). Blickle and Morse (1966) documented over 14 families and 184 species, but more recent collections suggest a total that exceeds 300 species (Huryn and Harris 2000). At least an additional 50 species of the lesser-known “micro caddisflies” in the family Hydroptilidae are also reported from the state (Blickle and Morse 1966, Huryn and Harris 2000). NatureServe (2005) currently tracks 278 species (including Hydroptilidae) for Maine, but most of these have not yet been assigned a global rank. Three species, however, are currently ranked as globally rare, including *Hydroptila tomah*, which is a newly discovered species known only from Tomah Stream (Washington County, Maine). These are the only caddisflies specifically addressed in this report. Like so many other invertebrate taxa, caddisflies have never been a focus of statewide survey efforts or status assessments. Very little is known of their distribution or abundance, and they have never been reviewed as part of the state listing process.

Distribution of Rare Caddisflies in Maine										
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty	Unknown
A Caddisfly	<i>Hydroptila tomah</i>					X				
A Caddisfly	<i>Ochrotrichia denningi</i>									X
A Caddisfly	<i>Oxyethira rossi</i>									X

Bees, Wasps, and Ants (Hymenoptera)

At least 52 families and 855 species of bees, wasps, and ants have been reported from Maine (Dearborn et al. 1983; Stubbs et al. 1995). These numbers are most certainly conservative estimates, as surveys specifically designed to assess species diversity for the Hymenoptera have never been conducted (Stubbs et al. 1995). NatureServe (2005) has not comprehensively

assessed this taxon, and there are no records for Maine currently tracked in their database. Because statewide surveys and status assessments have not been done, the Hymenoptera have never been reviewed as part of the state listing process. No species are specifically addressed in this report.

Flies (Diptera)

There are at least 45 species of mosquitoes (Culicidae), 43 species of blackflies (Simuliidae), 76 species of horseflies and deerflies (Tabanidae), 285 species of crane flies (Tipulidae and allies), and 226 species of other Diptera reported from Maine (Alexander 1962, Bauer and Granett 1979, Dearborn et al. 1982, Pechuman and Dearborn 1996, Foss 2004, D. Dearborn, pers. Communication). The total number of species actually present undoubtedly far exceeds these figures, as this is a large and diverse order of insects that has not been comprehensively surveyed. This taxon has not been thoroughly assessed by NatureServe (2005), which currently tracks only one species (unranked) for Maine. Because of this extremely limited understanding of species diversity, distribution, and status, the Diptera have never been reviewed as part of the state listing process. No species are specifically addressed in this report.

Mayflies (Ephemeroptera)

At least 13 families and 162 species of mayflies are reported from Maine (Burian and Gibbs 1991, S. Burian, pers. Communication). While this group is relatively well studied compared to many other insects, comprehensive surveys have never been conducted in Maine, and information on mayfly diversity and status is incomplete. There was sufficient documentation for some species, however, to include them in the review for state listing in 1996. As a result, two species were added to the Maine Endangered Species List in 1997.

The Roaring Brook mayfly (*Epeorus frisoni*) is listed as Endangered (McCollough et al. 2003). First discovered in 1939 on Mt. Katahdin, in Baxter State Park, Maine, it was never documented again until 2003, when MDIFW and Park staff rediscovered the species in two tributaries of Roaring Brook at the base of Mt. Katahdin. These, and one site in Vermont, are the only known occurrences of this mayfly in the world (Swartz 2004, S. Burian, pers. Communication).

The Tomah mayfly (*Siphonisca aerodromia*) is listed as Threatened (McCollough et al. 2003). First discovered in northern New York in the early 1900s, and subsequently extirpated following dam construction, the species was rediscovered in Tomah Stream (Washington County, Maine) in 1978. Despite extensive surveys since then, it has been documented at only 16 additional sites in Maine and one in New York (Gibbs et al. 2001, McCollough et al. 2003, Swartz 2004b, B. Swartz, pers. Communication).

An additional four species are currently designated as Special Concern in Maine (Appendix 4), but more extensive surveys may ultimately reveal them to be more widely distributed than first believed. Several other Maine mayflies, however, have recently risen to a higher level of concern because of their limited number of occurrences range wide. NatureServe (2005) currently tracks only 35 species for Maine, of which 16 are ranked as globally rare. In total, 22 mayfly species are specifically addressed in this report.

Distribution of Rare Mayflies in Maine										
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty	Unknown
A Mayfly	<i>Ameletus browni</i>							X		
A Mayfly	<i>Ameletus tertius</i>				X		X			
A Mayfly	<i>Baetisca berneri</i>						X			
A Mayfly	<i>Baetisca carolina</i>				X					
A Mayfly	<i>Baetisca rubescens</i>				X		X			
A Mayfly	<i>Centroptillum semirufum</i>						X			
A Mayfly	<i>Cloeon dipterum</i>		X					X		
Roaring Brook Mayfly	<i>Epeorus frisoni</i>							X	X	
A Mayfly	<i>Metretopus borealis</i>		X		X	X	X			
A Mayfly	<i>Nixe horrida</i>				X	X				
A Mayfly	<i>Nixe rusticalis</i>							X		
A Mayfly	<i>Plauditus veteris</i>						X			
A Mayfly	<i>Procloeon intermediale</i>						X			
A Mayfly	<i>Procloeon mendax</i>		X							
A Mayfly	<i>Procloeon ozburni</i>					X		X		
A Mayfly	<i>Procloeon simplex</i>		X			X		X		
A Mayfly	<i>Rhithrogena brunneotincta</i>		X		X	X	X	X		
A Mayfly	<i>Rhithrogena uhari</i>					X				
Tomah Mayfly	<i>Siphonisca aerodromia</i>				X	X	X	X	X	
A Mayfly	<i>Siphonurus barbaroides</i>							X		
A Mayfly	<i>Siphonurus demaryi</i>						X	X		
A Mayfly	<i>Siphonurus securifer</i>						X			

Butterflies and Skippers (Lepidoptera)

Attractive and conspicuous, butterflies and skippers are among the few insect groups that have benefited from considerable attention by early Maine naturalists (collections exist from as far back as 1870) and recent volunteer, citizen scientists. Additionally, because several butterflies are currently listed as state Endangered (four species) or Special Concern (six species) (Appendix 4), MDIFW has been actively gathering data on the group as part of recent ecoregional survey efforts (deMaynadier 1997, deMaynadier and Hodgman 1998, Givens et al. 2002, Herrmann et al. 2003). Finally, MDIFW was awarded a grant to assemble a baseline atlas

and conservation assessment of Maine's butterflies by drawing from published literature and examining specimen records from museum and amateur collections throughout the Northeast. This effort, recently completed in 2005, has compiled approximately 9,000 records, thus serving as the most comprehensive assessment of the distribution and status of butterflies and skippers in Maine (Webster and deMaynadier 2005)

There are 114 known species of butterflies and skippers, representing five families, in Maine. Of special note is the relatively high proportion (13%) of Maine butterflies and skippers that are listed as Extirpated (five species) or state listed at some level (ten species), a result consistent with global trends elsewhere for the group (Stein et al. 2000, Thomas et al. 2004). Unfortunately, additional butterfly listings are imminent as a result of the state's recent assessment efforts (Webster and deMaynadier 2005). We specifically address 26 species in this report, of which four are listed in Maine as Endangered: Clayton's copper (*Lycaena dorcas claytoni*), Edward's hairstreak (*Satyrrium edwardsii*), Hessel's hairstreak (*Callophrys hesseli*), and Katahdin arctic (*Oeneis polixenes katahdin*). A fifth species, the federally Endangered Karner blue (*Plebejus melissa samuelis*), was historically reported from one site in southern Maine, but both the butterfly and its host plant (wild lupine) have been extirpated. An additional eight butterfly species are listed as Special Concern in Maine (Appendix 4).

The Clayton's copper, a state Endangered species and species of federal Special Concern, is found only in Maine and just over the border in New Brunswick, Canada (McCullough et al. 2003). In Maine, it is extant at 10-11 sites mostly concentrated in a 10mi² area of eastern Penobscot County (Swartz et al. 2001, Swartz 2002), where the species is closely tied to uncommon habitats supporting its host plant, shrubby cinquefoil (*Pentaphylloides floribunda*).

There are only five modern records of the state Endangered Edwards' hairstreak in Maine, where it is at the northern edge of its range. All of Maine's records are from pitch pine-scrub oak barrens, a rare and declining habitat in Maine (McCullough et al. 2003).

The Hessel's hairstreak is rare throughout most of its range, and has been documented at only four sites in Maine. It is listed as an Endangered species, and reaches the northern edge of its range in southern Maine, where it is closely tied to its host plant, the Atlantic white cedar (*Chamaecyparis thyoides*) (McCullough et al. 2003).

The state Endangered Katahdin arctic is an isolated subspecies found nowhere else in the world except on Mount Katahdin in Baxter State Park, Maine. While its habitat is protected, the species remains potentially vulnerable to illegal collecting and global warming (McCullough et al. 2003).

Distribution of Rare Butterflies in Maine										
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty	Unknown
Appalachian Brown	<i>Satyrodes appalachia</i>			X			X	X	X	
Bog Elfin	<i>Callophrys lanoraieensis</i>	X							X	
Bog Fritillary	<i>Boloria eunomia dawsoni</i>				X		X	X	X	
Clayton's	<i>Lycaena</i>				X	X			X	

Distribution of Rare Butterflies in Maine										
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty	Unknown
Copper	<i>dorcas claytoni</i>									
Cobweb Skipper	<i>Hesperia metea</i>	Historical		X			X			
Coral Hairstreak	<i>Satyrium titus</i>		X	X			X			
Crowberry Blue	<i>Plebejus idas empetri</i>		X			X			X	
Delaware Skipper	<i>Anatrytone logan</i>		X	X				X		
Early Hairstreak	<i>Eroria laeta</i>	Historical					X			
Edwards' Hairstreak	<i>Satyrium edwardsii</i>			X			X		X	
Frigga Fritillary	<i>Boloria frigga</i>				X		X		X	
Frosted Elfin	<i>Callophrys irus</i>	Extirpated		X			X		X	
Greenish Blue	<i>Plebejus saepiolus amica</i>	Historical	X			X	X	X		
Hessel's Hairstreak	<i>Callophrys hesseli</i>			X					X	
Juniper Hairstreak	<i>Callophrys gryneus</i>			X			X		X	
Karner Blue	<i>Plebejus melissa samuelis</i>	Extirpated		X			X			
Katahdin Arctic	<i>Oeneis polixenes katahdin</i>							X		
Little Glassywing	<i>Pompeius verna</i>				X				X	
Persius Duskywing	<i>Erynnis p. persius</i>	Extirpated								
Purple Lesser Fritillary	<i>Boloria chariclea grandis</i>				X				X	
Regal Fritillary	<i>Speyeria idalia</i>	Extirpated	X	X			X			
Satyr Comma	<i>Polygonia satyrus</i>	Historical		X		X				
Spicebush Swallowtail	<i>Papilio troilus</i>		X	X				X	X	
Tawny Crescent	<i>Physiodes batesii</i>	Extirpated					X			
Western Pine Elfin	<i>Callophrys eryphon</i>				X		X	X	X	
Western Tailed Blue	<i>Cupido amyntula maritima</i>				X					

Moths (Lepidoptera, including micro Lepidoptera)

There are at least 17 families and 1,152 species of moths (macro) reported from Maine (Brower 1974). An additional 41 families and 1,720 species of “micro-moths” are also documented to occur in the state (Brower 1983, 1984, D. Dearborn, pers. Communication). Much of this information is based on historic collections and the focused efforts of a few individual researchers and collectors. Consequently, survey efforts have generally been restricted to limited geographical areas, specific habitat types, or favorite collecting sites. Comprehensive statewide surveys and species assessments have never been done for this taxon. The micro Lepidoptera are especially lesser known.

Despite the incomplete understanding of distribution and status for many of Maine's moths, we had enough knowledge of some species to include them in the 1996 state listing process review. Particularly, those species known to be obligates of rare community types (e.g. pitch pine/scrub oak barrens) or to be affected by range wide declines were carefully assessed. As a result, the pine barrens zanclognatha (*Zanclognatha martha*) and twilight moth (*Lycia rachelae*) were state listed as Threatened in 1997. Both species are found only in pitch pine/scrub oak barrens, a rare and declining habitat type in Maine that is restricted to just a few locations in York and Oxford Counties (McCollough et al. 2003). Of the seven primary barrens remaining in the state, only three are known to support these rare moths.

An additional 17 species of moths are currently designated as Special Concern in Maine (Appendix 4), and several more are known or believed extirpated. NatureServe (2005) currently tracks only 108 moth species for Maine, of which 18 are ranked as globally rare. In total, 35 species are specifically addressed in this report.

Distribution of Rare Moths (Macro) in Maine										
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty	Unknown
Twilight Moth	<i>Lycia rachelae</i>			X						
A Moth	<i>Cucullia speyeri</i>	Historical		X						
A Moth	<i>Nepytia pellucidaria</i>			X						
A Noctuid Moth	<i>Chaetagnathia cerata</i>	Historical		X						
Barrens Itame	<i>Itame sp. 1</i>			X						
Graceful Clearwing	<i>Hemaris gracilis</i>	Historical								X
Pine Barrens Zale	<i>Zale sp. 1nr. lunifera</i>			X						
Pine Barrens Zanclognatha	<i>Zanclognatha martha</i>			X						
Pine Devil	<i>Citheronia sepulcralis</i>	Historical		X						
Pine Pinion	<i>Lithophane l. lepida</i>			X				X		
Pink Sallow	<i>Psectraglaea carnosus</i>			X						

Distribution of Rare Moths (Macro) in Maine										
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty	Unknown
Precious Underwing	<i>Catocala p. pretiosa</i>	Proposed Extirpated		X						
The Buckmoth	<i>Hemileuca m. maia</i>			X						
A Moth	<i>Lepipolys perscripta</i>		X	X	X?					
A Moth	<i>Syngrapha altera</i>									X
A Moth	<i>Syngrapha cryptica</i>									X
A Moth	<i>Syngrapha selecta</i>									X
A Noctuid Moth	<i>Apamea mixta</i>									X
A Noctuid Moth	<i>Chortodes defecta</i>				X					
A Notodontid Moth	<i>Furcula modesta</i>									X
A Seed Borer	<i>Rhodoecia aurantiago</i>	Historical		X						
Acadian Swordgrass Moth	<i>Xylena thoracica</i>			X	X		X			
Annoited Sallow Moth	<i>Pyreffera ceromatica</i>	Proposed Extirpated								X
Barrens Metarranthis Moth	<i>Metarranthis apiciaria</i>		X	X		X	X?			
Broad Sallow	<i>Xylotype capax</i>			X						
Chestnut Clearwing	<i>Synanthedon castaneae</i>	Extirpated								X
Culvers Root Borer	<i>Papaipema sciata</i>				X					
Huckleberry Sphinx	<i>Paonias astylus</i>			X	X	X				
Oblique Zale	<i>Zale obliqua</i>			X						
Red-winged Sallow	<i>Xystopeplus rufago</i>			X						
Similar Underwing	<i>Catocala similes</i>			X						
Southern Pine Sphinx	<i>Lapara coniferarum</i>		X	X		X?	X			
Spartina Borer Moth	<i>Spartiniphaga inops</i>		X			X?				
Thaxter's Pinion	<i>Lithophane thaxteri</i>		X	X		X		X		
Trembling Sallow	<i>Chaetagnalea tremula</i>		X	X						

Dragonflies and Damselflies (Odonata)

Like butterflies, dragonflies and damselflies are a relatively colorful and conspicuous group that has attracted significant attention from both scientists and the general public. While many Odonates are considered sensitive to freshwater habitat degradation and are experiencing declines nationwide, baseline information for the group has been lacking in Maine, until recently. Much of what is currently known about Maine's Odonates has been the result of on-going ecoregional surveys and the recently completed Maine Dragonfly and Damselfly Survey (MDDS) (<http://mdds.umf.maine.edu/>). MDDS is a multi-year, citizen scientist atlasing initiative designed to improve our knowledge of the distribution and habitat relationships of damselflies and dragonflies statewide. In addition to engaging nearly 250 of Maine's non-game wildlife constituents and raising public awareness of invertebrate conservation, the MDDS has helped the Department more accurately assess the status of rare, Threatened, and Endangered Odonates.

As a result of the MDDS, there are now 158 species of dragonflies and damselflies known from Maine, of which 32 are covered by this report. One of these species is state listed as Endangered, another as Threatened, and 12 are listed as species of Special Concern (Appendix 4). Since its inception, the MDDS has documented one new U.S. species record (deMaynadier and Hudson 2005), eight new state species records, hundreds of new rare, Threatened and Endangered species records, and 13,794 new odonate records overall (deMaynadier and Brunelle 2004). Based on this new survey knowledge, many of the 32 species covered by this report will likely be state listed as Endangered, Threatened, or Special Concern in the future.

The ringed boghaunter (*Williamsonia lintneri*), a globally rare species of acidic pocket swamps and fens, is state listed as Endangered (McCollough et al. 2003). Southern Maine is believed to be at the northern edge of its range, where only 13 sites have been documented. Habitat loss and degradation are of particular concern for the boghaunter, because the small wetlands used for breeding are not adequately protected by current state wetland regulations and they are located in a rapidly developing area of the state.

The pygmy snaketail (*Ophiogomphus howei*), Maine's other listed species (Threatened), has a patchy distribution throughout its range in eastern North America, where it occupies clean, swift, moderate to large rivers with sand or gravel bottoms in forested watersheds (McCollough et al. 2003). It has been documented in eight rivers statewide, and Maine may host some of the best remaining populations for the species throughout its range.

Distribution of Rare Dragonflies and Damselflies in Maine										
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty	Unknown
Rapids Clubtail	<i>Gomphus quadricolor</i>			X			X		X	
Ringed Boghaunter	<i>Williamsonia lintneri</i>			X					X	
Spatterdock Darner	<i>Rhionaeschna mutata</i>			X			X		X	
Arrow Clubtail	<i>Stylurus spiniceps</i>						X	X	X	

Distribution of Rare Dragonflies and Damselflies in Maine										
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty	Unknown
Arrowhead Spiketail	<i>Cordulegaster obliqua</i>		X	X				X	X	
Big Bluet	<i>Enallagma durum</i>		X			X			X	
Boreal Snaketail	<i>Ophiogomphus colubrinus</i>				X		X			
Canada Whiteface	<i>Leucorrhinia patricia</i>						X		X	
Citrine Forktail	<i>Ischnura hastata</i>		X	X					X	
Cobra Clubtail	<i>Gomphus vastus</i>			X			X	X		
Dusky Dancer	<i>Argia translata</i>			X				X		
Pygmy Snaketail	<i>Ophiogomphus howei</i>			X	X	X		X	X	
Quebec Emerald	<i>Somatochlora brevicincta</i>							X		
Rambur's Forktail	<i>Ischnura ramburii</i>		X					X		
Scarlet Bluet	<i>Enallagma pictum</i>			X						
Sedge Darner	<i>Aeshna juncea</i>						X		X	
Southern Pygmy Clubtail	<i>Lanthus vernalis</i>			X	X					
Swamp Darner	<i>Epiaeschna heros</i>		X					X		
Tule Bluet	<i>Enallagma carunculatum</i>		X		X	X			X	
Black Saddlebags	<i>Tramea lacerata</i>			X					X	
Broadtailed Shadowdragon	<i>Neurocordulia michaeli</i>	X								
Brook Snaketail	<i>Ophiogomphus aspersus</i>	X							X	
Carolina Saddlebags	<i>Tramea carolina</i>		X						X	
Comet Darner	<i>Anax longipes</i>					X	X		X	
Common Sanddragon	<i>Progomphus obscurus</i>			X			X			
Ebony Boghaunter	<i>Williamsonia fletcheri</i>	X								
Extra-striped Snaketail	<i>Ophiogomphus anomalus</i>	X							X	
Little Bluet	<i>Enallagma minusculum</i>			X		X	X			
Needham's Skimmer	<i>Libellula needhami</i>			X						
New England Bluet	<i>Enallagma laterale</i>		X	X		X			X	
Spine-crowned	<i>Gomphus</i>		X		X					

Distribution of Rare Dragonflies and Damselflies in Maine										
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty	Unknown
Clubtail	<i>abbreviatus</i>									
Variiegated Meadowhawk	<i>Sympetrum corruptum</i>					X		X		

Beetles (Coleoptera, including Carabidae and Cicindelidae)

There are at least 93 families and 2,180 species of beetles reported from Maine (Dearborn and Donahue 1993, Bourque et al. 2005). These estimates are most likely orders of magnitude lower than actual species richness (D. Dearborn, pers. Communication). Generally recognized as the largest order of insects, the Coleoptera have not been systematically surveyed in Maine. As a result, information about their diversity, distribution, and status is very limited. This taxon has not been comprehensively assessed by NatureServe (2005), which tracks only 14 species for Maine. Two of these are ranked as globally rare, and they are the only beetles specifically addressed in this report. One is the American burying beetle (*Nicrophorus americanus*), which is federally listed as Endangered. This species is known historically from a few locations in southwestern and central Maine (McCollough et al. 2003), but it is state listed as Extirpated. Because statewide surveys and status assessments have not been done, the Coleoptera have never been reviewed as part of the state listing process.

Distribution of Rare Beetles in Maine										
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty	Unknown
American Burying Beetle	<i>Nicrophorus americanus</i>	Extirpated		X				X		
White Mountain Tiger Beetle	<i>Cicindela ancocisconensis</i>									X

Grasshoppers, etc. (Orthoptera)

Historically, six families and 74 species of grasshoppers and related insects were reported from Maine (Morse 1921). More recent data on this taxon is unavailable, and very little is known about species diversity, distribution, and status. NatureServe (2005) has not comprehensively assessed this group, and there are no records for Maine species currently tracked in their database. Because statewide surveys and status assessments have not been done, the Orthoptera have never been reviewed as part of the state listing process. No species are specifically addressed in this report.

Plant Bugs (Heteroptera – Miridae)

This taxon is poorly known in Maine. At least 17 species that specifically target scrub oak (*Quercus ilicifolia*) have been documented by Wheeler (1991), but comprehensive information

on this group does not exist for Maine. NatureServe (2005) has assessed very few plant bugs, and there are no records for Maine species currently tracked in their database. Because statewide surveys and status assessments have not been done, the Heteroptera have never been reviewed as part of the state listing process. No species are specifically addressed in this report.

3.1.4 INLAND FISH

General Overview

With more than 5,600 lakes and ponds and 31,000 miles of rivers and streams, Maine has an abundance of freshwater habitat supporting a fishery of some kind. A total of 56 freshwater fish species occur in Maine of which 17 are not indigenous to the state (Table 5). The list of species does not include fishes that are primarily estuarine, such as the Mummichog (*Fundulus heteroclitus*), nor does it include diadromous fishes such as the searun alewife (*Alosa pseudoharengus*). However, the list does include the American eel (*Anguilla rostrata*), a catadromous species.

Of the 56 species, 20 are classified as sportfish species regularly pursued by anglers. The brook trout (*Salvelinus fontinalis*), landlocked salmon (*Salmo salar*), lake trout (togue) (*Salvelinus namaycush*), and brown trout (*Salmo trutta*) are the dominant “coldwater” species, and the smallmouth bass (*Micropterus dolomieu*), largemouth bass (*Micropterus salmoides*), chain pickerel (*Esox niger*), and white perch (*Morone americana*) are the dominant “warmwater” species. Fisheries for the other species are of lesser importance, either because they have limited distributions or because of angler preference.

The lake whitefish (*Coregonus clupeaformis*), burbot (cusk) (*Lota lota*), rainbow trout (*Oncorhynchus mykiss*), and black crappie (*Poxmoxis nigromaculatus*) are important to some waters but have limited distributions. The northern pike (*Esox lucius*) and muskellunge (*Esox masquinongy*) are recently introduced species and are presently limited to a few waters, but the numbers of waters supporting these two species are increasing. The brown bullhead (hornpout) (*Ameiurus nebulosus*) is pursued on a regular basis by only a few anglers. Although they are very abundant statewide, the yellow perch (*Perca flavescens*), pumpkinseed (*Lepomis gibbosus*), and redbreast sunfish (*Lepomis auritus*) are not highly valued by most anglers but do have a constituency among young anglers. The rainbow smelt (*Osmerus mordax*) is important forage for other sportfish. Smelt are also important as sportfish and are a commercially valuable baitfish.

Table 5. Inland Fish of Maine – Species List.	
Species	Scientific Name
American Eel	<i>Anguilla rostrata</i>
Arctic Charr	<i>Salvelinus alpinus oquassa</i>
Banded Killifish	<i>Fundulus diaphanus</i>
Black Crappie ^{NI}	<i>Poxmoxis nigromaculatus</i>
Blacknose Dace	<i>Rhinichthys atratulus</i>
Blacknose Shiner	<i>Notropis heterolepis</i>
Bluegill ^{NI}	<i>Lepomis macrochires</i>
Bridled Shiner	<i>Notropis bifrenatus</i>
Brook Stickleback	<i>Culaea inconstans</i>
Brook Trout	<i>Salvelinus fontinalis</i>

Table 5. Inland Fish of Maine – Species List.	
Species	Scientific Name
Brown Bullhead	<i>Ameiurus nebulosus</i>
Brown Trout ^{NI}	<i>Salmo trutta</i>
Burbot (Cusk)	<i>Lota lota</i>
Chain Pickerel	<i>Esox niger</i>
Common Carp ^{NI}	<i>Cyprinus carpio</i>
Common Shiner	<i>Luxilus cornutus</i>
Creek Chub	<i>Semotilus atromaculatus</i>
Creek Chubsucker	<i>Erimyzon oblongus</i>
Eastern Silvery Minnow ^{NI}	<i>Hybognathus regius</i>
Emerald Shiner ^{NI}	<i>Notropis atheinoides</i>
Fallfish	<i>Semotilus corporalis</i>
Fathead Minnow	<i>Pimephales promelas</i>
Finescale Dace	<i>Phoxinus neogaeus</i>
Fourspine Stickleback	<i>Apeltes quadracus</i>
Golden Shiner	<i>Notemigonus crysoleucas</i>
Goldfish ^{NI}	<i>Carassius auratus</i>
Lake Chub	<i>Couesius plumbeus</i>
Lake Trout	<i>Salvelinus namaycush</i>
Lake Whitefish	<i>Coregonus clupeaformis</i>
Landlocked Alewife ^{NI}	<i>Alosa pseudoharengus</i>
Landlocked Salmon	<i>Salmo salar</i>
Largemouth Bass ^{NI}	<i>Micropterus salmoides</i>
Longnose Dace	<i>Rhinichthys cataractae</i>
Longnose Sucker	<i>Catostomus catostomus</i>
Muskellunge ^{NI}	<i>Esox masquinongy</i>
Ninespine Stickleback	<i>Pungitius punitius</i>
Northern Pike ^{NI}	<i>Esox lucius</i>
Northern Redbelly Dace	<i>Phoxinus eos</i>
Pearl Dace	<i>Margariscus margarita</i>
Pumpkinseed	<i>Lepomis gibbosus</i>
Rainbow Smelt	<i>Osmerus mordax</i>
Rainbow Trout ^{NI}	<i>Oncorhynchus mykiss</i>
Redbreast Sunfish	<i>Lepomis auritus</i>
Redfin Pickerel	<i>Esox americanus americanus</i>
Round Whitefish	<i>Prosopium cylindraceus</i>
Rudd ^{NI}	<i>Scardinius erythrophthalmus</i>
Slimy Sculpin	<i>Cottus cognatus</i>
Smallmouth Bass ^{NI}	<i>Micropterus dolomieu</i>
Spottail Shiner ^{NI}	<i>Notropis hudsonius</i>
Swamp Darter	<i>Etheostoma fusiforme</i>
Threespine Stickleback	<i>Gasterosteus aculeatus</i>
Walleye ^{NI}	<i>Stizostedion vitreum</i>
White Catfish ^{NI}	<i>Ameiurus catus</i>
White Perch	<i>Morone americana</i>
White Sucker	<i>Catostomus commersoni</i>

Table 5. Inland Fish of Maine – Species List.	
Species	Scientific Name
Yellow Perch	<i>Perca flavescens</i>
NI = Non-indigenous	

Listed Inland Fish

None of Maine's inland fish species are federally Threatened or Endangered, although one, the American eel, is in the early stages of the process to determine the need for a federal listing. The swamp darter (*Etheostoma fusiforme*) is Threatened in Maine. The redfin pickerel (*Esox americanus americanus*), Arctic charr (*Salvelinus alpinus oquassa*), lake trout, and lake whitefish are of concern because of limited or declining distributions and/or population numbers.

Distribution of Inland Fish in Maine									
	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
Swamp Darter	<i>Etheostoma fusiforme</i>			X					
American Eel	<i>Anguilla rostrata</i>		X	X		X			
Arctic Charr	<i>Salvelinus alpinus oquassa</i>				X				
Banded Killifish	<i>Fundulus diaphanus</i>	X							X
Black Crappie	<i>Pomoxis nigromaculatus</i>			X				X	X
Blacknose Dace	<i>Rhinichthys atratulus</i>	X							
Blacknose Shiner	<i>Notropis heterolepis</i>				X				
Bluegill	<i>Lepomis macrochires</i>			X					
Bridled Shiner	<i>Notropis bifrenatus</i>						X		
Brook Stickleback	<i>Culaea inconstans</i>		X					X	X
Brook Trout	<i>Salvelinus fontinalis</i>	X							
Brown Bullhead	<i>Ameiurus nebulosus</i>	X							
Brown Trout	<i>Salmo trutta</i>			X		X		X	
Burbot (Cusk)	<i>Lota lota</i>	X							X
Chain Pickerel	<i>Esox niger</i>		X	X		X	X	X	X
Common Carp	<i>Cyprinus carpio</i>		X					X	X
Common Shiner	<i>Luxilus cornutus</i>	X							
Creek Chub	<i>Semotilus atromaculatus</i>	X							
Creek Chubsucker	<i>Erimyzon oblongus</i>						X		X
Eastern Silvery Minnow	<i>Hybognathus regius</i>			X					X
Emerald Shiner	<i>Notropis atheinoides</i>			X					X
Fallfish	<i>Semotilus corporalis</i>	X							
Fathead Minnow	<i>Pimephales promelas</i>	X							X
Finescale Dace	<i>Phoxinus neogaeus</i>				X				
Fourspine Stickleback	<i>Apeltes quadracus</i>							X	X
Golden Shiner	<i>Notemigonus</i>	X							

Distribution of Inland Fish in Maine									
	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
	<i>crysoleucas</i>								
Goldfish	<i>Carassius auratus</i>								X
Lake Chub	<i>Couesius plumbeus</i>				X		X		
Lake Trout	<i>Salvelinus namaycush</i>	X							X
Lake Whitefish	<i>Coregonus clupeaformis</i>				X				X
Landlocked Alewife	<i>Alosa pseudoharengus</i>								X
Landlocked Salmon	<i>Salmo salar</i>	X							X
Largemouth Bass	<i>Micropterus salmoides</i>		X	X			X	X	
Longnose Dace	<i>Rhinichthys cataractae</i>				X				X
Longnose Sucker	<i>Catostomus catostomus</i>				X				
Muskellunge	<i>Esox masquinongy</i>				X				X
Ninespine Stickleback	<i>Pungitius punitius</i>	X							X
Northern Redbelly Dace	<i>Phoxinus eos</i>				X	X		X	
Northern Pike	<i>Esox lucius</i>							X	X
Pearl Dace	<i>Margariscus margarita</i>				X				
Pumpkinseed	<i>Lepomis gibbosus</i>	X							
Rainbow Smelt	<i>Osmerus mordax</i>	X							
Rainbow Trout	<i>Oncorhynchus mykiss</i>						X	X	X
Redbreast Sunfish	<i>Lepomis auritus</i>		X	X	X	X			
Redfin Pickerel	<i>Esox americanus americanus</i>		X						X
Round Whitefish	<i>Prosopium cylindraceus</i>				X				X
Rudd	<i>Scardinius erythrophthalmus</i>							X	X
Slimy Sculpin	<i>Cottus cognatus</i>				X		X		
Smallmouth Bass	<i>Micropterus dolomieu</i>		X	X		X	X		
Spottail Shiner	<i>Notropis hudsonius</i>								X
Threespine Stickleback	<i>Gasterosteus aculeatus</i>	X			X				
Walleye ¹	<i>Stizostedion vitreum</i>							X	
White catfish	<i>Amerius catus</i>		X					X	X
White Perch	<i>Morone americana</i>		X	X		X	X	X	
White Sucker	<i>Catostomus commersoni</i>	X							
Yellow Perch	<i>Perca flavescens</i>	X							

¹ Spawning population has not been confirmed. Adults observed in one (1) lake only.

3.1.5 MAMMALS (NON-MARINE)

General Overview

Maine has 61 mammalian species not associated with the marine environment (Table 6). The diversity of Maine's mammals is unique in the number of predators and herbivores that currently or historically resided in the state. Much of this diversity can be attributed to Maine's location relative to the ecoregion provinces of North America. Maine contains three of these provinces (Warm Continental Mountains, Warm Continental Division, and the Hot Continental Division) and is near the Subarctic Division in Canada (Bailey 1997). Maine's proximity to the Subarctic Division allows species (e.g., lynx (*Lynx canadensis*)) that are typically found in boreal forests to immigrate between the boreal forest and mixed deciduous forests of Maine. Similarly, the occurrence of the Hot Continental Division in southern Maine contains species (e.g., New England Cottontail (*Sylvilagus transistionalis*)) that generally occur further south. Approximately 12 species of mammals occur in habitats that are rare, and roughly 41% of the mammals are limited in their distribution because they require habitats that are geographically limited in Maine (Gawler et al. 1996).

Maine's native mammalian fauna has remained fairly intact since losing the sea mink (*Mustela macrodon*), which is now extinct, caribou (*Rangifer tarandus*), eastern cougar (*Felis concolor*), and wolf (*Canis lupus*) roughly 100 years ago (Gawler et al. 1996). Some mammals, such as the gray fox (*Urocyon cinereoargenteus*) and opossum (*Didelphis virginiana*), have expanded their range into Maine, and others have expanded or contracted their distribution in Maine, primarily because of changing forest practices, reverting farmland, human development, and climate.

Table 6. Mammals of Maine – Species List.	
Species	Scientific Name
Opossum	
Virginia Opossum	<i>Didelphis virginiana</i>
Shrews	
Long-tailed Shrew	<i>Sorex dispar</i>
Masked Shrew	<i>Sorex cinereus</i>
Northern Short-tailed Shrew	<i>Blarina brevicauda</i>
Pygmy Shrew	<i>Sorex hoyi</i>
Smoky Shrew	<i>Sorex fumeus</i>
Water Shrew	<i>Sorex palustris</i>
Moles	
Hairy-tailed Mole	<i>ParMASCalops breweri</i>
Star-nosed Mole	<i>Condylura cristata</i>
Bats	
Big Brown Bat	<i>Eptesicus fuscus</i>
Eastern Pipistrelle	<i>Pipistrellus subflavus</i>
Eastern Red Bat	<i>Lasiurus borealis</i>
Eastern Small-footed Myotis	<i>Myotis leibii</i>
Hoary Bat	<i>Lasiurus cinereus</i>
Little Brown Myotis	<i>Myotis lucifugus</i>
Northern Long-eared Myotis	<i>Myotis septentrionalis</i>
Silver-haired Bat	<i>Lasionycteris noctivagans</i>

Table 6. Mammals of Maine – Species List.	
Species	Scientific Name
Rabbit and Hare	
New England Cottontail	<i>Sylvilagus transitionalis</i>
Snowshoe Hare	<i>Lepus americanus</i>
Squirrels and Allies	
Eastern Chipmunk	<i>Tamias striatus</i>
Eastern Gray Squirrel	<i>Sciurus carolinensis</i>
Northern Flying Squirrel	<i>Glaucomys sabrinus</i>
Red Squirrel	<i>Tamiasciurus hudsonicus</i>
Southern Flying Squirrel	<i>Glaucomys volans</i>
Woodchuck	<i>Marmota monax</i>
Beaver	
American Beaver	<i>Castor canadensis</i>
Mice, Voles, Muskrat, and Lemmings	
Deer Mouse	<i>Peromyscus maniculatus</i>
Meadow Vole	<i>Microtus pennsylvanicus</i>
Muskrat	<i>Ondatra zibethicus</i>
Northern Bog Lemming	<i>Synaptomys borealis</i>
Penobscot Meadow Vole	<i>Microtus pennsylvanicus shattucki</i>
Rock Vole	<i>Microtus chrotorrhinus</i>
Southern Bog Lemming	<i>Synaptomys cooperi</i>
Southern Red-backed Vole	<i>Clethrionomys gapperi</i>
White-footed Mouse	<i>Peromyscus leucopus</i>
Woodland Vole	<i>Microtus pinetorum</i>
Jumping Mice	
Meadow Jumping Mouse	<i>Zapus hudsonius</i>
Woodland Jumping Mouse	<i>Napaeozapus insignis</i>
Old World Rodents	
Brown Rat	<i>Rattus norvegicus</i>
House Mouse	<i>Mus musculus</i>
House Rat	<i>Rattus rattus</i>
Porcupine	
North American Porcupine	<i>Erethizon dorsatum</i>
Canines	
Coyote	<i>Canis latrans</i>
Gray Fox	<i>Urocyon cinereoargenteus</i>
Red Fox	<i>Vulpes vulpes</i>
Wolf ^{NB}	<i>Canis lupus</i>
Bear	
Black Bear	<i>Ursus americanus</i>
Raccoon	
Raccoon	<i>Procyon lotor</i>
Mustelids	
American Marten	<i>Martes americana</i>
Ermine (also short-tailed weasel)	<i>Mustela erminea</i>
Fisher	<i>Martes pennanti</i>
Long-tailed Weasel	<i>Mustela frenata</i>
Mink	<i>Mustela vison</i>

Table 6. Mammals of Maine – Species List.	
Species	Scientific Name
Northern River Otter	<i>Lutra canadensis</i>
Striped Skunk	<i>Mephitis mephitis</i>
Cats	
Bobcat	<i>Lynx rufus</i>
Canada Lynx	<i>Lynx canadensis</i>
Puma ^E	<i>Felis concolor</i>
Deer, Moose, and Caribou	
Caribou ^E	<i>Rangifer tarandus</i>
Moose	<i>Alces alces</i>
White-tailed Deer	<i>Odocoileus virginianus</i>
NB = Occasional, no known breeding population	
E = Extirpated	

Listed Mammals

Three non-marine mammals are listed as Extirpated (Eastern cougar, gray wolf, and woodland caribou), none are listed by Maine as Endangered, and only one is listed as Threatened – the Northern bog lemming (*Synaptomys borealis*). The Canada lynx is a species of Special Concern in Maine (Appendix 4). The gray wolf (*Canis lupus*) and Eastern cougar (*Felis concolor cougar*) are federally listed as Endangered, and the Canada lynx (*Lynx canadensis*) as Threatened.

Artiodactyla

Cervidae (Caribou, Deer, and Moose)

Maine once had three Cervidae species, but the woodland caribou (*Rangifer tarandus*) was extirpated from the state in 1908 (Palmer 1938). Plans were made by the USFWS in 1937-38 and 1952, and by the Maine Cooperative Wildlife Research Unit in 1940-41, to obtain caribou from Canada and release them in Maine, but the plans were not acted upon (McCollough 1987). A reintroduction was attempted in 1963 when the Maine Department of Fish and Game released 23 woodland caribou obtained from Newfoundland, but it failed possibly because of the effects of *Parelaphostrongylus tenuis* (brain worm), poaching, and predation (McCollough 1987, Bergerud and Mercer 1989). In 1986, another major attempt to reintroduce woodland caribou was initiated by a coalition of entities called the Maine Caribou Project. This project also failed due to *P. tenuis* infections and excessive predation, possibly by black bears (McCollough 1991).

The Moose (*Alces alces*) is one of Maine's premier game species. Moose were plentiful in Maine during the 1600s, but by the early 1900s, Maine's herd was reduced to an estimated 2,000 animals (Banasiak et al. 1980, Morris and Elowe 1993). Protection from excessive hunting, and improving habitat conditions, allowed the population to increase to the current estimate of 29,000 wintering moose (Morris 1999). The moose herd is carefully managed to meet publicly derived goals and objectives (Morris 2002).

The white-tailed deer (*Odocoileus virginianus*) is also a premier game species in Maine. It is not likely that deer were very abundant in Maine during early colonial times when Maine's winters were severe, and deer faced predation from man, wolves, bobcats, black bears, and mountain lions (Stanton 1963, Banasiak 1964, Lavigne 1999). Logging and clearing, moderation of winters, and the extirpation of the wolf and eastern cougar are believed to have been

responsible for the increase in Maine's deer population during the 1800s. Currently the deer population is managed to meet publicly derived goals and objectives, which calls for an increase in deer populations in some areas of the state, and a decrease or maintenance of current population levels in other areas (Lavigne 1999, Lavigne 2004). The current deer management system takes into account the effects of severe winters and utilizes a flexible any-deer permit system and special hunts to reach management goals and objectives (Lavigne 2004).

Distribution of Cervidae (Caribou, Deer, and Moose) in Maine									
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
Moose	<i>Alces alces</i>	X							
White-tailed Deer	<i>Odocoileus virginianus</i>	X							
Woodland Caribou	<i>Rangifer tarandus caribou</i>	Extirpated							

**Carnivora
Canidae (Coyotes, Foxes, and Wolves)**

There were four Canidae species in Maine. The gray wolf (*Canis lupus*) is federally listed as an Endangered species in Maine, and state listed as Extirpated. There has been one documented case of a wolf being killed in Maine in recent years, but there are questions about its origin. Other large canids have been trapped, shot, observed, or their tracks seen, but currently there are no data substantiating a viable population of wolves in Maine. Also, questions have been raised as to the species of wolves that historically occupied Maine and the introgression of wolf genes into Maine's coyote population (Wilson et al. 2004).

The eastern coyote (*Canis latrans*) is distributed statewide and is abundant (Jakubas 1999). It has been the center of controversy in recent years because of its potential role in affecting deer populations, and the desire of some publics to control or eliminate coyote populations. Very few of Maine's coyote appear to be genetically similar to western coyotes; most show a degree of genetic overlap with eastern Canadian wolves (*Canis lycaon*) (Wilson et al. 2004).

The gray fox (*Urocyon cinereoargenteus*) and red fox (*Vulpes vulpes*) are hunted and trapped in Maine, and both are monitored primarily through trapping records. The gray fox is distributed in the southern portion of the state, and recent trapping records indicate the population may be increasing (Jakubas 2004). The red fox population is distributed statewide (Caron 1986) and currently considered to be abundant and stable (Jakubas 2004).

Distribution of Canidae (Coyotes, Foxes, and Wolves) in Maine									
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
Eastern Coyote	<i>Canis latrans</i>	X							
Gray Fox	<i>Urocyon cinereoargenteus</i>			X			X		
Red Fox	<i>Vulpes vulpes</i>	X							
Wolf	<i>Canis lupus</i>	Extirpated							

Felidae (Bobcat, Cougar, and Lynx)

Three cats once roamed Maine. Of the three, the eastern cougar (*Felis concolor*) was extirpated during the early 1900s. It is currently listed as an Endangered species by the USFWS and as Extirpated by Maine. Each year, the public report sightings of eastern cougar, and, in some instances, MDIFW personnel have reported sightings. However, there are no empirical data that indicate an eastern cougar population exists in Maine.

In March 2000, the Canada lynx (*Lynx Canadensis*) was listed as a Threatened species by the USFWS, and it has been considered a species of Special Concern in Maine because of the lack of data on population size and distribution (Appendix 4). Lynx were observed throughout Maine during the period 1833-1912, but primarily in northern and western Maine during 1913-1999, at varying population levels. There was also evidence of lynx reproducing in Maine during the period 1864-1999 (Hoving 2001, Hoving et al. 2003). In 1999, the USFWS, MDIFW, and a number of other partners, initiated an intensive radiotelemetry study of lynx in Maine, which, along with snow-track surveys conducted by MDIFW in cooperation with USFWS and the University of Maine, established that Maine currently has a reproducing population that is distributed primarily over the northwestern portion of the state. Recent genetic studies indicate Maine's population may be part of a larger population found in the Gaspé region of Quebec and the lynx population in New Brunswick (W. Johnson, pers. communication). In 2006, the species will be considered for listing as Endangered or Threatened in Maine as part of a larger review of Maine's current list.

The bobcat (*Lynx rufus*) is a trapped and hunted species that is distributed over most of the state (Morris 1986). The population is carefully managed through implementation of the *Bobcat Management System* (McLaughlin 1995). The current bobcat population is believed to be increasing due to recent, high snowshoe hare densities (Jakubas 2004).

Distribution of Felidae (Bobcat, Cougar, and Lynx) in Maine									
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
Bobcat	<i>Lynx rufus</i>	X							
Canada Lynx	<i>Lynx canadensis</i>				X		X		
Eastern Cougar	<i>Felis concolor</i>	Extirpated							

Mustelidae (Fisher, Marten, Otter, Skunk, and Weasel)

There are seven species of Mustelidae in Maine; most are considered to be common in Maine, and all are trapped for fur. Only the American marten (*Martes americana*) is not distributed statewide. The American marten, fisher (*Martes pennanti*), and northern river otter (*Lutra canadensis*) are carefully managed in Maine (Clark 1986, Hunt 1986, Ritter 1986, Elowe 1990a, Elowe 1990b), and the American marten and northern otter populations are considered to be stable (Jakubas 2004). The fisher population increased for about 10 years, but now may be leveling off (Jakubas 2004). Population trends for the other Mustelids are unknown.

Distribution of Mustelidae (Fisher, Marten, Otter, Skunk, and Weasel) in Maine									
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
American Marten	<i>Martes americana</i>				X	X	X	X	

Distribution of Mustelidae (Fisher, Marten, Otter, Skunk, and Weasel) in Maine									
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
Ermine (also short-tailed weasel)	<i>Mustela erminea</i>	X							
Fisher	<i>Martes pennanti</i>	X							
Long-tailed Weasel	<i>Mustela frenata</i>	X							
Mink	<i>Mustela vison</i>	X							
Northern River Otter	<i>Lutra canadensis</i>	X							
Striped Skunk	<i>Mephitis mephitis</i>	X							

Procyonidae (Raccoons)

The raccoon (*Procyon lotor*) is common statewide, but population size and trend are unknown (Connolly 1986, Boone and Krohn 1998a). They are hunted and trapped in Maine, but harvested animals are not tagged, so harvest trends are not available.

Ursidae (Bears)

The American black bear (*Ursus americanus*) is Maine's only bear species, and it is abundant and distributed over most of the state (McLaughlin 1999). Black bears are hunted and trapped in Maine, but the population has been carefully managed since 1981 by monitoring radio-tagged bears in three areas of the state, and more recently in a fourth area (McLaughlin 1988, McLaughlin 1999, Jakubas and Vashon 2004). Publicly derived management goals and objectives guide Maine's management activities (McLaughlin 1999). The bear population in Maine is conservatively estimated to be 23,000 animals (Jakubas and Vashon 2004).

Chiroptera

Vespertilionidae (Common Bats)

All eight species of *Vespertilionidae* (bats) listed below are species of Special Concern in Maine (Appendix 4), and all were listed due to a lack of information on their population size and trends and the general observation that bats as a group seem to be less abundant than previously. Since 1994, surveys indicate that the big brown bat (*Eptesicus fuscus*), little brown myotis (*Myotis lucifugus*), and northern long-eared Myotis (*Myotis septentrionalis*) are common, but trends in their populations are unknown. The eastern small-footed myotis (*Myotis leibii*) is believed to be rare, but its status is poorly known; only one hibernaculum with just a few eastern small-footed myotis is currently known to exist in Maine, and only a few summer records exist.

Distribution of Vespertilionidae (Bats) in Maine									
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
Big Brown Bat	<i>Eptesicus fuscus</i>	X							
Eastern Pipistrelle	<i>Pipistrellus subflavus</i>			X		X	X	X	
Eastern Red Bat	<i>Lasiurus borealis</i>	X							

Distribution of Vespertilionidae (Bats) in Maine									
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
Eastern Small-footed Myotis	<i>Myotis leibii</i>			X		X	X	X	
Hoary Bat	<i>Lasiurus cinereus</i>	X							
Little Brown Myotis	<i>Myotis lucifugus</i>	X							
Northern Long-eared Myotis	<i>Myotis septentrionalis</i>	X							
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	X							

Insectivora Soricidae (Shrews)

Of Maine's six Soricidae (shrews) species, only one is not distributed statewide (Boone and Krohn 1998b). The long-tailed shrew is rare and it is a species of Special Concern in Maine because of inadequate knowledge of numbers or trends (Appendix 4). This species is found only in western and central Maine (Boone and Krohn 1998b). Masked shrews (*Sorex cinereus*) and northern short-tailed shrews (*Blarina brevicauda*) are abundant in Maine, but the rest of the shrew species are considered to be uncommon (Boone and Krohn 1998).

Distribution of Soricidae (Shrews) in Maine									
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
Long-tailed Shrew	<i>Sorex dispar</i>						X	X	
Masked Shrew	<i>Sorex cinereus</i>	X							
Northern Short-tailed Shrew	<i>Blarina brevicauda</i>	X							
Pygmy Shrew	<i>Sorex hoyi</i>	X							
Smoky Shrew	<i>Sorex fumeus</i>	X							
Water Shrew	<i>Sorex palustris</i>	X							

Talpidae (Moles)

The star-nosed mole (*Condylura cristata*) is distributed statewide and considered to be common (Boone and Krohn 1998a). The hairy-tailed mole (*ParMASCALops breweri*) is found in the southern half of the state.

Distribution of Talpidae (Moles) in Maine									
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
Hairy-tailed Mole	<i>ParMASCALops breweri</i>		X	X		X	X	X	
Star-nosed Mole	<i>Condylura cristata</i>	X							

Lagomorpha Leporidae (Hares and Rabbits)

There are two “bunnies” in Maine, the New England cottontail (*Sylvilagus transistionalis*) and the snowshoe hare (*Lepus americanus*). The New England cottontail (NEC) is a species of Special Concern in Maine (Appendix 4), and it is currently under review for federal listing.

In the 1950s, the NEC, Maine's only cottontail, was common in southern Maine and reported as far north as Fryeburg, Lewiston, and Belfast. It is now found in only 618 mi² of the 3,629 mi² it formerly occupied, primarily because of the loss and fragmentation of early successional, shrubby habitats the NEC require (Litvaitis and Jakubas 2004, Jakubas 2004).

The snowshoe hare is an important prey species that is common statewide (Boone and Krohn 1998). Between 1982 and 1995, early successional forests, which are favorable to snowshoe hares, increased 39%, and consequently carrying capacity for hares increased, but if current forest practices continue, carrying capacity is expected to decrease in the future (Jakubas and Cross 2002).

Distribution of Leporidae (Hares and Rabbits) in Maine									
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
New England Cottontail	<i>Sylvilagus transistionalis</i>			X					X
Snowshoe Hare	<i>Lepus americanus</i>	X							

Marsupialia Didelphidae (Opossums)

The Virginia opossum (*Didelphis virginiana*), Maine's only Didelphidae, is at the northern edge of its range in Maine and is a relative newcomer to Maine (Boone and Krohn 1998a). Opossums can be found in the most southern parts of Maine and are considered to be common. They can be hunted and trapped in Maine.

Rodentia Castoridae (Beavers)

The American beaver (*Castor canadensis*) is Maine's only Castoridae (beaver) species (Hilton 1986). It is a trapped species, and is considered to be abundant in most areas of the state, even to the point of being a nuisance (Jakubas 2004). The population is monitored through the Beaver Management System (Elowe 1988).

Cricetidae (New World Mice, Rats, and Voles)

There are two species of mice in Maine (other than jumping mice (see Zapodidae)), the deer mouse (*Peromyscus maniculatus*) and the white-footed mouse (*Peromyscus leucopus*). Both species are abundant and secure where they are found.

There are four species of voles in Maine. The meadow vole (*Microtus pennsylvanicus*) and the southern red-backed vole (*Clethrionomys gapperi*) are found statewide and are abundant and secure. The yellow-nosed or rock vole (*Microtus chrotorrhinus*) is at the southern edge of its range in Maine where it is limited to spotty locations and a restricted ecological niche. The woodland or pine vole (*Microtus pinetorum*) reaches the northern limit of its range in Maine, where it is found only in the extreme southern portion of the state. The Penobscot meadow vole (*Microtus pennsylvanicus shattucki*) is a unique subspecies (Lowry 2002) limited to islands of Penobscot Bay. Both the Penobscot meadow vole and the yellow-nosed vole are species of Special Concern in Maine (Appendix 4).

The muskrat (*Ondatra zibethicus*) is a trapped species that is common throughout Maine (Boone and Krohn 1998a), but recent, anecdotal accounts indicate muskrat populations may be declining.

Distribution of Cricetidae (New World Mice, Rats, and Voles) in Maine									
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
Deer Mouse	<i>Peromyscus maniculatus</i>	X							
Meadow Vole	<i>Microtus pennsylvanicus</i>	X							
Muskrat	<i>Ondatra zibethicus</i>	X							
Northern Bog Lemming	<i>Synaptomys borealis</i>				X		X	X	X
Penobscot Meadow Vole	<i>Microtus pennsylvanicus shattucki</i>		X						
Rock Vole Yellow-nosed vole	<i>Microtus chrotorrhinus</i>				X		X	X	X
Southern Bog Lemming	<i>Synaptomys cooperi</i>	X							
Southern Red-backed Vole	<i>Clethrionomys gapperi</i>	X							
White-footed Mouse	<i>Peromyscus leucopus</i>		X	X		X	X	X	
Woodland Vole	<i>Microtus pinetorum</i>			X					

Erethizontidae (Porcupine)

North American porcupines (*Erethizon dorsatum*) are common statewide, and are known at times to cause considerable damage to trees (Boone and Krohn 1998a). They can be hunted year-round.

Muridae (Old World Mice and Rats)

Brown (Norway) rats (*Rattus norvegicus*) and house mice (*Mus Musculus*) are widely distributed and abundant, especially in developed areas. Black (roof or house) rats (*Rattus rattus*) may occasionally be found in seaports, but populations do not persist (Godin, 1977).

Distribution of Muridae (Old World Mice and Rats) in Maine									
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
Brown Rat	<i>Rattus norvegicus</i>	X							
House Mouse	<i>Mus musculus</i>	X							
House Rat	<i>Rattus rattus</i>		X						

Sciuridae (Squirrels and Allies)

All species of Sciuridae (squirrels) in Maine are considered to be common except the southern flying squirrel (*Glaucomys volans*), which reaches the northern edge of its range in Maine (Boone and Krohn 1998b). This squirrel is also a species of Special Concern in Maine due to a lack of information on numbers or population trends, which is complicated by the difficulty of differentiating this species in the field from the common northern flying squirrel (*Glaucomys sabrinus*) (Appendix 4).

Distribution of Sciuridae (Squirrels and Allies) in Maine									
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
Eastern Chipmunk	<i>Tamias striatus</i>	X							
Eastern Gray Squirrel	<i>Sciurus carolinensis</i>		X	X		X	X	X	
Northern Flying Squirrel	<i>Glaucomys sabrinus</i>	X							
Red Squirrel	<i>Tamiasciurus hudsonicus</i>	X							
Southern Flying Squirrel	<i>Glaucomys volans</i>		X	X		X	X		
Woodchuck	<i>Marmota monax</i>	X							

Zapodidae (Jumping Mice)

Maine has two species of Zapodidae (jumping mice), the meadow jumping mouse (*Zapus hudsonius*) and the woodland jumping mouse (*Napaeozapus insignis*). Both species are

distributed throughout the state and considered to be common, but their population trends are unknown (Boone and Krohn 1998a).

Distribution of Zapodidae (Jumping Mice) in Maine									
Species	Scientific Name	Most of State	Coastal	South	North	East	West	Central	Spotty
Meadow Jumping Mouse	<i>Zapus hudsonius</i>	X							
Woodland Jumping Mouse	<i>Napaeozapus insignis</i>	X							

3.1.6 MARINE SPECIES

General Overview

According to the Census of Marine Life Gulf of Maine Program (<http://www.usm.maine.edu/gulfofmaine-census/>), there are 2,485 known species of plants and animals in the Gulf of Maine including phytoplankton (310), macrophytes (271), invertebrates (1,414), chordates (37), fishes (252), birds (177), and mammals (24). The Gulf of Maine supports mainly boreal, cold temperate, and non-migratory species.

Based on the best available existing information and guidance provided by the Department of Marine Resources and National Marine Fisheries Service, the marine portion of Maine's CWCS focuses attention on listed marine mammals (whales), listed marine turtles, and diadromous fish from the suite of marine species. Outside of these groups, the majority of the species that have active research programs within the Department of Marine Resources are commercially harvested and have management plans and/or regulations in place for conservation purposes (Chapter 6, Appendix 10) or are National Marine Fisheries Service species of concern in the northeast region (Maine through Virginia) and have proactive conservation programs addressing conservation opportunities (Chapter 6, Appendix 10). With cooperation and guidance from Maine MDMR and NMFS, we will place a high priority on further evaluating the full suite of marine resources for future inclusion in Maine's CWCS.

Table 7. Fishes, Marine Mammals, and Marine Reptiles of the Gulf of Maine – Species List. ¹	
Species	Scientific Name
FISHES	
Order Myxiniiformes	
Hagfish	<i>Myxine glutinosa</i>
Order Petromyzontiformes	
Sea Lamprey	<i>Petromyzon marinus</i>
Order Lamniformes	
Basking Shark	<i>Cetorhinus maximus</i>
Great White Shark	<i>Carcharodon carcharias</i>
Porbeagle	<i>Lamna nasus</i>
Sand Tiger Shark	<i>Carcharias taurus</i>
Shortfin Mako	<i>Isurus oxyrinchus</i>

Table 7. Fishes, Marine Mammals, and Marine Reptiles of the Gulf of Maine – Species List.¹	
Species	Scientific Name
Thintail Thresher	<i>Alopias vulpinus</i>
Order Carcharhiniformes	
Blue Shark	<i>Prionace glauca</i>
Bonnethead Shark	<i>Sphyrna tiburo</i>
Chain Catshark	<i>Scyliorhinus retifer</i>
Dusky Shark	<i>Carcharhinus obscurus</i>
Dusky Smooth-hound	<i>Mustelus canis</i>
Milk Shark	<i>Rhizoprionodon acutus</i>
Sandbar Shark	<i>Carcharhinus plumbeus</i>
Smooth Hammerhead	<i>Sphyrna zygaena</i>
Tiger Shark	<i>Galeocerdo cuvier</i>
Order Squaliformes	
Black Dogfish	<i>Centroscyllium fabricii</i>
Bramble Shark	<i>Echinorhinus brucus</i>
Greenland Shark	<i>Somniosus microcephalus</i>
Piked Dogfish	<i>Squalus acanthias</i>
Portuguese Dogfish	<i>Centroscymnus coelolepis</i>
Order Torpediniformes	
Atlantic Torpedo	<i>Torpedo nobiliana</i>
Order Osmeriformes	
Atlantic Rainbow Smelt	<i>Osmerus mordax</i>
Capelin	<i>Mallotus villosus</i>
Greater Argentine	<i>Argentina silus</i>
Order Myctophiformes	
Headlight fish	<i>Diaphus effulgens</i>
Metallic Lanternfish	<i>Myctophum affine</i>
Order Stomiiformes	
Boa Dragonfish	<i>Stomias ferox</i>
Lovely Hatchetfish	<i>Argyropelecus aculeatus</i>
Pearlsides	<i>Maurolicus muelleri</i>
Showy Bristlemouth	<i>Cyclothone signata</i>
Sloane's Viperfish	<i>Chauliodus sloani</i>
Stomias nicholsi	<i>Stomias nicholsi</i>
Threelight Dragonfish	<i>Trigonolampa miriceps</i>
Order Anguilliformes	
American Conger	<i>Conger oceanica</i>
American Eel	<i>Anguilla rostrata</i>
Grey Cutthroat	<i>Synaphobranchus affinis</i>
Margined Snake Eel	<i>Ophichthus cruentifer</i>
Slender Snipe Eel	<i>Nemichthys scolopaceus</i>
Snubnosed eel	<i>Simenchelys parasiticus</i>
Order Aulopiformes	
Longnose Lancetfish	<i>Alepisaurus ferox</i>
Order Cyprinodontiformes	
Mummichog	<i>Fundulus heteroclitus</i>

Table 7. Fishes, Marine Mammals, and Marine Reptiles of the Gulf of Maine – Species List.¹	
Species	Scientific Name
Sheepshead Minnow	<i>Cyprinodon variegatus</i>
Striped Killifish	<i>Fundulus majalis</i>
Order Pleuronectiformes	
American Four-spotted Flounder	<i>Paralichthys oblongus</i>
American Plaice	<i>Hippoglossoides platessoides</i>
American Smooth Flounder	<i>Pleuronectes putnami</i>
Atlantic Halibut	<i>Hippoglossus hippoglossus</i>
Greenland Halibut	<i>Reinhardtius hippoglossoides</i>
Gulf Stream Flounder	<i>Citharichthys arctifrons</i>
Hogchoker	<i>Trinectes maculatus</i>
Summer Flounder	<i>Paralichthys dentatus</i>
Windowpane Flounder	<i>Scophthalmus aquosus</i>
Winter Flounder	<i>Pseudopleuronectes americanus</i>
Witch Flounder	<i>Glyptocephalus cynoglossus</i>
Yellowtail Flounder	<i>Limanda ferruginea</i>
Order Zeiformes	
Grammicolepid	<i>Xenolepidichthys americanus</i>
Silvery John Dory	<i>Zenopsis conchifer</i>
Order Perciformes	
African Pompano	<i>Alectis ciliaris</i>
American Butterfish	<i>Peprilus triacanthus</i>
Atlantic Blue Marlin	<i>Makaira nigricans</i>
Atlantic Bonito	<i>Sarda sarda</i>
Atlantic Horse Mackerel	<i>Trachurus trachurus</i>
Atlantic Mackerel	<i>Scomber scombrus</i>
Atlantic Moonfish	<i>Selene setapinnis</i>
Atlantic White Marlin	<i>Tetrapturus albidus</i>
Banded Rudderfish	<i>Seriola zonata</i>
Barrelfish	<i>Hyperoglyphe perciformis</i>
Bigeye Scad	<i>Trachurus crumenophthalmus</i>
Bigscale Pomfret	<i>Taractichthys longipinnis</i>
Black Drum	<i>Pogonias cromis</i>
Black Sea Bass	<i>Centropristes striatus</i>
Blackfish	<i>Centrolophus niger</i>
Blue Runner	<i>Caranx crysos</i>
Bluefish	<i>Pomatomus saltator</i>
Cero	<i>Scomberomorus regalis</i>
Clup Mackerel	<i>Pneumatophorus colias</i>
Common Dolphinfish	<i>Coryphaena hippurus</i>
Common Remora	<i>Remora remora</i>
Crevalle Jack	<i>Caranx hippos</i>
Cunner	<i>Tautogolabrus adspersus</i>
Deepbody Boarfish	<i>Antigonia capros</i>
Flathead Mullet	<i>Mugil cephalus</i>
Gray Weakfish	<i>Cynoscion regalis</i>
Great Northern Tilefish	<i>Lopholatilus chamaeleonticeps</i>

Table 7. Fishes, Marine Mammals, and Marine Reptiles of the Gulf of Maine – Species List.¹	
Species	Scientific Name
Harvestfish	<i>Peprilus alepidotus</i>
King Mackerel	<i>Scomberomorus cavalla</i>
Largehead Hairtail	<i>Trichiurus lepturus</i>
Leatherjack	<i>Oligoplites saurus</i>
Little Tunny	<i>Euthynnus alleteratus</i>
Live Sharksucker	<i>Echeneis naucrates</i>
Lookdown	<i>Selene vomer</i>
Mackerel Scad	<i>Decapterus macarellus</i>
Northern Bluefin Tuna	<i>Thunnus thynnus</i>
Northern Kingcroaker	<i>Menticirrhus saxatilis</i>
Northern Sennet	<i>Sphyræna borealis</i>
Oilfish	<i>Ruvettus pretiosus</i>
Pilotfish	<i>Naucrates ductor</i>
Scup	<i>Stenotomus chrysops</i>
Sheepshead Seabream	<i>Archosargus probatocephalus</i>
Short Bigeye	<i>Pristigenys alta</i>
Skipjack Tuna	<i>Katsuwonus pelamis</i>
Spanish Mackerel	<i>Scomberomorus maculatus</i>
Spearfish Remora	<i>Remora brachyptera</i>
Spot Croaker	<i>Leiostomus xanthurus</i>
Striped Sea Bass	<i>Morone saxatilis</i>
Swordfish	<i>Xiphias gladius</i>
Tautog	<i>Tautoga onitis</i>
White Perch	<i>Morone americana</i>
Wreckfish	<i>Polyprion americanus</i>
Order Rajiformes	
Barndoor Skate	<i>Dipturus laevis</i>
Clearnose Skate	<i>Raja eglanteria</i>
Cownose Ray	<i>Rhinoptera bonasus</i>
Freckled Skate	<i>Leucoraja garmani</i>
Giant Manta	<i>Manta birostris</i>
Little Skate	<i>Leucoraja erinacea</i>
Roughtail Stingray	<i>Dasyatis centroura</i>
Smooth Skate	<i>Malacoraja senta</i>
Thorny Skate	<i>Amblyraja rad</i>
Winter Skate	<i>Leucoraja ocellata</i>
Order Chimaeriformes	
Smalleyed Rabbitfish	<i>Hydrolagus affinis</i>
Order Acipenseriformes	
Shortnose Sturgeon	<i>Acipenser brevirostrum</i>
Sturgeon	<i>Acipenser sturio</i>
Order Elopiformes	
Ladyfish	<i>Elops saurus</i>
Tarpon	<i>Tarpon atlanticus</i>
Order Clupeiformes	
Alewife	<i>Alosa pseudoharengus</i>

Table 7. Fishes, Marine Mammals, and Marine Reptiles of the Gulf of Maine – Species List.¹	
Species	Scientific Name
American Shad	<i>Alosa sapidissima</i>
Atlantic Herring	<i>Clupea harengus</i>
Atlantic Menhaden	<i>Brevoortia tyrannus</i>
Atlantic Thread Herring	<i>Opisthonema oglinun</i>
Bay Anchovy	<i>Anchoa mitchilli</i>
Blueback Shad	<i>Alosa aestivalis</i>
Broad-striped Anchovy	<i>Anchoa hepsetus</i>
Hickory Shad	<i>Alosa mediocris</i>
Round Herring	<i>Etrumeus teres</i>
Order Salmoniformes	
Atlantic Salmon	<i>Salmo salar</i>
Brook Trout	<i>Salvelinus fontinalis</i>
Coho Salmon	<i>Oncorhynchus kisutch</i>
Pink Salmon	<i>Oncorhynchus gorbuscha</i>
Order Beloniformes	
Atlantic Needlefish	<i>Strongylura marina</i>
Atlantic Saury	<i>Scomberesox saurus saurus</i>
Common Halfbeak	<i>Hyporhamphus unifasciatus</i>
Flat Needlefish	<i>Ablennes hians</i>
Mediterranean Flying Fish	<i>Cheilopogon heterurus</i>
Order Gadiformes	
Atlantic Cod	<i>Gadus morhua</i>
Atlantic Tomcod	<i>Microgadus tomcod</i>
Blue Antimora	<i>Antimora rostrata</i>
Codling	<i>Urophycis regia</i>
Fourbeard Rockling	<i>Enchelyopus cimbrius</i>
Haddock	<i>Melanogrammus aeglefinus</i>
Hakeling	<i>Physiculus fulvus</i>
Hollowsnout Grenadier	<i>Caelorinchus caelorinchus caelorinchus</i>
Longfin Hake	<i>Phycis chesteri</i>
Marlin-spike Grenadier	<i>Nesumia bairdi</i>
Onion-eye Grenadier	<i>Macrourus berglax</i>
Red Hake	<i>Urophycis chuss</i>
Saithe	<i>Pollachius virens</i>
Silver Hake	<i>Merluccius bilinearis</i>
Tusk	<i>Brosme brosme</i>
White Hake	<i>Urophycis tenuis</i>
Order Lampriformes	
Opah	<i>Lampris guttatus</i>
Order Syngnathiformes	
Cornet Fish	<i>Fistularia tabacaria</i>
Lined Sea Horse	<i>Hippocampus erectus</i>
Longspine Snipefish	<i>Macrorhamphosus scolopax</i>
Northern Pipefish	<i>Syngnathus facus</i>
Sargassum Pipefish	<i>Syngnathus pelagicus</i>

Table 7. Fishes, Marine Mammals, and Marine Reptiles of the Gulf of Maine – Species List.¹	
Species	Scientific Name
Order Atheriniformes	
Atlantic Silverside	<i>Menidia menidia</i>
Inland Silverside	<i>Menidia beryllina</i>
Order Gasterosteiformes	
Fourspine Stickleback	<i>Apeltes quadracus</i>
Ninespine Stickleback	<i>Pungitius pungitius</i>
Three-spined Stickleback	<i>Gasterosteus aculeatus aculeatus</i>
Order Scorpaeniformes	
Alligatorfish	<i>Aspidophoroides monopterygius</i>
American Sand Lance	<i>Ammodytes americanus</i>
Arctic Eelpout	<i>Lycodes reticulatus</i>
Arctic Hookear Sculpin	<i>Artediellus uncinatus</i>
Arctic Shanny	<i>Stichaeus punctatus</i>
Arctic Staghorn Sculpin	<i>Gymnocanthus tricuspis</i>
Armored Searobin	<i>Peristedion miniatum</i>
Atlantic Seasnail	<i>Neoliparis atlanticus</i>
Atlantic Spiny Lump sucker	<i>Eumicrotremus spinosus</i>
Blackbelly Rosefish	<i>Helicolenus dactylopterus dactylopterus</i>
Daubed Shanny	<i>Leptoclinus maculatus</i>
Flying Gunard	<i>Dactylopterus volitans</i>
Grubby	<i>Myoxocephalus aeneus</i>
Longhorn Sculpin	<i>Myoxocephalus octodecemspinosus</i>
Lump sucker	<i>Cyclopterus lumpus</i>
Moustache Sculpin	<i>Triglops murrayi</i>
Northern Searobin	<i>Prionotus carolinus</i>
Ocean Perch	<i>Sebastes fasciatus</i>
Ocean Pout	<i>Zoarces americanus</i>
Polar Sculpin	<i>Cottunculus microps</i>
Radiated Shanny	<i>Ulvaria subbifurcata</i>
Rock Gunnel	<i>Pholis gunnellus</i>
Sea Raven	<i>Hemitripterus americanus</i>
Shorthorn Sculpin	<i>Myoxocephalus scorpius</i>
Snakeblenny	<i>Lumpenus lumpretaeformis</i>
Spotted Wolffish	<i>Anarhichas minor</i>
Striped Searobin	<i>Prionotus evolans</i>
Striped Seasnail	<i>Liparis liparis</i>
Wolf Eelpout	<i>Lycenchelys verrillii</i>
Wolffish	<i>Anarhichas lupus</i>
Wrymouth	<i>Cryptacanthodes maculatus</i>
Order Ophidiiformes	
Blackrim Cusk-eel	<i>Lepophidium profundorum</i>
Order Batrachoidiformes	
Oyster Toadfish	<i>Opsanus tau</i>

Table 7. Fishes, Marine Mammals, and Marine Reptiles of the Gulf of Maine – Species List.¹	
Species	Scientific Name
Order Tetraodontiformes	
Burrfish	<i>Chilomycterus schoepfii</i>
Fringed Filefish	<i>Monocanthus ciliatus</i>
Gray Triggerfish	<i>Balistes carolinensis</i>
Northern Puffer	<i>Sphoeroides maculatus</i>
Ocean Sunfish	<i>Mola mola</i>
Orange Filefish	<i>Alutera schoepfi</i>
Planehead Filefish	<i>Stephanolepis hispidus</i>
Scrawled Filefish	<i>Alutera scripta</i>
Sharptail Mola	<i>Masturus lanceolatus</i>
Order Lophiiformes	
American Angler	<i>Lophius americanus</i>
Kroyer's Deep Sea Angler Fish	<i>Ceratias holboelli</i>
Sargassum Fish	<i>Histrio histrio</i>
MARINE MAMMALS	
Whalebone (Baleen) Whales	
Blue Whale	<i>Balaenoptera musculus</i>
Finback Whale	<i>Balaenoptera physalus</i>
Humpback Whale	<i>Megaptera novaeangliae</i>
Minke Whale	<i>Balaenoptera acutorostrata</i>
Northern Right Whale	<i>Eubalaena glacialis</i>
Sei Whale	<i>Balaenoptera borealis</i>
Sperm Whales	
Pygmy Sperm Whale	<i>Kogia. breviceps</i>
Sperm Whale	<i>Physeter macrocephalus</i>
Beaked Whales	
Atlantic Bottle-nosed Whale	<i>Hyperoodon ampullatus</i>
Dense-beaked Whale	<i>Mesoplodon densirostris</i>
Goose-beaked Whale	<i>Ziphius cavirostris</i>
North Sea Beaked Whale	<i>Mesoplodon bidens</i>
True's Beaked Whale	<i>Mesoplodon mirus</i>
Dolphins	
Atlantic White-sided Dolphin	<i>Lagenorhynchus acutus</i>
Bottle-nose Dolphin	<i>Tursiops truncatus</i>
Common Dolphin	<i>Delphinus delphis</i>
Gray Grampus	<i>Grampus griseus</i>
Harbor Porpoise	<i>Phocoena phocoena</i>
Killer Whale	<i>Orcinus orca</i>
Pilot Whale	<i>Globicephala melaena</i>
Short-finned Pilot Whale	<i>Globicephala macrorhynchus</i>
Striped Dolphin	<i>Stenella coeruleoalba</i>
White-beaked Dolphin	<i>Lagenorhynchus albirostris</i>
Narwhal	
Beluga	<i>Delphinapterus leucas</i>
Seals and Walruses	
Gray Seal	<i>Halichoerus grypus</i>

Table 7. Fishes, Marine Mammals, and Marine Reptiles of the Gulf of Maine – Species List.¹	
Species	Scientific Name
Harbor Seal	<i>Phoca vitulina concolor</i>
Harp Seal	<i>Pagophilus groenlandicus</i>
Hooded Seal	<i>Cystophora cristata</i>
MARINE REPTILES	
Marine Turtles	
Atlantic Ridley	<i>Lepidochelys kempi</i>
Green Sea Turtle	<i>Chelonia mydas</i>
Hawksbill	<i>Eretmochelys imbricata</i>
Leatherback	<i>Dermochelys coriacea</i>
Loggerhead	<i>Caretta caretta</i>
¹ A list of marine invertebrates does not exist; we will place a high priority on developing one.	
² Fishes of the Gulf of Maine, as listed by the Census of Marine Life, Gulf of Maine Area Program (http://www.usm.maine.edu/gulfofmaine-census/index.htm).	

Listed Marine Species

During the 121st Maine Legislature, a new *List of State Endangered and State Threatened Marine Species* was created (P.L. 2003 Ch. 573). All federally listed marine mammals and reptiles were added to the State list. These include five Endangered whales: northern right whale (*Eubalaena glacialis*), humpback whale (*Megaptera novaeangliae*), finback whale (*Balaenoptera physalus*), sperm whale (*Physeter catodon*), and sei whale, (*Balaenoptera borealis*), two Endangered turtles: leatherback turtle (*Dermochelys coriacea*), Atlantic ridley turtle, also known as Kemp's ridley (*Lepidochelys kempi*), and one state and federally listed Threatened turtle: loggerhead turtle (*Caretta caretta*). The shortnose sturgeon (*Acipenser brevirostrum*) is federally Endangered as is the Atlantic salmon (*Salmo salar*) in the Gulf of Maine Distinct Population Segment (DPS) found in eight rivers in the mid-coast and Downeast areas.

Marine Fishes

The Gulf of Maine fish fauna is characterized by relatively few species (252) in a relatively large number of families (118). The ten most specious families account for nearly one-third of the Gulf species: *Carangidae* (jacks, 11 species), *Gadidae* (cods, 10), *Scombridae* (mackerels, 10), *Rajidae* (skates, 8), *Clupeidae* (herrings, 8), *Pleuronectidae* (righteye flounders, 7), *Squalidae* (dogfish sharks, 6), *Myctophidae* (lanternfishes, 6), *Cottidae* (sculpins, 6), and *Carcharhinidae* (requiem sharks, 5). Only about a third of the species are resident in the Gulf; another third are visitors from the south that travel around Cape Cod in the summer; and the final third are visitors from the north, deepwater or offshore. The common Gulf of Maine fishes can be divided into four ecological groups based on temperature, depth, latitude, and ecology:

- Shallow-water sedentary – 23 species such as little skate (*Raja erinacea*), winter skate (*Raja ocellata*), longhorn sculpin (*Myoxocephalus octodecemspinosus*), and winter flounder (*Pseudopleuronectes americanus*);

- Deepwater sedentary – 23 species, such as thorny skate (*Amblyraja radiata*), Acadian redfish (*Sebastes marinus*), and witch flounder (*Glyptocephalus cynoglossus*);
- Warm-water migratory – 92 species, mostly found in the summer or autumn, such as butterfish (*Peprilus triacanthus*) and sea robin (*Prionotus carolinus*); and
- Pelagic – 9 species, such as the Atlantic herring (*Clupea harengus*), Atlantic mackerel (*Scomber scombrus*), swordfish (*Xiphias gladius*) and bluefin tuna (*Thunnus thynnus*).

Marine Invertebrates

The marine invertebrates of Maine are very diverse and represent 17 phyla. Important commercially and recreationally harvested species include: American lobster (*Homarus americanus*), rock crab (*Cancer irroratus*), Jonah crab (*Cancer borealis*), green sea urchin (*Strongylocentrotus droehbachiensis*), soft-shell clam (*Mya arenaria*), blue mussel (*Mytilus edulis*), quahog (*Mercenaria mercenaria*), ocean quahog (*Arctica islandica*), surf clam (*Spisula solidissima*), eastern oyster (*Crassostrea virginica*), European oyster (*Ostrea edulis*), sea scallop (*Placopecten magellanicus*), sea cucumber (*Cucumaria frondosa*), horseshoe crab (*Limulus polyphemus*), bloodworm (*Glycera dibranchiate*), and sandworm (*Nereis virens*). It is worth noting that while the horseshoe crab occurs in estuarine regions from the Bay of Fundy south to Florida and the Yucatan Peninsula, the northern most breeding sites for the species occur in several scattered locations in Maine. Casco Bay, Damariscotta River, and the Bagaduce River are the only areas where significant breeding sites exist in the state. The northernmost breeding site is in Hancock County in Taunton Bay at the upper end of Frenchman's Bay.

Marine Mammals

Marine mammals in the Gulf of Maine region include 6 whalebone (baleen) whales - minke whale (*Balaenoptera acutorostrata*), sei whale (*Balaenoptera borealis*), finback whale (*Balaenoptera physalus*), blue whale (*Balaenoptera musculus*), humpback whale (*Megaptera novaeangliae*), and northern right whale (*Eubalaena glacialis*); 2 sperm whales– sperm whale (*Physeter macrocephalus*) and pygmy sperm whale (*Kogia breviceps*); 5 beaked whales (rare in New England waters) - North Sea beaked whale (*Mesoplodon bidens*), True's beaked whale (*Mesoplodon mirus*), dense-beaked whale (*Mesoplodon densirostris*), Atlantic bottle-nosed whale (*Hyperoodon ampullatus*), and goose-beaked whale (*Ziphius cavirostris*); 10 dolphins – bottle-nosed dolphin (*Tursiops truncatus*), gray grampus (*Grampus griseus*), white-beaked dolphin (*Lagenorhynchus albirostris*), white-sided dolphin (*Lagenorhynchus acutus*), striped dolphin (*Stenella coeruleoalba*), common dolphin (*Delphinus delphis*), pilot whale (*Globicephala melaena*), short-finned pilot whale (*Globicephala macrorhynchus*), killer whale (*Orcinus orca*), and harbor porpoise (*Phocoena phocoena*); and 1 narwhal – beluga (*Delphinapterus leucas*). Seals and walruses include harbor seal (*Phoca vitulina concolor*), gray seal (*Halichoerus grypus*), harp seal (*Pagophilus groenlandicus*) and hooded seal (*Cystophora cristata*).

Marine Reptiles

The families *Cheloniidae* and *Dermochelyidae* contain the modern marine turtles. The majority of marine turtles are distributed unevenly through all three tropical oceans, but three have relatively restricted distributions. The five sea turtle species found in the Gulf of Maine includes:

the green sea turtle (*Chelonia mydas*), Atlantic Ridley, loggerhead, leatherback, and hawksbill (*Eretmochelys imbricate*).

3.2 LOW AND DECLINING POPULATIONS

In the previous section of this chapter, we discussed the abundance and distribution of Maine's fauna to the best of our knowledge. In this section, we describe the process for prioritizing species based on potential for state extirpation and conservation need. The results of this effort for birds, herpetofauna, invertebrates, inland fish, mammals (non-marine) and marine (diadromous fish, listed whales, and listed turtles) are depicted in Tables 10-15 respectively.

Species Priorities

Agency species specialists, with review and input from a CWCS Working Group (Chapter 8.1), examined each species (excepting lesser known invertebrate taxa) in light of the guidelines listed below and criteria in Table 8, and assigned species to one of four priority categories. Based upon this analysis, all Priority 1 and 2 species were designated as SGCN, and are identified in Tables 10-15. Note: these tables also list Priority 3 species – species with a low to moderate potential for state extirpation, yet, there are some remaining concerns regarding restricted distribution, status, and/or extreme habitat specialization.

Priority 1 (Very High) = High potential for state extirpation without management intervention and/or protection.

Generally, Priority 1 species:

1. Have current (or proposed) state or federal listing status, or are endemic to the Northeast; and are
2. Identified as regional (Therres 1999, Clark and Niles 2000, Tudor 2002, Rosenberg 2004) or global/continental (Carter et al. 2000, Brown et al. 2001, Kushlan et al. 2002, Rich et al. 2004, NatureServe 2005) species of concern.

Priority 1 designation is not intended for regionally or globally secure species whose rarity in Maine is strictly due to edge of range status.

Priority 2 (High) = Moderate to high potential for state extirpation without management intervention and/or protection.

Generally, Priority 2 species include:

1. Species believed to have a moderate to high potential for state extirpation based on one or more of the following data sources (see details on attached tables):
 - a. State or Federal listing (Appendices 4D-4F)
 - b. Northeast Wildlife Diversity Technical Committee (NEWDTC) (Therres 1999),

- c. Partners In Flight (PIF) Tier I or II (Rosenberg 2004),
 - d. NatureServe (NatureServe 2005) – For invertebrates: G2 (for unstudied taxa) or G3-G5 (for well-studied taxa where warranted by extreme habitat threat and/or low number of occurrences),
 - e. American Fisheries Society (AFS) (Williams et al. 1993),
 - f. Newly available Maine atlas/survey data.
2. Species that are apparently state secure but for which Maine holds high regional or global responsibility (e.g. regional endemics or large portion of global range in Maine),
 3. Species for which risk of extirpation is possible (e.g. few occurrences) but insufficient data exist to conclusively assign Priority 1 status, and/or
 4. Species currently listed as state Historical or Extirpated that have some reasonable probability of rediscovery with further survey effort.

Priority 3 (Moderate) = Low to moderate potential for state extirpation, YET, there are some remaining concerns regarding restricted distribution, status, and/or extreme habitat specialization.

Generally Priority 3 species include:

1. Species believed to have a low to moderate potential for state extirpation based on one or more of the following data sources:
 - a. State or Federal listing (Appendices 4D-4F),
 - b. NEWDTC (Therres 1999),
 - b. PIF (Rosenberg 2004),
 - c. NatureServe (2005) – For invertebrates: G3 (for unstudied taxa) or G4-G5 (for well-studied taxa where warranted by extreme habitat threat and/or low number of occurrences),
 - d. AFS (Williams et al. 1993),
 - e. Newly available Maine atlas/survey data.
2. Species currently listed as Historical or Extirpated that have little or no probability of rediscovery with further survey effort, and for which reintroduction remains the only likely option for recovery.

Priority 4 (Low) = Minimal conservation concerns identified at state, regional, or global scales.

These species are not listed in Tables 10-15.

Species Habitats

We also identified the primary habitats used by priority species based on a hierarchical system of 21 habitat types nested within three broad ecosystems (Table 9). These primary habitats are identified in Tables 10-15 and discussed in greater detail in Tables 30-35 (Chapter 5). *Note: for birds, the classifications Freshwater Lakes and Ponds, and Rivers and Streams are combined.*

Table 8. Criteria for species prioritization.	
SOURCE	CRITERIA
State Endangered Species and Special Concern Lists	(Appendix 4)
H	Historical
EX	Extirpated
E	Endangered
T	Threatened
SC	Special Concern
P	Proposed Status (PSC, PE, PT)
()	Current Status Questioned
Federally Listed Species	(http://www.fws.gov/endangered/listing/index.html)
FE	Federal Endangered
FT	Federal Threatened
FSC	Federal Special Concern
North American Waterfowl Management Plan	(USFWS and CWS 1986, USFWS et al. 2004)
Continental Priority (CP)	High or Highest
Breeding: Geographic Importance (BGI)	High or Highest
Breeding: Conservation Need (BCN)	High or Highest
Nonbreeding: Geographic Importance (NGI)	High or Highest
Nonbreeding: Conservation Need (NCN)	High or Highest
Partners in Flight	(Rosenberg 2004)
Tier I	High Continental Importance
Tier Iia	High Regional Priority
Tier Iib	High Regional Responsibility
Tier Iic	High Regional Threats
MDIFW Shorebird Management System	(Tudor 2002)
Priority 5 Species	Highly Imperiled Species
Priority 4 species	Species of High Concern
North American Waterbird Conservation Plan	(Kushlan et al. 2002)
	Focal Species for Gulf of Maine Subregion
Northeast Wildlife Diversity Technical Committee	(Therres 1999)
X	Regional Conservation Concern
XX	Regional Conservation Concern AND Federal Listing Consideration
Risk	Declining pop or high risk of extirpation from northeast (required for Priority I species)

SOURCE	CRITERIA
Data	Lack of data with suspicion of risk of disappearing from region
Area	Northeast comprises significant portion of species' global range
Spec	Special Cases
NatureServe	http://www.natureserve.org/explorer
G1	~1-5 populations globally; Generally local endemic
G2	~ 6-20 populations globally; Generally state or regional endemic
G3	~ 21-100 populations globally; Considered globally rare
GU	Unrankable; possibly in peril
T	Subspecific global rank
"Conservation status of freshwater mussels of the United States and Canada"	(Williams et al. 1993)
E	Endangered
T	Threatened
SC	Special Concern
Job 113	(Appendix 3)
	Birds: Considered Total Score in Prioritization Decision
	Other Species: Considered Biological and Knowledge (minus Item 4 for E&T and game species) scores in prioritization decision
New Survey/Atlas Data	
	Recent surveys from last 10 yrs: generally data were not available during previous listing review

Coastal (C)
Marine Open Water (CO)
Estuaries and Bays (CE)
Rocky Coastline and islands (CC)
Unconsolidated Shore (beaches and mudflats) (CU)
Estuarine Emergent Saltmarsh (CS)
Freshwater Wetlands (W)
Freshwater Lakes and Ponds (WL)*
Emergent Marsh and Wet Meadows (WM)
Forested Wetland (WF)

Table 9. Ecosystems and primary habitats.
Freshwater Wetlands (W) (continued)
Shrub-scrub Wetland (WS)
Peatlands (WP)
Rivers and Streams (WR)*
*Combined for Birds
Upland (U)
Deciduous and Mixed Forest (UD)
Coniferous Forest (UC)
Dry Woodland and Barrens (<60% canopy cover) (UB)
Mountaintop Forest (incl. krummholz) (UM)
Alpine (summits & tablelands above treeline) (UA)
Shrub / Early Successional (incl. regenerating forest) (US)
Grassland / Agricultural / Old Field (shrubs <50%) (UG)
Urban / Suburban (UU)
Cliff face and Rocky Outcrop (incl. talus) (UR)
Caves and Mines (UCM)

Table 10. Prioritization of Bird Species.

Species	Priority ¹	Eco-system	Habitat Type(s) ²	Prioritization Source							
				State ³	Federal ⁴	NAWMP ⁵	PIF ⁶	Shorebird ⁷	MANEM	NEWDTC ⁸	Staff Rec. ⁹
American Oystercatcher	1	Coastal	CC; CU					NA 5; ME 5			
Bicknell's Thrush	1	Uplands	UM	SC	FSC		I			**R, D	
Black Tern	1	Wetlands	WM; WL	E	FSC				Focal Spp.	R	
Blue-winged Warbler	1	Uplands Wetlands	US WS				I				
Least Tern	1	Coastal	CU; CS; CE	E					Focal Spp.	R, D	
Peregrine Falcon	1	Uplands	UR	E	FD						
Piping Plover	1	Coastal	CU	E	FT			NA 5; ME 5			
Roseate Tern	1	Coastal	CC; CE	E	FE				Focal Spp.		
Saltmarsh Sharp-tailed Sparrow	1	Coastal	CS	SC			I M			D, A	
Sedge Wren	1	Wetlands Uplands	WM UG	E			IIC			R, D	
Short-eared Owl	1	Uplands Coastal Wetlands	UG; UB CS WM	SC			I			R, D	
Upland Sandpiper	1	Uplands	UB; UG	T			IIA&C	NA 4; ME 5		R	
American Bittern	2	Wetlands Uplands	WM; WS UG						Focal Spp.	R, D	
American Black Duck	2	Coastal Wetlands	CE; CS WM; WL; WF			CP: High					
American Coot (breeding)	2	Wetlands	WM	SC							
American Pipit (breeding)	2	Uplands	UA	E							
American Three-toed Woodpecker	2	Uplands	UC	SC							
American Woodcock	2	Uplands Wetlands	US; UD WS				Ila	NA 4			
Arctic Tern	2	Coastal	CC; CO; CE	T					Focal Spp.		
Atlantic Puffin	2	Coastal	CC; CO	T					Focal Spp.		
Bald Eagle	2	Coastal Wetlands	CC; CE WL; WR	T	FT						
Baltimore Oriole	2	Uplands	UD				IIA				

Table 10. Prioritization of Bird Species.

Species	Priority ¹	Eco-system	Habitat Type(s) ²	Prioritization Source							
				State ³	Federal ⁴	NAWMP ⁵	PIF ⁶	Shorebird ⁷	MANEM	NEWDTC ⁸	Staff Rec. ⁹
Barn Swallow	2	Wetlands Uplands	WL; WM UG; UU								TH1
Barred Owl	2	Uplands	UC; UD				M				
Barrow's Goldeneye	2	Wetlands Coastal	WR CE	SC							
Bay-breasted Warbler	2	Uplands	UC				I				
Black and White Warbler	2	Uplands	UD				IIA				
Black-billed Cuckoo	2	Uplands	UD; UC; UB				IIA				
Blackburnian Warbler	2	Uplands	UC				IIC				
Black-crowned Night Heron	2	Coastal Wetlands	CS; CC WM	SC							
Black-throated Blue Warbler	2	Uplands	UD				IIA				
Black-throated Green Warbler	2	Uplands	UD; UC				IIB				
Blue-gray Gnatcatcher	2	Uplands	US								TH4
Bobolink	2	Uplands Wetlands	UG; UB WM				IIA&C				
Bonaparte's Gull (breeding)	2	Wetlands	WL								TH4
Brown Thrasher	2	Uplands	US; UB				IIA				
Canada Warbler	2	Uplands Wetlands	UD WF				I			R, A	
Cape May Warbler	2	Uplands	UC				IIA				
Cattle Egret	2	Coastal	CC; CS								BA2
Chestnut-sided Warbler	2	Uplands	US				IIA				
Chimney Swift	2	Uplands	UU; UD				IIA&C				
Common Eider	2	Coastal	CC; CE; CO			CP: High					
Common Loon	2	Wetlands Coastal	WL CE; CO						Focal Spp.		
Common Moorhen	2	Wetlands	WM	SC							
Common Murre	2	Coastal	CC; CO	EX							BA
Common Nighthawk	2	Uplands	US; UB; UU				M				
Common Tern	2	Coastal Wetlands	CC; CE WL	SC					Focal Spp.	D, S	
Eastern Kingbird	2	Uplands	US				IIA				

Table 10. Prioritization of Bird Species.

Species	Priority ¹	Eco-system	Habitat Type(s) ²	Prioritization Source							
				State ³	Federal ⁴	NAWMP ⁵	PIF ⁶	Shorebird ⁷	MANEM	NEWDTC ⁸	Staff Rec. ⁹
Eastern Meadowlark	2	Uplands	UG	SC							
Eastern Screech-Owl	2	Uplands	UD; UU	SC							
Eastern Towhee	2	Uplands	US; UB				IIA				
Field Sparrow	2	Uplands	UG; US				IIA				
Glossy Ibis	2	Coastal	CC; CS								BA2
Golden Eagle	2	Uplands Wetlands Coastal	UR WR CE	E						S	
Grasshopper Sparrow	2	Uplands	UG; UB	E			IIC				
Great Blue Heron	2	Coastal Wetlands	CU; CC WL; WM						Focal Spp.		BA1
Great Cormorant (breeding)	2	Coastal	CC; CE	SC							
Great Egret	2	Coastal	CC; CS								BA2
Great-crested Flycatcher	2	Uplands	UD				IIA				
Greater Scaup (non-breeding)	2	Coastal Wetlands	CE WR; WL			CP: High					
Greater Shearwater	2	Coastal	CO						Focal Spp.		
Greater Yellowlegs	2	Coastal	CU; CS					NA 4; ME 4			
Harlequin Duck	2	Coastal	CC	T	FSC					**D, S	
Horned Lark (breeding)	2	Uplands	UG								TH3&4
Least Bittern	2	Wetlands	WM	SC					Focal Spp.		
Little Blue Heron	2	Coastal	CC; CS								BA2
Loggerhead Shrike (non-breeding)	2	Uplands	US	SC	FSC					**R	
Long-eared Owl	2	Uplands	UC; UD							D	
Louisiana Waterthrush	2	Wetlands Uplands	WR UD; UC				IIA			R, A	
Marsh Wren	2	Wetlands	WM				IIA				
Nelson's Sharp-tailed Sparrow	2	Coastal Wetlands	CS WM				I M				
Northern Flicker	2	Uplands	UD; UC; UU				IIA				
Northern Parula	2	Uplands	UD				IIB				
Olive-sided Flycatcher	2	Uplands	UC; UD	SC			I				

Table 10. Prioritization of Bird Species.											
Species	Priority ¹	Eco-system	Habitat Type(s) ²	Prioritization Source							Staff Rec. ⁹
				State ³	Federal ⁴	NAWMP ⁵	PIF ⁶	Shorebird ⁷	MANEM	NEWDTC ⁸	
		Wetlands	WS; WP								
Pied-billed Grebe	2	Wetlands	WL; WM							R, D	
Prairie Warbler	2	Uplands	UB				I				
Purple Finch	2	Uplands	UC; UD; UM; UU				IIA				
Purple Martin	2	Wetlands Uplands	WM; WL UG								TH3&4
Purple Sandpiper	2	Coastal	CC					NA 4; ME 4			
Razorbill	2	Coastal	CC; CO	T							
Red Crossbill	2	Uplands	UC								TH3
Red Knot	2	Coastal	CU					NA 5; ME 5		S	
Red-necked Phalarope	2	Coastal	CO; CE	SC				NA 3; ME 5			
Rose-breasted Grosbeak	2	Uplands	UD				IIA				
Ruddy Duck	2	Coastal Wetlands	CE WL								BA
Ruddy Turnstone	2	Coastal	CC; CU					NA 4; ME 4			
Rusty Blackbird	2	Wetlands	WS; WF; WP	SC			I				
Sanderling	2	Coastal	CU					NA 4; ME 4			
Sandhill Crane	2	Wetlands Uplands	WM UG								TH4
Scarlet Tanager	2	Uplands	UD				IIA				
Semipalmated Sandpiper	2	Coastal	CU; CC					NA 4; ME 4			
Snowy Egret	2	Coastal	CC; CS						Focal Spp.		BA2
Tri-colored Heron	2	Coastal	CC; CS								BA2
Veery	2	Uplands	UD				IIA				
Vesper Sparrow	2	Uplands	UB; UG	SC							
Whimbrel	2	Coastal Uplands	CU; CS UB	SC				NA 4; ME 5			
Whip-poor-will	2	Uplands	US; UB; UD				IIA&C &M			R, D	
Willet	2	Coastal	CS; CU					NA 4; ME 4			
Willow Flycatcher	2	Wetlands Uplands	WS US				I				

Table 10. Prioritization of Bird Species.

Species	Priority ¹	Eco-system	Habitat Type(s) ²	Prioritization Source							
				State ³	Federal ⁴	NAWMP ⁵	PIF ⁶	Shorebird ⁷	MANEM	NEWDTC ⁸	Staff Rec. ⁹
Wood Thrush	2	Uplands	UD				I				
Yellow Rail	2	Wetlands	WM	SC							
Yellow-bellied Sapsucker	2	Uplands	UD				IIA				
Yellow-throated Vireo	2	Wetlands Uplands	WR; WF UD				IIA				
American Redstart	3	Uplands	UD								TH1
American Widgeon	3	Wetlands	WM								BA
Atlantic Brant	3	Coastal	CE								BA
Bank Swallow	3	Wetlands Uplands	WL; WR UG								TH2
Black Guillemot	3	Coastal	CC; CE						Focal Spp.		
Black Scoter	3	Coastal	CE								BA
Black-backed Woodpecker	3	Uplands	UC								TH3
Black-bellied Plover	3	Coastal	CU								LT
Blackpoll Warbler	3	Uplands	UC; UM								TH3
Blue-winged Teal	3	Wetlands	WL								BA
Boreal Owl	3	Uplands	UD; UC								TH4
Broad-winged Hawk	3	Uplands	UD; UC				IIA				
Canada Goose (NAP) (non-breeding)	3	Coastal Uplands	CE UG								BA
Carolina Wren	3	Uplands	US; UB; UU								TH3&4
Common Goldeneye	3	Coastal Wetlands	CE WL; WR; WF								BA
Common Yellowthroat	3	Wetlands Uplands	WS US								TH1
Cooper's Hawk	3	Uplands	UD; UC	SC							
Eastern Wood-Pewee	3	Uplands	UD								TH1
Eskimo Curlew	3	Coastal Uplands	CU UB	EX	FE			NA 5			
Evening Grosbeak	3	Uplands	UC; UD								TH1
Fox Sparrow	3	Uplands	US								TH4
Gadwall	3	Wetlands	WM								BA
Great Black-backed Gull	3	Coastal	CC; CE						Focal Spp.		

Table 10. Prioritization of Bird Species.

Species	Priority ¹	Eco-system	Habitat Type(s) ²	Prioritization Source							Staff Rec. ⁹
				State ³	Federal ⁴	NAWMP ⁵	PIF ⁶	Shorebird ⁷	MANEM	NEWDTTC ⁸	
Green Heron	3	Wetlands	WS								BA
Green-winged Teal	3	Wetlands	WM								BA
Herring Gull	3	Coastal	CC; CE						Focal Spp.		
Horned Grebe	3	Coastal	CE						Focal Spp.		
House Wren	3	Uplands	US; UU								TH1
Killdeer	3	Uplands Coastal	UG CU								LT
Laughing Gull	3	Coastal	CC; CE	SC							
Leach's Storm-petrel	3	Coastal	CC; CO; CE	SC					Focal Spp.		
Least Flycatcher	3	Uplands	UD; UC								TH1
Lesser Scaup	3	Coastal	CE								BA
Long-tailed Duck	3	Coastal	CE			NGI & NCN: High					
Mallard	3	Wetlands Coastal Uplands	WM CS UG			CP: High					
Merlin	3	Uplands	UD; UC; UB; UU								TH4
Northern Goshawk	3	Uplands	UD; UC	SC	FSC						
Northern Harrier	3	Wetlands Uplands	WM UG; UB							R	
Northern Pintail	3	Wetlands	WM			CP: High					
Northern Rough-winged Swallow	3	Wetlands Uplands	WR; WL UG								TH3
Northern Shoveler	3	Wetlands	WM								BA
Orchard Oriole	3	Uplands	US	SC							
Ovenbird	3	Uplands	UD								TH2
Palm Warbler	3	Wetlands	WP; WF								TH3
Pine Grosbeak (breeding)	3	Uplands	UC								TH3
Red-bellied Woodpecker	3	Uplands Wetlands	UD; UC WR; WF								TH4
Red-breasted Merganser (breeding)	3	Wetlands	WR								BA

Table 10. Prioritization of Bird Species.

Species	Priority ¹	Eco-system	Habitat Type(s) ²	Prioritization Source							Staff Rec. ⁹
				State ³	Federal ⁴	NAWMP ⁵	PIF ⁶	Shorebird ⁷	MANEM	NEWDTC ⁸	
Red-headed Woodpecker	3	Uplands	UD								TH4
Red-shouldered Hawk	3	Wetlands Uplands	WF UD								TH3
Red-throated Loon	3	Coastal	CO; CE						Focal Spp.		
Ring-necked Duck	3	Wetlands	WL; WM								BA
Ruffed Grouse	3	Uplands	UD; US				IIA				
Short-billed Dowitcher	3	Coastal	CU; CS								LT
Solitary Sandpiper	3	Wetlands	WF; WP								LT
Sora	3	Wetlands	WM								TH3
Spruce Grouse	3	Uplands	UC								AW
Surf Scoter	3	Coastal	CE			NGI & NCN: High					
Tennessee Warbler	3	Uplands Wetlands	UC WS; WF								TH1
Tree Swallow	3	Uplands	UG; UU; UD								TH1
Virginia Rail	3	Wetlands	WM				IIA				
White-throated Sparrow	3	Uplands	US								TH1
White-winged Crossbill	3	Uplands	UC								TH3
White-winged Scoter	3	Coastal	CE								BA
Yellow Warbler	3	Uplands Wetlands	UD; US; UU WS								TH1
Yellow-billed Cuckoo	3	Uplands	UD; US								TH3&4

¹Priority Ranks: Highest Priority =1, High Priority = 2, and Moderate Priority = 3

²Habitat Types: CO=Marine Open Water, CE=Estuaries and Bays, CC=Rocky Coastline and Islands, CU=Unconsolidated Shore, CS=Estuarine Emergent Saltmarsh; WL=Lakes and Ponds, WM=Emergent Marsh and Wet Meadows, WF=Forested Wetland, WS=Shrub-scrub Wetland, WP=Peatlands, WR=Rivers and Streams; UD=Deciduous and Mixed Forest, UC=Coniferous Forest, UB=Dry Woodlands and Barrens, UM=Mountaintop Forest, UA=Alpine, US=Shrub/Early Successional Habitat, UG=Grasslands/Agricultural/Old Field, UU=Urban/Suburban, UR=Cliff Face and rocky outcrop; UCM= caves and mines; Note: Bold face codes denote habitat type in Table 30 where conservation strategies are discussed.

³State Endangered/Threatened/special concern lists: H=Historical, EX=Extirpated, E=Endangered, T=Threatened, SC=Special Concern, ()=current status questioned.

⁴Federal Listing Status: FE= Federal Endangered, FT=Federal Threatened, FSC=Federal Special Concern, D=Federal Delisted

- ⁵ North American Waterfowl Management Plan priorities: CP=Continental Priority, BGI=Geographic Importance for Breeding Populations, BCN=Conservation Need for Breeding Populations, NGI=Geographic Importance for Nonbreeding Populations, NCN=Conservation Need for Nonbreeding Populations.
- ⁶ Partners In Flight priorities: Tier I=High Continental Importance, Tier IIA=High Regional Priority, Tier IIB=High Regional Responsibility, Tier IIC=High Regional Threats, M=Focal Species Targeted for Monitoring by Northeast Partners in Flight Working Group.
- ⁷ Shorebird priorities: NA=North Atlantic Region, ME=Maine, Priority 5=Highly Imperiled Species, Priority 4=Species of High Concern, Priority 3=Species of Moderate Concern.
- ⁸ Northeast Wildlife Diversity Technical Committee Species of Regional Conservation Concern - Rationale for Listing: R=Declining population or high risk of extirpation from northeast, D=Lack of data with suspicion of risk of disappearing from region, A=Northeast comprises significant portion of species' global range, S=Special cases, Note: **=also warrants federal listing consideration.
- ⁹ Recommended by Bird Group staff: BA= Brad Allen, LT=Lindsay Tudor, AW=Andy Weik, TH= Tom Hodgman. Note: TH1 – Prolonged declines: species exhibiting significant ($P \leq 0.10$, $n \geq 14$) long-term (since 1966) and short-term (since 1980) population declines according to the North American Breeding Bird Survey (BBS), TH2 – Declining species: species exhibiting significant ($P \leq 0.10$, $n \geq 14$) long-term (since 1966) or short-term (since 1980) population declines according to the BBS, TH3 – Trend unknown: species distribution too sparse or irregular for effective monitoring using current methods, TH4 – Status unclear: Species distribution or breeding status in Maine is uncertain or poorly documented.

Table 11. Prioritization of Herpetofauna Species.								
Species	Priority¹	Eco-System	Habitat Type(s)²	Prioritization Source				
				State³	Federal⁴	NEWDTCC⁵	NatureServe (G1-G3; GU)⁶	New Data⁷
AMPHIBIANS								
Salamanders								
Blue-spotted Salamander	2	Wetlands Uplands	WS ; WF UD; UC; US			X		High vulnerability to habitat loss/degradation; high regional responsibility
Four-toed Salamander	3	Wetlands Uplands	WF; WS ; WP UD; UC	SC				High vulnerability to habitat loss/degradation
Northern Spring Salamander	3	Wetlands Uplands	WR UD; UC	SC				
Frogs								
Northern Leopard Frog	3	Wetlands	WL; WM	(SC)		X		
REPTILES								
Turtles								
Blanding's Turtle	1	Wetlands Uplands	WS ; WL; WM; WF; WR UD; UC; UB; US; UG	E	FSC	XX		High vulnerability to habitat loss/degradation
Eastern Box Turtle	1	Uplands Wetlands	UD ; US; UG WM; WF; WR	E		X		Possibly extirpated
Spotted Turtle	2	Wetlands Uplands	WS ; WL; WM; WF; WR UD; UC; UB; US; UG	T		X		High vulnerability to habitat loss/degradation
Wood Turtle	2	Wetlands Uplands	WR ; WF; WS UD; UC; US; UG	SC		XX		
Common Musk Turtle	3	Wetlands	WL; WR	SC				
Snakes								
Northern Black Racer	2	Uplands	UB ; US; UG; UR	E				High vulnerability to habitat loss/degradation
Timber Rattlesnake	2	Uplands	UB ; US; UG; UR	EXT		XX		Probably extirpated

Table 11. Prioritization of Herpetofauna Species.								
Species	Priority¹	Eco-System	Habitat Type(s)²	Prioritization Source				
				State³	Federal⁴	NEWDTCC⁵	NatureServe (G1-G3; GU)⁶	New Data⁷
Eastern Ribbon Snake	3	Wetlands Uplands	WL; WF; WS; WP UD; UC; UB; US; UG	SC		X		High vulnerability to habitat loss/degradation
Northern Ribbon Snake	3	Wetlands Uplands	WL; WF; WS; WP UD; UC; UB; US; UG	SC				High vulnerability to habitat loss/degradation
Northern Brown Snake	3	Uplands	UD; US; UG; UU	SC				

¹Priority Ranks: Highest Priority =1, High Priority = 2, and Moderate Priority = 3

²Habitat Types: CO=Marine Open Water, CE=Estuaries and Bays, CC=Rocky Coastline and Islands, CU=Unconsolidated Shore, CS=Estuarine Emergent Saltmarsh; WL=Lakes and Ponds, WM=Emergent Marsh and Wet Meadows, WF=Forested Wetland, WS=Shrub-scrub Wetland, WP=Peatlands, WR=Rivers and Streams; UD=Deciduous and Mixed Forest, UC=Coniferous Forest, UB=Dry Woodlands and Barrens, UM=Mountaintop Forest, UA=Alpine, US=Shrub/Early Successional Habitat, UG=Grasslands/Agricultural/Old Field, UU=Urban/Suburban, UR=Cliff Face and rocky outcrop; UCM= caves and mines; Note: Bold face codes denote habitat type in Table 31 where conservation strategies are discussed.

³State Endangered/Threatened/special concern lists: H=Historical, EX=Extirpated, E=Endangered, T=Threatened, SC=Special Concern, P=proposed status, ()=current status questioned.

⁴Federal Listing Status: FE=Federal Endangered, FT=Federal Threatened, FSC=Federal Special Concern.

⁵Northeast Wildlife Diversity Technical Committee Species of Regional Conservation Concern: X=of regional conservation concern in the Northeastern United States, XX= warrants federal endangered or threatened species listing considerations.

⁶NatureServe: G1=~1-5 populations globally; generally local endemic, G2=~ 6-20 populations globally; generally state or regional endemic, G3=~ 21-100 populations globally; considered globally rare, GU=Unrankable; possibly in peril, T= Subspecific global rank, Q=taxonomy uncertain, ?=rank uncertain.

⁷New Data: Recent surveys from last 10 yrs: generally data were not available during previous listing review.

Table 12. Prioritization of Invertebrate Species.								
Species	Priority ¹	Eco-Systems	Habitat Type(s) ²	Prioritization Source				
				State ³	Federal ⁴	NEWDTCS ⁵	NatureServe (G1-G3; GU) ⁶	New Data ⁷
Snails								
A Spire Snail <i>Amnicola decius</i>	1	Wetlands	WR; WL				G1	
Bigmouth Pondsnaill <i>Stagnicola mighelsi</i>	2	Wetlands	WL; WM; WP				G1G3	NatureServe lists ME as only occurrence
Deep-Throat Vertigo <i>Vertigo nylanderii</i>	2	Wetlands	WP; WF; WS				G2	3-4 ME localities (Woodland Fen, Crystal Bog/1000 Acre Bog) from Brian Coles
Great Lakes Physa <i>Physella magnalacustris</i>	2	Wetlands	WL				G2Q	
Lamellate Supercoil <i>Paravitrea lamellidens</i>	2	Uplands	UD				G2	
Mystery Vertigo <i>Vertigo paradoxa</i>	2	Uplands Wetlands	UD WF	SC			G3G4Q	2 modern ME locales (Crystal Bog, Caribou)
Pleistocene Catinella <i>Catinella exile</i>	2	Uplands Wetlands	U? WP; WF				G2	ID unconfirmed and taxonomy needs work (B. Coles); Coles suggests tracking as <i>Catinella sp. cf exile</i>
Six-whorl Vertigo <i>Vertigo morsei</i>	2	Wetlands	WP				G2G3	1 ME locality (Woodland Fen) from B. Coles; obligate of hyper calcareous fens; declines elsewhere
A Snail <i>Euconulus alderi</i>	3	Wetlands	WM; WF				G3Q	
A Snail <i>Vertigo sp. nov.</i>	3	Wetlands	WS; WP					New species; 1 ME locality (Saco Heath); (not ranked by NatureServe; B. Coles suggests G2)
Delicate Vertigo <i>Vertigo bollesiana</i>	3	Wetlands Uplands	WF; WP UD				G3	Isolated occurrences
Eastern Flat-whorl <i>Planogyra asteriscus</i>	3	Wetlands Uplands	WM; WF UD				G3G4	B. Coles suggests >Priority 3
New England Silt Snail <i>Floridobia winkleyi</i>	3	Wetlands	WM; WR				G3	1 locale
Obese Pondsnaill <i>Stagnicola oronoensis</i>	3	Wetlands	WL; WM; WP				G2G4	
Olive Vertigo <i>Vertigo perryi</i>	3	Wetlands	WF; WM				G3G4	4 ME localities from B. Coles
Freshwater Mussels								

Table 12. Prioritization of Invertebrate Species.								
Species	Priority ¹	Eco-Systems	Habitat Type(s) ²	Prioritization Source				
				State ³	Federal ⁴	NEWDTC ⁵	NatureServe (G1-G3; GU) ⁶	New Data ⁷
Tidewater Mucket <i>Leptodea ochracea</i>	1	Wetlands	WL; WR	T		X		AFS = Special Concern; IUCN = Lower Risk
Yellow Lampmussel <i>Lampsilis cariosa</i>	1	Wetlands	WR; WL	T	FSC	XX	G3G4	AFS = Threatened; IUCN = Endangered
Brook Floater <i>Alasmidonta varicosa</i>	2	Wetlands	WR	SC	FSC	XX	G3	AFS = Threatened
Creeper <i>Strophitus undulatus</i>	3	Wetlands	WL; WR	SC				
Triangle Floater <i>Alasmidonta undulata</i>	3	Wetlands	WL; WR	SC				AFS = Special Concern; common in ME, declining elsewhere
Stoneflies								
A Stonefly <i>Neoperla mainensis</i>	2	Wetlands	WR				G2G3	
A Stonefly <i>Allocapnia illinoensis</i>	3	Wetlands	WR				G3	
A Stonefly <i>Alloperla ideii</i>	3	Wetlands	WR				G3	
A Stonefly <i>Alloperla voinae</i>	3	Wetlands	WR				G3	
A Stonefly <i>Ostocerca prolongata</i>	3	Wetlands	WR				G3	
Gaspe Sallfly <i>Utaperla gaspesiana</i>	3	Wetlands	WR				G3	
Spiny Salmonfly <i>Pteronarcys comstocki</i>	3	Wetlands	WR				G3	
Caddisflies								
A Caddisfly <i>Hydroptila tomah</i>	2	Wetlands	WR; WM; W?				G1G3	New species known only from type locality (Tomah Stream)
A Caddisfly <i>Ochrotrichia denningi</i>	3	Wetlands	W?				G2G4	
A Caddisfly <i>Oxyethira rossi</i>	3	Wetlands	WR; WM; W?				G3G4	
Mayflies								
Roaring Brook Mayfly <i>Epeorus frisoni</i>	1	Wetlands	WR	E			G1	Taxonomy and extant EO confirmed

Table 12. Prioritization of Invertebrate Species.								
Species	Priority ¹	Eco-Systems	Habitat Type(s) ²	Prioritization Source				
				State ³	Federal ⁴	NEWDTC ⁵	NatureServe (G1-G3; GU) ⁶	New Data ⁷
Tomah Mayfly <i>Siphonisca aerodromia</i>	1	Wetlands	WR; WM	T	FSC		G2	
A Mayfly <i>Baetisca rubescens</i>	2	Wetlands	WR				G2	
A Mayfly <i>Nixe horrida</i>	2	Wetlands	WR				G2	
A Mayfly <i>Nixe rusticalis</i>	2	Wetlands	WR				G2	1 locale; new state record
A Mayfly <i>Plauditus veteris</i>	2	Wetlands	WR				G2	
A Mayfly <i>Procloeon mendax</i>	2	Wetlands	WR				G2	
A Mayfly <i>Procloeon ozburni</i>	2	Wetlands	WR				G2	
A Mayfly <i>Procloeon simplex</i>	2	Wetlands	WR				G2	
A Mayfly <i>Siphonurus demaryi</i>	2	Wetlands	WL				G2	
A Mayfly <i>Siphonurus securifer</i>	2	Wetlands	WL				G2	
A Mayfly <i>Ameletus browni</i>	3	Wetlands	WR				G3	
A Mayfly <i>Ameletus tertius</i>	3	Wetlands	WR				G3	
A Mayfly <i>Baetisca berneri</i>	3	Wetlands	WR	SC				
A Mayfly <i>Baetisca carolina</i>	3	Wetlands	WR	SC				
A Mayfly <i>Centroptillum semirufum</i>	3	Wetlands	WR				G3	
A Mayfly <i>Cloeon dipterum</i>	3	Wetlands	WL; WR				G3	
A Mayfly <i>Metretopus borealis</i>	3	Wetlands	WR	SC				

Table 12. Prioritization of Invertebrate Species.								
Species	Priority ¹	Eco-Systems	Habitat Type(s) ²	Prioritization Source				
				State ³	Federal ⁴	NEWDTC ⁵	NatureServe (G1-G3; GU) ⁶	New Data ⁷
A Mayfly <i>Procladius intermedius</i>	3	Wetlands	WR				G3	
A Mayfly <i>Rhithrogena brunneotincta</i>	3	Wetlands	WR	SC			G3	
A Mayfly <i>Rhithrogena uhari</i>	3	Wetlands	WR				G3	
A Mayfly <i>Siphonurus barbaroides</i>	3	Wetlands	WL				G3	
Butterflies								
Clayton's Copper <i>Lycaena dorcas claytoni</i>	1	Wetlands Uplands	WP ; WS US	E	FSC		G5T1	~11 modern sites; habitat uncommon; regional endemic
Hessel's Hairstreak <i>Callophrys hesseli</i>	1	Wetlands	WF ; WP	E			G3G4	Only 4 sites; habitat rare
Katahdin Arctic <i>Oeneis polixenes katahdin</i>	1	Uplands	UA	E			G5T1	Only 1 site; endemic
Cobweb Skipper <i>Hesperia metea</i>	2	Uplands	UG ; UB	PSC				3 historic locales; vulnerable habitat
Coral Hairstreak <i>Satyrium titus</i>	2	Uplands	UG	PSC				Only 2 modern sites
Crowberry Blue <i>Plebejus idas empetri</i>	2	Wetlands	WP	SC			G5T3T4	Regional endemic
Early Hairstreak <i>Erora laeta</i>	2	Uplands	UD	PSC			G3G4	No modern records; probably overlooked
Edwards' Hairstreak <i>Satyrium edwardsii</i>	2	Uplands	UB	E				Only 5 modern sites; habitat rare
Frigga Fritillary <i>Boloria frigga</i>	2	Wetlands	WP	PSC				1 locale; new state record
Greenish Blue <i>Plebejus saepiolus amica</i>	2	Uplands	UG	PSC				Widely distributed historically; no modern records
Juniper Hairstreak <i>Callophrys gryneus</i>	2	Uplands	UG ; US; UR	(SC) PE				Only 2 modern sites; habitat rare
Leonard's Skipper <i>Hesperia leonardus</i>	2	Uplands	UG ; UB	PSC				Only 1 modern locale; habitat vulnerable
Purple Lesser Fritillary <i>Boloria chariclea grandis</i>	2	Uplands	UC	PSC				2 locales; habitat rare

Table 12. Prioritization of Invertebrate Species.								
Species	Priority ¹	Eco-Systems	Habitat Type(s) ²	Prioritization Source				New Data ⁷
				State ³	Federal ⁴	NEWDTC ⁵	NatureServe (G1-G3; GU) ⁶	
Sleepy Duskywing <i>Erynnis brizo</i>	2	Uplands	UB	PSC				~5 modern locales; habitat at risk
Spicebush Swallowtail <i>Papilio troilus</i>	2	Uplands	UD	SC				2 historic locales; possible strays?; habitat rare
Appalachian Brown <i>Satyrodes appalachia</i>	3	Wetlands	WF	PSC				2 locales; habitat common
Bog Elfin <i>Callophrys lanoraieensis</i>	3	Wetlands Uplands	WP UC	(SC)			G3G4	>35 locales; habitat common
Bog Fritillary <i>Boloria eunomia dawsoni</i>	3	Wetlands	WP	(SC)				>15 locales; habitat common
Delaware Skipper <i>Anatrytone logan</i>	3	Wetlands Uplands	WM; WP UB; UG	PSC				~ 8 locales; habitat vulnerable
Frosted Elfin <i>Callophrys irus</i>	3	Uplands	UB	EX			G3	Extirpated
Karner Blue <i>Plebejus melissa samuelis</i>	3	Uplands	UB	EX	E		G5T2	Extirpated
Little Glassywing <i>Pompeius verna</i>	3	Wetlands Uplands	WM UG	PSC				2 locales; new state record; southern
Persius Duskywing <i>Erynnis p. persius</i>	3	Uplands	UB	EX			G5T2T3	Extirpated
Regal Fritillary <i>Speyeria idalia</i>	3	Uplands	UG	EX	FSC		G3	Extirpated
Satyr Comma <i>Polygonia satyrus</i>	3	Wetlands Uplands	WF UD; UC	PSC				2 locales; habitat common in northern ME
Tawny Crescent <i>Physiodes batesii</i>	3	Uplands	UG	EX			G4T1	Extirpated
Western Pine Elfin <i>Callophrys eryphon</i>	3	Uplands	UD; UC	SC				~5 modern locales; habitat common
Western Tailed Blue <i>Cupido amyntula maritima</i>	3	Uplands	UG	PSC				1 locale; new state record
Moths								
Twilight Moth <i>Lycia rachelae</i>	1	Uplands	UB	T				High regional significance
A Moth <i>Cucullia speyeri</i>	2	Uplands	UB	PSC				Historic record(s); moderate chance of rediscovery (D. Schweitzer)

Table 12. Prioritization of Invertebrate Species.								
Species	Priority ¹	Eco-Systems	Habitat Type(s) ²	Prioritization Source				
				State ³	Federal ⁴	NEWDTC ⁵	NatureServe (G1-G3; GU) ⁶	New Data ⁷
A Moth <i>Nepytia pellucidaria</i>	2	Uplands	UB; UC	PSC			GU	1 modern record; extirpated from much of region (D.S.)
A Noctuid Moth <i>Chaetagnalea cerata</i>	2	Uplands	UB	SC			G3G4	Historic records only; good chance of presence (D. S.)
Barrens Itame <i>Itame sp. 1</i>	2	Uplands	UB	SC			G3	
Graceful Clearwing <i>Hemaris gracilis</i>	2	Uplands Wetlands	UB WP	PSC			G3G4	Historic record(s); probability of occurrence near 100% (R. Webster)
Pine Barrens Zale <i>Zale sp. 1 nr. lunifera</i>	2	Uplands	UB	SC			G3Q	
Pine Barrens Zanclognatha <i>Zanclognatha martha</i>	2	Uplands	UB	T				
Pine Devil <i>Citheronia sepulcralis</i>	2	Uplands	UC; UB	SC				Historic records only; <i>Compsilura</i> victim; tethered female inventory needed (D.S)
Pine Pinion <i>Lithophane l. lepida</i>	2	Uplands	UB; UC	SC			G4T3T4	Rank as Priority 2 (R.W.)
Pink Sallow <i>Psectraglaea carnosae</i>	2	Uplands	UB	PSC			G3	Recent records exist
Precious Underwing <i>Catocala p. pretiosa</i>	2	Wetlands	WF	(SC) PEX			G4T2T3	No 20 th / 21 st century records
The Buckmoth <i>Hemileuca m. maia</i>	2	Uplands	UB	SC				Historic records and a sight record by D. Schweitzer in 80's
A Moth <i>Lepipolys perscripta</i>	3	Uplands	UB	PSC				Historic record(s)
A Moth <i>Syngrapha altera</i>	3	Wetlands Uplands	WP UB				G3G4	Probably common in northern ME (R.W.)
A Moth <i>Syngrapha cryptica</i>	3	Uplands	UC?				G3G4	Core of range; probably common in northern ME (R.W.)
A Moth <i>Syngrapha selecta</i>	3	Uplands	U?				G3G4	Peripheral from the north; probably common w/ blueberry (R.W.)
A Noctuid Moth <i>Apamea mixta</i>	3	Wetlands	WP				GU	
A Noctuid Moth <i>Chortodes defecta</i>	3	Wetlands	W?				G3G4	

Table 12. Prioritization of Invertebrate Species.								
Species	Priority ¹	Eco-Systems	Habitat Type(s) ²	Prioritization Source				
				State ³	Federal ⁴	NEWDTC ⁵	NatureServe (G1-G3; GU) ⁶	New Data ⁷
A Notodontid Moth <i>Furcula modesta</i>	3	Uplands	UD				G3G4	
A Seed Borer <i>Rhodoecia aurantiago</i>	3	Uplands	UD; UB	PSC				Historic record(s); peripheral from south; need more info on food plants (D.S.)
Acadian Swordgrass Moth <i>Xylena thoracica</i>	3	Uplands	UB	SC				Probably common in northern ME (R.W.)
Annointed Sallow Moth <i>Pyreffera ceromatica</i>	3	Uplands	UD	PEX	FSC		GU	Extirpated; no chance of rediscovery
Barrens Metarranthis Moth <i>Metarranthis apiciaria</i>	3	Uplands	U?				GU	Unexplained declines
Broad Sallow <i>Xylotype capax</i>	3	Wetlands Uplands	WP UB	SC				
Chestnut Clearwing <i>Synanthedon castaneae</i>	3	Uplands	UD	EX	FSC		G3G5	Extirpated; no chance of rediscovery
Culvers Root Borer <i>Papaipema sciata</i>	3	Uplands Wetlands	UD; UG WM; WS				G3G4	Two old specimens, possibly mislabeled (D.S.)
Huckleberry Sphinx <i>Paonias astylus</i>	3	Uplands	UB; US	SC				
Oblique Zale <i>Zale obliqua</i>	3	Uplands	UB	SC				
Red-winged Sallow <i>Xystocephalus rufago</i>	3	Uplands	UB	SC				
Similar Underwing <i>Catocala similis</i>	3	Uplands	UB	SC				
Southern Pine Sphinx <i>Lapara coniferarum</i>	3	Uplands	UC; UB	SC				Question existence in ME (R.W.)
Spartina Borer Moth <i>Spartiniphaga inops</i>	3	Coastal	CS	PSC			G3	Historic record(s)
Thaxter's Pinion Lithophane thaxteri	3	Wetlands Uplands	WP UB	(SC)				Probably >200 Elements of Occurrence in ME (D. S.)
Trembling Sallow <i>Chaetoglaea tremula</i>	3	Uplands	UB	SC				
Damselflies & Dragonflies								
Rapids Clubtail <i>Gomphus quadricolor</i>	1	Wetlands	WR	PT			G3G4	Only Saco River

Table 12. Prioritization of Invertebrate Species.								
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Ringed Boghaunter <i>Williamsonia lintneri</i>	1	Wetlands	WS; WF	E	FSC		G3	13 sites; southern
Spatterdock Darner <i>Rhionaeschna mutata</i>	1	Wetlands	WL; WM	PSC			G3G4	Only 1 pond; southern
Arrow Clubtail <i>Stylurus spiniceps</i>	2	Wetlands	WR	PT				Only Sandy and Little Androscoggin Rivers; central
Arrowhead Spiketail <i>Cordulegaster obliqua</i>	2	Wetlands	WR	PSC				Only 2 modern sightings; central
Big Bluet <i>Enallagma durum</i>	2	Wetlands Coastal	WL; WR CS	PT				Only 2 sites on Mount Desert Island
Boreal Snaketail <i>Ophiogomphus colubrinus</i>	2	Wetlands	WR	PSC				Only 2 rivers (modern); southern
Canada Whiteface <i>Leucorrhinia patricia</i>	2	Wetlands	WP	PSC				Only 1 site; northwest; cryptic
Citrine Forktail <i>Ischnura hastata</i>	2	Coastal Wetlands	CS WL; WM	PSC				Few modern records; southern
Cobra Clubtail <i>Gomphus vastus</i>	2	Wetlands	WR	PT				Only 3 rivers; statewide?
Dusky Dancer <i>Argia translata</i>	2	Wetlands	WL; WR	PSC				4 ponds; central
Pygmy Snaketail <i>Ophiogomphus howei</i>	2	Wetlands	WR	(T) PSC	FSC		G3	8 rivers; statewide?
Quebec Emerald <i>Somatochlora brevicincta</i>	2	Wetlands	WP	PSC			G3	6 sites; northern
Rambur's Forktail <i>Ischnura ramburii</i>	2	Wetlands Coastal	WL; WM CS	PSC				Only 2 sites; eastern; cryptic
Scarlet Bluet <i>Enallagma pictum</i>	2	Wetlands	WL	PSC			G3	12 ponds; southern
Sedge Darner <i>Aeshna juncea</i>	2	Wetlands	WM; WP	PSC				Only 1 site; northern
Southern Pygmy Clubtail <i>Lanthus vernalis</i>	2	Wetlands	WR	PSC				7 streams; statewide
Swamp Darner <i>Epiaeschna heros</i>	2	Wetlands	WF; WS	PSC				Only 1 modern record (no voucher)

Table 12. Prioritization of Invertebrate Species.								
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				State ³	Federal ⁴	NEWDTCS ⁵	NatureServe (G1-G3; GU) ⁶	New Data ⁷
Tule Bluet <i>Enallagma carunculatum</i>	2	Wetlands	WL; WR	PSC				Only 3 modern sites; northern/eastern
Black Saddlebags <i>Tramea lacerata</i>	3	Wetlands	WL; WM; WF; WS	PSC				Only 4 sites; vagrant?
Broadtailed Shadowdragon <i>Neurocordulia michaeli</i>	3	Wetlands	WR	PSC			G2	27 rivers; statewide
Brook Snaketail <i>Ophiogomphus aspersus</i>	3	Wetlands	WR				G3G4	39 rivers; statewide
Carolina Saddlebags <i>Tramea carolina</i>	3	Wetlands	WL; WF; WS	PSC				Only 2 sightings; coastal; vagrant?
Comet Darner <i>Anax longipes</i>	3	Wetlands	WL	PSC				Only 2 ponds; vagrant?
Common Sanddragon <i>Progomphus obscurus</i>	3	Wetlands	WL; WR	PSC				7 sites; southern
Ebony Boghaunter <i>Williamsonia fletcheri</i>	3	Wetlands	WF; WS; WP	(SC)			G3G4	~35 sites; statewide
Extra-striped Snaketail <i>Ophiogomphus anomalus</i>	3	Wetlands	WR	SC	FSC		G3	28 rivers; statewide
Little Bluet <i>Enallagma minusculum</i>	3	Wetlands	WL				G3G4	70+ sites; southern/central
Needhams Skimmer <i>Libellula needhami</i>	3	Coastal Wetlands	CS WL	PSC				Only 1 pond; vagrant?
New England Bluet <i>Enallagma laterale</i>	3	Wetlands	WL	SC	FSC		G3	25 ponds; southern/coastal
Spine-crowned Clubtail <i>Gomphus abbreviatus</i>	3	Wetlands	WR				G3G4	23 rivers; statewide
Variagated Meadowhawk <i>Sympetrum corruptum</i>	3	Wetlands	WL; WF; WS	PSC				Only 2 sites; coastal; vagrant?
Beetles								
American Burying Beetle <i>Nicrophorus americanus</i>	2	Uplands	UD; UG	EXT	E		G2G3	
White Mountain Tiger Beetle <i>Cicindela ancocisconensis</i>	3	Wetlands	WR				G3	

¹Priority Ranks: Highest Priority =1, High Priority = 2, and Moderate Priority = 3 [NOTE: In taxa where the status of most species has not been assessed by MDIFW (stoneflies, snails, caddisflies, mayflies, beetles), the Priority Rank (P) of a species primarily mirrors its G-rank. For example, G1 species were assigned P1, G2 species were assigned P2, etc. Species with a G-rank range were assigned a priority rank based on the rounded G-rank (e.g. G1G2 = P1, G1G3 = P2).]

²Habitat Types: CO=Marine Open Water, CE=Estuaries and Bays, CC=Rocky Coastline and Islands, CU=Unconsolidated Shore, CS=Estuarine Emergent Saltmarsh; WL=Lakes and Ponds, WM=Emergent Marsh and Wet Meadows, WF=Forested Wetland, WS=Shrub-scrub Wetland, WP=Peatlands, WR=Rivers and Streams; UD=Deciduous and Mixed Forest, UC=Coniferous Forest, UB=Dry Woodlands and Barrens, UM=Mountaintop Forest, UA=Alpine, US=Shrub/Early Successional Habitat, UG=Grasslands/Agricultural/Old Field, UU=Urban/Suburban, UR=Cliff Face and rocky outcrop; UCM= caves and mines; Note: Bold face codes denote habitat type in Table 32 where conservation strategies are discussed.

³State Endangered/Threatened/special concern lists: H=Historical, EX=Extirpated, E=Endangered, T=Threatened, SC=Special Concern, P=proposed status, ()=current status questioned.

⁴Federal Listing Status: FE=Federal Endangered, FT=Federal Threatened, FSC=Federal Special Concern.

⁵Northeast Wildlife Diversity Technical Committee Species of Regional Conservation Concern: X=of regional conservation concern in the Northeastern United States, XX= warrants federal endangered or threatened species listing considerations; Freshwater mussels are the only invertebrate taxon that has been assessed by NEWDTC.

⁶NatureServe: G1=~1-5 populations globally; generally local endemic, G2=~ 6-20 populations globally; generally state or regional endemic, G3=~ 21-100 populations globally; considered globally rare, GU=Unrankable; possibly in peril, T= Subspecific global rank, Q=taxonomy uncertain, ?=rank uncertain.

⁷New Data: Recent surveys from last 10 yrs: generally data were not available during previous listing review.

Table 13. Prioritization of Inland Fish Species.		
Species	Scientific Name	Priority¹
American Eel	<i>Anguilla rostrata</i>	1
Arctic Charr	<i>Salvelinus alpinus oquassa</i>	1
Lake Trout (Togue)	<i>Salvelinus namaycush</i>	1
Lake Whitefish	<i>Coregonus clupeaforms</i>	1
Redfin Pickerel	<i>Esox americanus americanus</i>	1
Swamp Darter	<i>Etheostoma fusiforme</i>	1
Brook Trout	<i>Salvelinus fontinalis</i>	2
Burbot (cusk)	<i>Lota lota</i>	2
Landlocked Salmon	<i>Salmo salar</i>	2
Longnose Sucker	<i>Catostomus catostomus</i>	2
Rainbow Smelt	<i>Osmerus mordax</i>	2
Round Whitefish	<i>Prosopium cylindraceus</i>	2
Lake Chub	<i>Couesius plumbeus</i>	3
Slimy Sculpin	<i>Cottus cognatus</i>	3

¹Scoring Criteria Used for Assigning Priorities

- Range/population restricted? Those species having a restricted range and/or low population numbers were assigned higher scores.
- Range/population declining? Those species whose range and/or population numbers are declining were assigned higher scores.
- Are habitat requirements narrow? Those species with narrow habitat requirements were assigned higher scores.
- Is the species on/or proposed for Federal/State Threatened or Endangered lists? Those species on/or proposed for Federal/State Threatened or Endangered lists were assigned higher scores.

Scores (0 to 4) were assigned to each species for each criterion. The 14 species listed above received the highest scores.

Note: Three species, the American eel, brook trout, and rainbow smelt occur in both inland and marine environments, but were assigned to the Inland Fish group to simplify discussions and tabular presentations throughout the CWCS.

Note: 13 species were not prioritized because of insufficient information. They include:

Blacknose Dace	<i>Rhinichthys atratulus</i>
Blacknose Shiner	<i>Notropis heterolepis</i>
Bridled Shiner	<i>Notropis bifrenatus</i>
Brook Stickleback	<i>Culaea inconstans</i>

Creek Chubsucker
Fathead Minnow
Finescale Dace
Fourspine Stickleback
Longnose Dace
Ninespine Stickleback
Northern Redbelly Dace
Pearl Dace
Threespine Stickleback

Erimyzon oblongus
Pimephales promelas
Phoxinus neogaeus
Apeltes quadracus
Rhinichthys cataractae
Pungitius punitius
Phoxinus eos
Margariscus margarita
Gasterosteus aculeatus

Table 14. Prioritization of Mammal Species.								
Species	Priority ¹	Eco-System	Habitat Type(s) ²	Prioritization Source				
				State ³	Federal ⁴	NEWDTC ⁵	NatureServe (G1-G3; GU) ⁶	New Data ⁷
Shrew								
Long-tailed Shrew	3	Uplands	UD; UM	SC				
Bats								
Eastern Small-footed Myotis	2	Uplands Wetlands*	UR; UD; UCM	SC	SC	XX	G3	
Big Brown Bat	3	Uplands Wetlands*	UD; UU; UCM	SC				Listed SC due to lack of information; recent information suggests common; trend unknown
Eastern Pipistrelle	3	Uplands Wetlands*	UD; UCM	SC				
Eastern Red Bat	3	Uplands Wetlands*	UD	SC		X		
Hoary Bat	3	Uplands Wetlands*	UD; UC	SC		X		
Little Brown Myotis	3	Uplands Wetlands*	UD; UU; UCM	SC				Listed SC due to lack of information; recent information suggests common; trend unknown
Northern Long-eared Myotis	3	Uplands Wetlands*	UD; UCM	SC				Listed SC due to lack of information; recent information suggests common; trend unknown
Silver-haired Bat	3	Uplands Wetlands*	UD	SC		X		
Rabbit								
New England Cottontail	1	Uplands	US	SC	SC	XX		Candidate for federal Endangered; state SC category based on lack of information, recent surveys suggests higher listing would be warranted
Squirrel								
Southern Flying Squirrel	3	Uplands	UD	SC				
Beaver								
American Beaver	3	Wetlands	WL; WM; WR					Impacts habitat of many species
Voles and Lemming								
Penobscot Meadow Vole	1	Coastal	CC	SC	SC		G5T1T3Q	
Northern Bog Lemming	2	Uplands	UM	T	SC	XX	G4T3Q	
Rock Vole	3	Uplands	UA	SC				
Canine								

Table 14. Prioritization of Mammal Species.								
Species	Priority ¹	Eco-System	Habitat Type(s) ²	Prioritization Source				
				State ³	Federal ⁴	NEWDTC ⁵	NatureServe (G1-G3; GU) ⁶	New Data ⁷
Wolf**	2	Uplands	US ; UD; UC	SC	T			Currently considered extirpated. Solitary wolves have been killed in the state in recent years. Wolves may have emigrated from Quebec or were illegal releases.
Cats								
Canada Lynx	2	Uplands	US ; UD; UC	SC	T	X		
Puma***	3	Uplands	UD; UC; UB; UM; US; UR	SC	E		G5THQ	Extirpated; occasional reports are thought to be escaped or released individuals
Caribou								
Caribou***	3	Uplands	UC; UM					Extirpated; climate change and increase in deer makes reestablishment unlikely

¹Priority Ranks: Highest Priority =1, High Priority = 2, and Moderate Priority = 3

²Habitat Types: CO=Marine Open Water, CE=Estuaries and Bays, CC=Rocky Coastline and Islands, CU=Unconsolidated Shore, CS=Estuarine Emergent Saltmarsh; WL=Lakes and Ponds, WM=Emergent Marsh and Wet Meadows, WF=Forested Wetland, WS=Shrub-scrub Wetland, WP=Peatlands, WR=Rivers and Streams; UD=Deciduous and Mixed Forest, UC=Coniferous Forest, UB=Dry Woodlands and Barrens, UM=Mountaintop Forest, UA=Alpine, US=Shrub/Early Successional Habitat, UG=Grasslands/Agricultural/Old Field, UU=Urban/Suburban, UR=Cliff Face and rocky outcrop; UCM= caves and mines; Note: Bold face codes denote habitat type in Table 34 where conservation strategies are discussed.

³State Endangered/Threatened/special concern lists: H=Historical, EX=Extirpated, E=Endangered, T=Threatened, SC=Special Concern, P=proposed status, ()=current status questioned.

⁴Federal Listing Status: FE= Federal Endangered, FT=Federal Threatened, FSC=Federal Special Concern, D=Federal Delisted.

⁵Northeast Wildlife Diversity Technical Committee Species of Regional Conservation Concern: X=of regional conservation concern in the Northeastern United States, XX= warrants federal endangered or threatened species listing considerations.

⁶NatureServe: G1=~1-5 populations globally; generally local endemic, G2=~ 6-20 populations globally; generally state or regional endemic, G3=~ 21-100 populations globally; considered globally rare, GU=Unrankable; possibly in peril, T= Subspecific global rank, Q=taxonomy uncertain, ?=rank uncertain.

⁷New Data: Recent surveys from last 10 yrs: generally data were not available during previous listing review.

* Forages over water

** Occasional; no known breeding population

*** Extirpated

Table 15. Prioritization of Diadromous Fish, Listed Marine Mammals and Listed Marine Turtles.		
Species	Scientific Name	Priority
Diadromous Fish¹		
Atlantic Salmon	<i>Salmo salar</i>	1
Atlantic Sturgeon	<i>Acipenser oxyrinchus</i>	1
Shortnose Sturgeon	<i>Acipenser brevirostrum</i>	1
Striped Bass	<i>Morone saxatilis</i>	1
American Shad	<i>Alosa sapidissima</i>	2
Alewife	<i>Alosa pseudoharengus</i>	3
Blueback Herring	<i>Alosa aestivalis</i>	3
Lamprey Eel	<i>Petromyzon marinus</i>	3
Tomcod	<i>Microgadus tomcod</i>	3
White perch	<i>Morone americana</i>	3
Listed Marine Mammals²		
Finback Whale	<i>Balaenoptera physalus</i>	1
Humpback Whale	<i>Megaptera novaeangliae</i>	1
Northern Right Whale	<i>Eubalaena glacialis</i>	1
Sei Whale	<i>Balaenoptera borealis</i>	1
Sperm Whale	<i>Physeter catodon</i>	1
Listed Marine Turtles₂		
Atlantic Ridley	<i>Lepidochelys kempfi</i>	1
Leatherback	<i>Dermochelys coriacea</i>	1
Loggerhead	<i>Caretta caretta</i>	1

¹Scoring Criteria Used for Assigning Priorities for Diadromous Fish

- Range/population restricted? Those species having a restricted range and/or low population numbers were assigned higher scores.
- Range/population declining? Those species whose range and/or population numbers are declining were assigned higher scores.
- Are habitat requirements narrow? Those species with narrow habitat requirements were assigned higher scores.
- Is the species on/or proposed for Federal/State Threatened or Endangered lists? Those species on/or proposed for Federal/State Threatened or Endangered lists were assigned higher scores.

Scores (0 to 4) were assigned to each species for each criterion. The 10 species listed above received the highest scores.

Note: Three species, the American eel, brook trout, and rainbow smelt occur in both inland and marine environments, but were assigned to the Inland Fish group to simplify discussions and tabular presentations throughout the CWCS.

² All marine mammals and marine turtles on a State or Federal Threatened or Endangered list were assigned a Priority 1.

3.3 SPECIES OF GREATEST CONSERVATION NEED

In the preceding section of this chapter, we described the process whereby we prioritized species based on a number of criteria, but primarily based on conservation need and risk of extirpation. After reviewing the product of the previous section (Tables 10-15), we decided that **all species assigned a Priority 1 or Priority 2 ranking should be considered Species of Greatest Conservation Need**. However, because the list of SGCN is long, and anticipated resources are not expected to meet all the conservation needs for those species, we decided to design a triage approach to help us focus our resources.

In this section, we outline the triage process for ranking SGCN species. Based on input from the CWCS Working Group, we decided to make it a two-part process based first on knowledge and readiness, and secondly on funding need. We consider this process to be dynamic, and we anticipate rankings of SGCN will change as the status of species change. The final product of this effort can be found in taxa Tables 18-23, and is summarized in Table 24.

In **PART 1**, we rank SGCN based on their priority ranking from Tables 10-15 and on a score for **Knowledge and Readiness**. In **PART 2**, we assign a **Funding Priority** score based on the SGCN ranking from PART 1 and the species' need for additional federal funding. The following provides details of the decision-making process.

PART 1

A. Knowledge and Readiness – Determine the level of knowledge we have of the species and our readiness to achieve results with adequate funding.

1. Very High – Very high potential to achieve conservation results based on a high level of knowledge and readiness.

- At least a species assessment and publicly derived goals and objective exist; or
- Population status, distribution, threats, and management needs are well documented.

2. High – High potential to achieve conservation results based on a moderate level of knowledge and readiness.

- An assessment exists, but publicly derived goals and objectives have not yet been developed; or
- Population status, distribution, threats, and management needs are at least partly documented; and there is agreement by the Agency, and/or conservation partners, that attention is needed.

3. Moderate – Moderate potential to achieve conservation results based on a low level of knowledge and readiness.

- Population status, distribution, threats, and management needs are poorly understood or not documented.

B. Species of Greatest Conservation Need Priority – Assign a score based on Table 16.

Table 16. SGCN Prioritization Scoring Chart.		
Species Priority (Tables 10-15)	Knowledge and Readiness Score	SGCN Ranking Category
1	Very High	Highest
1	High	Highest
1	Moderate	High
2	Very High	High
2	High	High
2	Moderate	Moderate

PART 2

A. Need For Additional Funding – Determine the level of need for additional funds to conserve the species.

1. High Need

- No federal support is anticipated (other than SWG), or it will be limited to in-kind or just a small portion of the operating budget (e.g., difficult to raise more than a few thousand dollars).

2. Moderate Need

- Anticipated federal funds (in-kind + cash) (other than SWG) will be important, but will not play a predominate role.

3. Low Need

- Federal funds (other than SWG) would comprise most of the operating budget, or
- Anticipated federal funding will be enough to implement a reasonable conservation program.

B. Funding Priority – Assign a score based on Table 17.

The final product is depicted in Tables 18-23, which reflects the scores of **PART 1** and **PART 2**.

Table 17. SGCN Funding Priority Chart.		
SGCN Priority Category	Need for Funding Score	Funding Priority
Highest	High	1
Highest	Moderate	1
High	High	2
High	Moderate	2
Moderate	High	2
Moderate	Moderate	2
Highest	Low	3
High	Low	3
Moderate	Low	3

Table 18. Birds of Greatest Conservation Need.							
Species	PART 1			Background Information		PART 2	
	Priority (Table 10)	Knowledge And Readiness	SGCN Priority Category	Past Federal Funding Sources	Anticipated Funding Stability¹	Funding Need	Funding Priority
Loon and Grebe							
Common Loon	2	Very High	High	None	Unstable	Moderate	2
Pied-billed Grebe	2	High	High	None	Unstable	High	2
Shearwater							
Greater Shearwater	2	High	High	None	None	Low	3
Cormorant							
Great Cormorant (breeding)	2	High	High	PR (minimum)	Unstable	High	2
Wading Birds							
American Bittern	2	High	High	None	Unstable	High	2
Black-crowned Night Heron	2	High	High	None	Unstable	Moderate	2
Cattle Egret	2	Moderate	Moderate	None	Unstable	Moderate	2
Glossy Ibis	2	Moderate	Moderate	None	Unstable	Moderate	2
Great Blue Heron	2	Moderate	Moderate	None	Unstable	Moderate	2
Great Egret	2	Moderate	Moderate	None	Unstable	Moderate	2
Least Bittern	2	High	High	None	Unstable	High	2
Little Blue Heron	2	Moderate	Moderate	None	Unstable	Moderate	2
Snowy Egret	2	Moderate	Moderate	None	Unstable	Moderate	2
Tri-colored Heron	2	Moderate	Moderate	None	Unstable	Moderate	2
Waterfowl							
American Black Duck	2	High	High	PR (minimum)	Stable	Low	3
Barrow's Goldeneye	2	High	High	PR (minimum)	Unstable	Moderate	2
Common Eider	2	High	High	PR (minimum)	Unstable	Moderate	2
Greater Scaup (non-breeding)	2	High	High	PR (minimum)	Unstable	Low	3
Harlequin Duck	2	Very High	High	PR (minimum) Section 6	Unstable	Moderate	2
Ruddy Duck	2	Moderate	Moderate	PR (minimum)	Unstable	Low	3
Raptors							
Bald Eagle	2	Very High	High	PR (minimum) Section 6	Unstable	Moderate	2
Golden Eagle	2	Very High	High	None	Unstable	Low	3
Peregrine Falcon	1	Very High	Highest	Section 6	Unstable	Moderate	1

Table 18. Birds of Greatest Conservation Need.							
Species	PART 1			Background Information		PART 2	
	Priority (Table 10)	Knowledge And Readiness	SGCN Priority Category	Past Federal Funding Sources	Anticipated Funding Stability¹	Funding Need	Funding Priority
Rails, Coot, and Crane							
American Coot (breeding)	2	High	High	None	Unstable	High	2
Common Moorhen	2	High	High	None	Unstable	High	2
Sandhill Crane	2	Moderate	Moderate	None	None	Low	3
Yellow Rail	2	Moderate	Moderate	None	Unstable	High	2
Shorebirds							
American Oystercatcher	1	Moderate	High	None	None	Moderate	2
American Woodcock	2	Very High	High	PR (minimum)	Unstable	Low	3
Greater Yellowlegs	2	Very High	High	None	None	Moderate	2
Piping Plover	1	Very High	Highest	PR (minimum) Section 6	Unstable	Moderate	1
Purple Sandpiper	2	Very High	High	None	Unstable	Moderate	2
Red Knot	2	Very High	High	None	None	Moderate	2
Red-necked Phalarope	2	High	High	None	None	Moderate	2
Ruddy Turnstone	2	Very High	High	None	None	Moderate	2
Sanderling	2	Very High	High	None	None	Moderate	2
Semipalmated Sandpiper	2	Very High	High	None	None	Moderate	2
Upland Sandpiper	1	High	Highest	None	None	High	1
Whimbrel	2	Very High	High	None	None	Moderate	2
Willet	2	High	High	None	None	Moderate	2
Gulls and Terns							
Arctic Tern	2	Very High	High	PR (minimum)	Unstable	Moderate	2
Black Tern	1	Very High	Highest	Section 6	Unstable	High	1
Bonaparte's Gull (breeding)	2	Moderate	Moderate	None	None	Low	3
Common Tern	2	Very High	High	PR (minimum)	Unstable	Moderate	2
Least Tern	1	Very High	Highest	PR (minimum)	Unstable	Moderate	1
Roseate Tern	1	Very High	Highest	PR (minimum) Section 6	Unstable	Moderate	1
Auks							
Atlantic Puffin	2	Very High	High	PR (minimum)	Unstable	Moderate	2
Common Murre	2	Very High	High	None	Unstable	Moderate	2

Table 18. Birds of Greatest Conservation Need.							
Species	PART 1			Background Information		PART 2	
	Priority (Table 10)	Knowledge And Readiness	SGCN Priority Category	Past Federal Funding Sources	Anticipated Funding Stability¹	Funding Need	Funding Priority
Razorbill	2	Very High	High	PR (minimum)	Unstable	Moderate	2
Cuckoo							
Black-billed Cuckoo	2	High	High	None	None	High	2
Owls and Nightjars							
Barred Owl	2	High	High	None	None	High	2
Common Nighthawk	2	High	High	None	Unstable	High	2
Eastern Screech-Owl	2	High	High	None	None	High	2
Long-eared Owl	2	Moderate	Moderate	None	None	High	2
Short-eared Owl	1	High	Highest	None	None	High	1
Whip-poor-will	2	High	High	None	Unstable	High	2
Swift							
Chimney Swift	2	High	High	None	None	High	2
Woodpeckers							
American Three-toed Woodpecker	2	Moderate	Moderate	None	None	High	2
Northern Flicker	2	High	High	None	None	High	2
Yellow-bellied Sapsucker	2	High	High	None	None	High	2
Flycatchers, Lark, and Swallows							
Barn Swallow	2	Very High	High	None	None	High	2
Eastern Kingbird	2	Very High	High	None	None	High	2
Great-crested Flycatcher	2	Very High	High	None	None	High	2
Horned Lark (breeding)	2	Very High	High	None	None	High	2
Olive-sided Flycatcher	2	Very High	High	None	None	High	2
Purple Martin	2	Very High	High	None	None	High	2
Willow Flycatcher	2	Very High	High	None	None	High	2
Wrens							
Marsh Wren	2	Very High	High	None	None	High	2
Sedge Wren	1	High	Highest	None	None	High	1
Kinglets, Thrushes, and Mimic Thrushes							
Bicknell's Thrush	1	Very High	Highest	None	None	High	1

Table 18. Birds of Greatest Conservation Need.							
Species	PART 1			Background Information		PART 2	
	Priority (Table 10)	Knowledge And Readiness	SGCN Priority Category	Past Federal Funding Sources	Anticipated Funding Stability¹	Funding Need	Funding Priority
Blue-gray Gnatcatcher	2	High	High	None	None	High	2
Brown Thrasher	2	Very High	High	None	None	High	2
Veery	2	Very High	High	None	None	High	2
Wood Thrush	2	Very High	High	None	None	High	2
Pipit							
American Pipit (breeding)	2	High	High	None	None	Low	3
Shrike							
Loggerhead Shrike (non-breeding)	2	Moderate	Moderate	None	None	High	2
Vireo							
Yellow-throated Vireo	2	High	High	None	None	High	2
Warblers							
Bay-breasted Warbler	2	Very High	High	None	None	High	2
Black and White Warbler	2	Very High	High	None	None	High	2
Blackburnian Warbler	2	Very High	High	None	None	High	2
Black-throated Blue Warbler	2	Very High	High	None	None	High	2
Black-throated Green Warbler	2	Very High	High	None	None	High	2
Blue-winged Warbler	1	Very High	Highest	None	None	High	1
Canada Warbler	2	Very High	High	None	None	High	2
Cape May Warbler	2	Very High	High	None	None	High	2
Chestnut-sided Warbler	2	Very High	High	None	None	High	2
Louisiana Waterthrush	2	Very High	High	None	None	High	2
Northern Parula	2	Very High	High	None	None	High	2
Prairie Warbler	2	Very High	High	None	None	High	2
Grosbeaks							
Rose-breasted Grosbeak	2	Very High	High	None	None	High	2
Scarlet Tanager	2	Very High	High	None	None	High	2
Sparrows and Towhee							
Eastern Towhee	2	Very High	High	None	None	High	2

Table 18. Birds of Greatest Conservation Need.							
Species	PART 1			Background Information		PART 2	
	Priority (Table 10)	Knowledge And Readiness	SGCN Priority Category	Past Federal Funding Sources	Anticipated Funding Stability¹	Funding Need	Funding Priority
Field Sparrow	2	Very High	High	None	None	High	2
Grasshopper Sparrow	2	High	High	Section 6	None	Moderate	2
Nelson’s Sharp-tailed Sparrow	2	Very High	High	None	None	High	2
Saltmarsh Sharp-tailed Sparrow	1	Very High	Highest	None	Unstable	High	1
Vesper Sparrow	2	Very High	High	None	None	High	2
Blackbirds							
Baltimore Oriole	2	Very High	High	None	None	High	2
Bobolink	2	Very High	High	None	None	High	2
Eastern Meadowlark	2	Very High	High	None	None	High	2
Rusty Blackbird	2	Very High	High	None	None	High	2
Finches							
Purple Finch	2	Very High	High	None	None	High	2
Red Crossbill	2	Very High	High	None	None	High	2

¹Anticipated Funding Stability: Stable = Consistent year-to-year federal funds (e.g. significant PR, DJ), Unstable = Inconsistent federal funds (e.g. Section 6, minimum PR), None = No federal funds.

²Options for conservation or management are limited (e.g. only occurs at one site, which is already in conservation ownership), or threats are beyond the state’s capacity to manage (e.g. global warming).

Table 19. Herpetofauna of Greatest Conservation Need.							
Species	PART 1			Background Information		PART 2	
	Priority (Table 11)	Knowledge and Readiness	SGCN Priority Category	Past Federal Funding Sources	Anticipated Funding Stability¹	Funding Need	Funding Priority
AMPHIBIANS							
Salamanders							
Blue-spotted Salamander	2	High	High	None	None	High	2
REPTILES							
Turtles							
Blanding’s Turtle	1	Very High	Highest	Section 6	Unstable	Moderate	1
Eastern Box Turtle	1	Moderate	High	None	None	High	2
Spotted Turtle	2	High	High	Section 6 (Incidental)	None	High	2
Wood Turtle	2	High	High	None	None	High	2
Snakes							
Northern Black Racer	2	High	High	None	None	High	2
Timber Rattlesnake	2	Moderate	Moderate	None	None	High	2

¹Anticipated Funding Stability: Stable = Consistent year-to-year federal funds (e.g. significant PR, DJ), Unstable = Inconsistent federal funds (e.g. Section 6, minimum PR), None = No federal funds.

Table 20. Invertebrates of Greatest Conservation Need.
 Better-known Orders of Two Major Invertebrate Phyla (terrestrial and freshwater only)

Phylum	Class	Subclass or Order (Family)	Species	PART 1			Background Information		PART 2	
				Priority* (Table 12)	Knowledge and Readiness	SGCN Priority Category	Past Federal Funding Sources	Anticipated Funding Stability ¹	Funding Need	Funding Priority
Mollusca	Gastropoda	Subclass Pulmonata Lung-breathing snails, slugs	127+	?						
			Bigmouth Pondsnail <i>Stagnicola mighelsi</i>	2	Moderate	Moderate	None	None	High	2
			Deep-Throat Vertigo <i>Vertigo nylanderi</i>	2	Moderate	Moderate	None	None	High	2
			Great Lakes Physa <i>Physella magnalacustris</i>	2	Moderate	Moderate	None	None	High	2
			Lamellate Supercoil <i>Paravitrea lamellidens</i>	2	Moderate	Moderate	None	None	High	2
			Mystery Vertigo <i>Vertigo paradoxa</i>	2	Moderate	Moderate	None	None	High	2
			Pleistocene Catinella <i>Catinella exile</i>	2	Moderate	Moderate	None	None	High	2
			Six-whorl Vertigo <i>Vertigo morsei</i>	2	Moderate	Moderate	None	None	High	2
	Bivalvia	Unionoida Freshwater Mussels	36+	?						
			A Spire Snail <i>Amnicola decisus</i>	1	Moderate	High	None	None	High	2
			Tidewater Mucket <i>Leptodea ochracea</i>	1	High	Highest	Section 6	None	High	1
			Yellow Lampmussel <i>Lampsilis cariosa</i>	1	High	Highest	Section 6	None	High	1
			Brook Floater <i>Alasmidonta varicosa</i>	2	High	High	Section 6	None	High	2
Arthropoda	Crustacea	Decapoda Crayfish	26+	?						
			7	?						
			Arachnida Araneae Spiders	500+	?					
Insecta	Plecoptera Stoneflies	94+	?							

Table 20. Invertebrates of Greatest Conservation Need.
 Better-known Orders of Two Major Invertebrate Phyla (terrestrial and freshwater only)

Phylum	Class	Subclass or Order (Family)	Species	PART 1			Background Information		PART 2	
				Priority* (Table 12)	Knowledge and Readiness	SGCN Priority Category	Past Federal Funding Sources	Anticipated Funding Stability ¹	Funding Need	Funding Priority
Arthropoda (continued)	Insecta (continued)	Plecoptera Stoneflies (continued)	A Stonefly <i>Neoperla mainensis</i>	2	Moderate	Moderate	None	None	High	2
		Trichoptera Caddisflies (excluding Hydroptilidae)	184+	?						
		Trichoptera (Hydroptilidae) Caddisflies [micro]	50+	?						
			A Caddisfly <i>Hydroptila tomah</i>	2	Moderate	Moderate	None	None	High	2
		Hymenoptera Bees, Wasps, Ants	855+	?						
		Diptera Flies (excluding Tipulidae and allies, Culicidae, Simuliidae, and Tabanidae)	226	?						
		Diptera (Tabanidae) Horseflies and Deerflies	76	?						
		Diptera (Tipulidae and allies) Craneflies	285	?						
		Diptera (Simuliidae) Blackflies	43	?						
		Diptera (Culicidae) Mosquitoes	45	?						
		Ephemeroptera Mayflies	Roaring Brook Mayfly <i>Epeorus frisoni</i>	1	High	Highest	None	None	High	1
			Tomah Mayfly <i>Siphonisca aerodromia</i>	1	Very High	Highest	Section 6	None	High	1
			A Mayfly <i>Baetisca rubescens</i>	2	Moderate	Moderate	None	None	High	2
			A Mayfly <i>Nixe horrida</i>	2	Moderate	Moderate	None	None	High	2

Table 20. Invertebrates of Greatest Conservation Need.
 Better-known Orders of Two Major Invertebrate Phyla (terrestrial and freshwater only)

Phylum	Class	Subclass or Order (Family)	Species	PART 1			Background Information		PART 2	
				Priority* (Table 12)	Knowledge and Readiness	SGCN Priority Category	Past Federal Funding Sources	Anticipated Funding Stability ¹	Funding Need	Funding Priority
Arthropoda (continued)	Insecta (continued)	Ephemeroptera Mayflies (continued)	A Mayfly <i>Nixe rusticalis</i>	2	Moderate	Moderate	None	None	High	2
			A Mayfly <i>Plauditus veteris</i>	2	Moderate	Moderate	None	None	High	2
			A Mayfly <i>Procloeon mendax</i>	2	Moderate	Moderate	None	None	High	2
			A Mayfly <i>Procloeon ozburni</i>	2	Moderate	Moderate	None	None	High	2
			A Mayfly <i>Procloeon simplex</i>	2	Moderate	Moderate	None	None	High	2
			A Mayfly <i>Siphonurus demaryi</i>	2	Moderate	Moderate	None	None	High	2
			A Mayfly <i>Siphonurus securifer</i>	2	Moderate	Moderate	None	None	High	2
		Lepidoptera Butterflies & Skippers	Clayton's Copper <i>Lycaena dorcas claytoni</i>	1	Very High	Highest	Section 6 Other USFWS	None	High	1
			Hessel's Hairstreak <i>Callophrys hesseli</i>	1	Very High	Highest	None	None	High	1
			Katahdin Arctic ² <i>Oeneis polixenes katahdin</i>	1	Very High	Highest	None	None	High	1
			Cobweb Skipper <i>Hesperia metea</i>	2	High	High	None	None	High	2
			Coral Hairstreak <i>Satyrium titus</i>	2	High	High	None	None	High	2
			Crowberry Blue <i>Plebejus idas empetri</i>	2	High	High	None	None	High	2
			Early Hairstreak <i>Erora laeta</i>	2	Moderate	Moderate	None	None	High	2
			Edwards' Hairstreak <i>Satyrium edwardsii</i>	2	High	High	None	None	High	2
			Frigga Fritillary <i>Boloria frigga</i>	2	High	High	None	None	High	2

Table 20. Invertebrates of Greatest Conservation Need.
 Better-known Orders of Two Major Invertebrate Phyla (terrestrial and freshwater only)

Phylum	Class	Subclass or Order (Family)	Species	PART 1			Background Information		PART 2	
				Priority* (Table 12)	Knowledge and Readiness	SGCN Priority Category	Past Federal Funding Sources	Anticipated Funding Stability ¹	Funding Need	Funding Priority
Arthropoda (continued)	Insecta (continued)	Lepidoptera Butterflies & Skippers (continued)	Greenish Blue Plebejus saepiolus <i>amica</i>	2	Moderate	Moderate	None	None	High	2
			Juniper Hairstreak <i>Callophrys gryneus</i>	2	High	High	None	None	High	2
			Leonard's Skipper <i>Hesperia leonardus</i>	2	High	High	None	None	High	2
			Purple Lesser Fritillary <i>Boloria chariclea grandis</i>	2	High	High	None	None	High	2
			Sleepy Duskywing <i>Erynnis brizo</i>	2	High	High	None	None	High	2
			Spicebush Swallowtail <i>Papilio troilus</i>	2	Moderate	Moderate	None	None	High	2
		Lepidoptera Moths [macro]	Twilight Moth <i>Lycia rachelae</i>	1	High	Highest	None	None	High	1
			A Moth <i>Cucullia speyeri</i>	2	Moderate	Moderate	None	None	High	2
			A Moth <i>Nepytia pellucidaria</i>	2	Moderate	Moderate	None	None	High	2
			A Noctuid Moth <i>Chaetagnathia cerata</i>	2	Moderate	Moderate	None	None	High	2
			Barrens Itame <i>Itame sp. 1</i>	2	High	High	None	None	High	2
			Graceful Clearwing <i>Hemaris gracilis</i>	2	Moderate	Moderate	None	None	High	2
			Pine Barrens Zale <i>Zale sp. 1 nr. lunifera</i>	2	High	High	None	None	High	2
			Pine Barrens Zanclognatha <i>Zanclognatha martha</i>	2	High	High	None	None	High	2
			Pine Devil <i>Citheronia sepulcralis</i>	2	Moderate	Moderate	None	None	High	2
			Pine Pinion <i>Lithophane l. lepida</i>	2	Moderate	Moderate	None	None	High	2

Table 20. Invertebrates of Greatest Conservation Need.
 Better-known Orders of Two Major Invertebrate Phyla (terrestrial and freshwater only)

Phylum	Class	Subclass or Order (Family)	Species	PART 1			Background Information		PART 2	
				Priority* (Table 12)	Knowledge and Readiness	SGCN Priority Category	Past Federal Funding Sources	Anticipated Funding Stability ¹	Funding Need	Funding Priority
Arthropoda (continued)	Insecta (continued)	Lepidoptera Moths [macro] (continued)	Pink Sallow <i>Psestraglaea carnosa</i>	2	Moderate	Moderate	None	None	High	2
			Precious Underwing <i>Catocala p. pretiosa</i>	2	Moderate	Moderate	None	None	High	2
			The Buckmoth <i>Hemileuca m. maia</i>	2	High	High	None	None	High	2
		Lepidoptera Moths [micro]	1720	?						
		Odonata Dragonflies and Damselflies	Rapids Clubtail <i>Gomphus quadricolor</i>	1	High	Highest	None	None	High	1
			Ringed Boghaunter <i>Williamsonia lintneri</i>	1	Very High	Highest	Section 6	Unstable	High	1
			Spatterdock Darner <i>Rhionaeschna mutata</i>	1	High	Highest	None	None	High	1
			Arrow Clubtail <i>Stylurus spiniceps</i>	2	High	High	None	None	High	2
			Arrowhead Spiketail <i>Cordulegaster obliqua</i>	2	Moderate	Moderate	None	None	High	2
			Big Bluet <i>Enallagma durum</i>	2	High	High	None	None	High	2
			Boreal Snaketail <i>Ophiogomphus colubrinus</i>	2	High	High	Section 6	None	High	2
			Canada Whiteface <i>Leucorrhinia patricia</i>	2	Moderate	Moderate	None	None	High	2
			Citrine Forktail <i>Ischnura hastata</i>	2	Moderate	Moderate	None	None	High	2
			Cobra Clubtail <i>Gomphus vastus</i>	2	High	High	None	None	High	2
			Dusky Dancer <i>Argia translata</i>	2	Moderate	Moderate	None	None	High	2
Pygmy Snaketail <i>Ophiogomphus howei</i>	2		High	High	Section 6	None	High	2		

Table 20. Invertebrates of Greatest Conservation Need.
 Better-known Orders of Two Major Invertebrate Phyla (terrestrial and freshwater only)

Phylum	Class	Subclass or Order (Family)	Species	PART 1			Background Information		PART 2	
				Priority* (Table 12)	Knowledge and Readiness	SGCN Priority Category	Past Federal Funding Sources	Anticipated Funding Stability ¹	Funding Need	Funding Priority
Arthropoda (continued)	Insecta (continued)	Odonata Dragonflies and Damselflies (continued)	Quebec Emerald <i>Somatochlora brevicincta</i>	2	High	High	None	None	High	2
			Rambur's Forktail <i>Ischnura ramburii</i>	2	Moderate	Moderate	None	None	High	2
			Scarlet Bluet <i>Enallagma pictum</i>	2	High	High	None	None	High	2
			Sedge Darner <i>Aeshna juncea</i>	2	High	High	None	None	High	2
			Southern Pygmy Clubtail <i>Lanthus vernalis</i>	2	Moderate	Moderate	None	None	High	2
			Swamp Darner <i>Epiaschna heros</i>	2	High	High	None	None	High	2
			Tule Bluet <i>Enallagma carunculatum</i>	2	Moderate	Moderate	None	None	High	2
			1776+	?						
		Coleoptera Beetles (excluding Carabidae and Cicindelidae)	American Burying Beetle <i>Nicrophorus americanus</i>	2	Moderate	Moderate	None	None	Moderate	2
		Coleoptera (Carabidae, including Cicindelidae) Ground Beetles	404	?						
Orthoptera Grasshoppers, etc.	74+	?								
Heteroptera (Miridae) Plant Bugs	17+	?								

¹Anticipated Funding Stability: Stable = Consistent year-to-year federal funds (e.g. significant PR, DJ), Unstable = Inconsistent federal funds (e.g. Section 6, minimum PR), None = No federal funds.

²Options for conservation or management are limited (e.g. only occurs at one site, which is already in conservation ownership), or threats are beyond the state's capacity to manage (e.g. global warming).

*? = Due to a lack of funding and staff resources, the status and priority of species in this taxon have not been assessed.

Table 21. Inland Fish of Greatest Conservation Need.							
Species	PART 1			Background Information		PART 2	
	Priority (Table 13)	Knowledge and Readiness	SGCN Priority Category	Past Federal Funding Sources	Anticipated Funding Stability¹	Funding Need	Funding Priority
American Eel	1	High	Highest	DJ, University of Maine, Other	Unstable	Moderate	2
Arctic Charr	1	Very High	Highest	DJ, University of Maine, Other	Unstable	Moderate	2
Brook Trout	2	Very High	High	DJ, Other	Stable	Moderate	2
Burbot (Cusk)	2	Very High	High	DJ	Unstable	High	3
Lake Trout (Togue)	1	Very High	Highest	DJ	Stable	Moderate	2
Lake Whitefish	1	Very High	Highest	DJ	Unstable	High	1
Landlocked Salmon	2	Very High	High	DJ	Stable	Moderate	2
Longnose Sucker	2	High	High	None	None	High	3
Rainbow Smelt	2	Very High	High	DJ	Unstable	High	3
Redfin Pickerel	1	High	Highest	University of Maine	None	High	1
Round Whitefish	2	Very High	High	DJ	Unstable	High	2
Swamp Darter	1	High	Highest	None	None	High	1

¹Anticipated Funding Stability: Stable = Consistent year-to-year federal funds (e.g. significant PR, DJ), Unstable = Inconsistent federal funds (e.g. Section 6, minimum PR), None = No federal funds.

Table 22. Mammals of Greatest Conservation Need.							
Species	PART 1			BACKGROUND INFO		PART 2	
	Priority (Table 14)	Knowledge and Readiness	SGCN Priority Category	Past Federal Funding Sources	Anticipated Funding Stability¹	Funding Need	Funding Priority
Bat							
Eastern Small-footed Myotis	2	Moderate	Moderate	None	None	High	2
Rabbit							
New England Cottontail	1	Very High	Highest	PR (minimum) Section 6	Unstable	Moderate	1
Vole and Lemming							
Penobscot Meadow Vole	1	High	Highest	None	None	High	1
Northern Bog Lemming	2	High	High	None	None	High	2
Canine							
Wolf**	2	High	High	PR (minimum) Section 6	Unstable	Low	3
Cat							
Canada Lynx	2	Very High	High	PR (minimum) Section 6	Unstable	Moderate	2

¹Anticipated Funding Stability: Stable = Consistent year-to-year federal funds (e.g. significant PR, DJ), Unstable = Inconsistent federal funds (e.g. Section 6, minimum PR), None = No federal funds.

** Occasional; no known breeding population

Table 23. Marine Species of Greatest Conservation Need.							
Species	PART 1			Background Information		PART 2	
	Priority (Table 15)	Knowledge and Readiness	SGCN Priority Category	Past Federal Funding Sources	Anticipated Funding Stability¹	Funding Need	Funding Priority
Diadromous Fish							
Atlantic Sturgeon	1	High	Highest	Other	Unstable	High	1
Shortnose Sturgeon	1	High	Highest	AFA, Other	Stable AFA (minimum)	High	1
Striped Bass	1	High	Highest	AFA, D-J	Stable AFA (minimum)	High	1
Atlantic Salmon	1	Very High	Highest		Stable	Moderate	1
American Shad	2	High	High	AFA, D-J, Other	Stable AFA (minimum)	High	2
Listed Marine Whales							
Finback Whale	1	High	Highest	NEC, NOAA, NFWF	Unstable	Moderate	1
Humpback Whale	1	High	Highest	NEC, NOAA, NFWF	Unstable	Moderate	1
Northern Right Whale	1	Very High	Highest	NEC, NOAA, NFWF	Unstable	Moderate	1
Sei Whale	1	High	Highest	NEC, NOAA, NFWF	Unstable	Moderate	1
Sperm Whale	1	High	Highest	NEC, NOAA, NFWF	Unstable	Moderate	1
Listed Marine Turtles							
Atlantic Ridley	1	Moderate	High	NEC, NOAA, NFWF	Unstable	Moderate	2
Leatherback	1	Moderate	High	NEC, NOAA, NFWF	Unstable	Moderate	2
Loggerhead	1	Moderate	High	NEC, NOAA, NFWF	Unstable	Moderate	2

¹Anticipated Funding Stability: Stable = Consistent year-to-year federal funds (e.g. significant PR, DJ), Unstable = Inconsistent federal funds (e.g. Section 6, minimum PR), None = No federal funds.

AFA = Anadromous Fish Act
 NEC = Northeast Consortium
 NOAA = National Oceanic and Atmospheric Administration
 NFWF = National Fish and Wildlife Foundation

As a result of this process, Maine has identified 213 SGCN within 6 major taxa (Table 24):

- 103 birds,
- 7 herpetofauna (1 amphibian and 6 reptiles),
- 72 invertebrates (1 beetle, 15 butterflies, 1 caddisfly, 19 damselflies and dragonflies, 3 freshwater mussels, 11 mayflies, 13 moths, 8 snails, and 1 stonefly),
- 12 inland fish,
- 6 mammals (non-marine), and
- 13 marine species (5 diadromous fish, 5 whales, and 3 turtles).

Three species, the American eel, brook trout, and rainbow smelt occur in both inland and marine environments, but were assigned to the Inland Fish group to simplify discussions and tabular presentations throughout the CWCS.

Table 24. Numbers of Maine Wildlife and SGCN.				
Wildlife Taxon	Number	Threatened/ Endangered¹	Special Concern	SGCN
Birds	292	15	24	103
Herpetofauna	38	4	5	7
Invertebrates	<15,000	12	38	72
Inland Fish	56	1	0	12
Mammals (Non-marine)	59	1	1	6
Marine	1,727 ²	1	0	13
Totals		34	68	213

¹These species are listed as Endangered or Threatened in Maine.
²Includes chordates (37 species), marine fishes (252), marine invertebrates (1,414) and marine mammals (24). Marine birds (177) are included in the Bird taxa.

Currently, the list of SGCN is limited to wildlife species and does not include plants. However, future editions of the Strategy will explore inclusion of plants that have obligate relationships with wildlife SGCN or are indicators of high quality natural communities, in addition to those that are in need of conservation for other reasons, as they are also essential elements of the ecosystems supporting Maine's wildlife.