

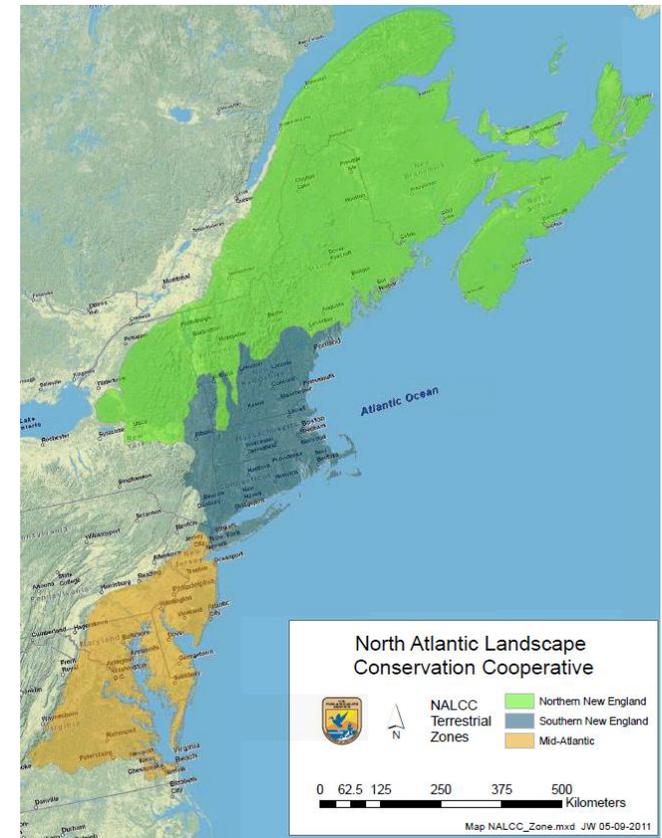
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Terrestrial and Wetland Representative Species of the North Atlantic:
Species Selected, Considered, and Associated Habitats (Ecological Systems)

Background: The Northeast Region has designated an initial set of representative species in the North Atlantic LCC region as a tool for strategically conserving habitat at landscape scales. A representative species is one that, because of its habitat use, ecosystem function, or management response, typifies lifecycle or habitat requirements for a larger group of species. The Northeast Region sponsored a project with the University of Massachusetts Amherst that considered several hundred candidates to serve as representative species. The species consisted primarily of: (a) Federal Trust Species, and (b) Species of Greatest Conservation Need identified by at least six states in the region. Given the diverse ecosystems of the region, representative species were identified for each of three sub-regions (Figure): northern New England and New York, southern New England and New York, and mid-Atlantic. At 2011 workshops in each of the three sub-regions, Service scientists and other experts selected a total of 87 terrestrial and wetland representative species.

Explanation of Table: The table below lists each representative species selected, the other candidate species considered, and the habitats with which they are associated. Numerous other species that share these habitats, but which were not specifically considered by the project or listed in the table, are also expected to be represented. Within a given sub-region, each candidate species was assigned to a single group of specific habitats, and experts picked one or more species they believed best represented the other species assigned to the habitat group. Habitat groupings and species assignments were not identical among sub-regions. For example, American Black Duck was assigned to freshwater marsh habitats in southern New England, but to a broader habitat grouping of freshwater marshes and shrub-swamps in the mid-Atlantic. Experts frequently picked more than one representative species per general habitat group to better encompass a mix of vegetation structures, habitat types, and geographic ranges. For example, in the hardwood forest habitat group of southern New England, experts chose Wood Thrush as representative of mature forest species and Chestnut-sided Warbler as representative of early successional species. Habitat capability models have been developed for species in bold under the *Designing Sustainable Landscapes* project led by U. Mass. Amherst.

Key: NNE = Northern New England and New York + maritime Canada sub-region
SNE = Southern New England and New York sub-region
MidA = Mid-Atlantic sub-region



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#	General Habitat Type	Sub-region	Acres in LCC (million)	Representative Species	Species Represented (of those considered)	Specific Habitats (Ecological Systems) of the General Habitat Type
1	Hardwood forests	SNE	32.4	Chestnut-sided Warbler Eastern Red Bat Louisiana Waterthrush Ovenbird Wood Thrush	Acadian Flycatcher American Redstart Baltimore Oriole Black-and-white Warbler Black-billed Cuckoo Broad-winged hawk Cerulean Warbler Eastern Hognose Snake Eastern Whip-poor-will Eastern Wood-pewee Great-crested Flycatcher Hooded Warbler Indiana Bat Jefferson Salamander Marbled Salamander Northern Flicker Northern Goshawk Red-shouldered Hawk Scarlet Tanager Sharp-shinned Hawk Silver-haired Bat Small Whorled Pogonia Worm-eating Warbler Yellow-throated Vireo	Allegheny-Cumberland Dry Oak Forest and Woodland Appalachian (Hemlock)-Northern Hardwood Forest Central Appalachian Dry Oak-Pine Forest Laurentian-Acadian Northern Hardwoods Forest Laurentian-Acadian Northern Pine-(Oak) Forest Laurentian-Acadian Pine-Hemlock-Hardwood Forest Northeastern Interior Dry-Mesic Oak Forest Northern Atlantic Coastal Plain Hardwood Forest South-Central Interior Mesophytic Forest Southern and Central Appalachian Cove Forest Southern Appalachian Northern Hardwood Forest Southern Appalachian Oak Forest Southern Atlantic Coastal Plain Mesic Hardwood Forest
2	Hardwood forests	NNE	32.1	Blackburnian Warbler Chestnut-sided Warbler Eastern Red Bat Ovenbird Ruffed Grouse Wood Thrush	American Redstart Baltimore Oriole Black-and-white Warbler Black-billed Cuckoo Black-throated Blue Warbler Broad-winged hawk Eastern Whip-poor-will Eastern Wood-pewee Indiana Bat Jefferson Salamander Long-eared Owl Louisiana Waterthrush Northern Flicker Northern Goshawk Pine Warbler Red-shouldered Hawk Sharp-shinned Hawk Silver-haired Bat Small Whorled Pogonia Yellow-bellied Sapsucker Yellow-throated Vireo	Appalachian (Hemlock)-Northern Hardwood Forest Laurentian-Acadian Northern Hardwoods Forest Laurentian-Acadian Northern Pine-(Oak) Forest Laurentian-Acadian Pine-Hemlock-Hardwood Forest Central Appalachian Dry Oak-Pine Forest Northeastern Interior Dry-Mesic Oak Forest Northern Atlantic Coastal Plain Hardwood Forest

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3	Moist hardwood forests	MidA	8.2	Wood Thrush Red-shouldered Hawk Eastern Whip-poor-will Eastern Box Turtle Worm-eating Warbler	Baltimore Oriole Black-and-white Warbler Black-billed Cuckoo Black-throated Blue Warbler Broad-winged Hawk Brown Creeper Canada Warbler Great-crested Flycatcher Hoary Bat Louisiana Waterthrush Northern Flicker Northern Goshawk Northern Saw-whet Owl Scarlet Tanager Sharp-shinned Hawk Swainson's Warbler Yellow-bellied Sapsucker	Appalachian (Hemlock)-Northern Hardwood Forest Southern and Central Appalachian Cove Forest Southern Atlantic Coastal Plain Mesic Hardwood Forest Southern Piedmont Mesic Forest
4	Dry hardwood forests	MidA	7.9	Black-and-white Warbler Eastern Towhee Eastern Wood-Pewee Ovenbird	Black-capped Chickadee Chck-will's-widow Small Whorled Pogonia	Central Appalachian Dry Oak-Pine Forest Northeastern Interior Dry-Mesic Oak Forest Northern Atlantic Coastal Plain Hardwood Forest Southern Appalachian Oak Forest Southern Atlantic Coastal Plain Dry and Dry-Mesic Oak Forest Southern Piedmont Dry Oak-(Pine) Forest Southern Ridge and Valley / Cumberland Dry Calcareous Ravine
5	Spruce-fir forests	NNE	8.2	American Marten Blackpoll Warbler Spruce Grouse White-throated Sparrow	Bay-breasted Warbler Bicknell's Thrush Black-backed Woodpecker Blackburnian Warbler Black-throated Green Warbler Bonaparte's Gull Boreal Chickadee Boreal Owl Brown Creeper Cape May Warbler Gray Jay Lynx Northern Saw-whet Owl Olive-sided Flycatcher Palm Warbler Pine Grosbeak Purple Finch Sharp-shinned Hawk Yellow-bellied Flycatcher	Acadian-Appalachian Montane Spruce-Fir Forest Acadian Low-Elevation Spruce-Fir Forest and Flats Acadian Sub-Boreal Spruce Barrens Boreal-Laurentian Conifer Acidic Swamp Boreal Jack Pine-Black Spruce Forest

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6	Swamps	NNE	3.0	Northern Waterthrush	Canada Warbler Eastern Massasauga Great-crested Flycatcher Indiana Bat Purple Finch Rose-breasted Grosbeak Rusty Blackbird Willow Flycatcher	Acadian-Appalachian Conifer Seepage Forest Laurentian-Acadian Alkaline Conifer-Hardwood Swamp North-Central Appalachian Acidic Swamp North-Central Interior and Appalachian Rich Swamp North-Central Interior Wet Flatwoods Northern Appalachian-Acadian Conifer-Hardwood Acidic Swamp Northern Atlantic Coastal Plain Basin Peat Swamp
7	Swamps	MidA	2.5	None selected		
8	Conifer swamps	SNE	1.5	None selected		
9	Hardwood swamps	SNE	1.5	Northern Waterthrush	Carolina Wren Red-shouldered Hawk Rose-breasted Grosbeak Veery White-eyed Vireo Willow Flycatcher Wood Duck	Central Interior Highlands and Appalachian Sinkhole and Depression Pond High Allegheny Wetland North-Central Appalachian Acidic Swamp North-Central Appalachian Seepage Fen North-Central Interior and Appalachian Rich Swamp North-Central Interior Wet Flatwoods Northern Atlantic Coastal Plain Basin Peat Swamp Northern Atlantic Coastal Plain Basin Swamp and Wet Hardwood Forest
10	Freshwater marshes & shrub-swamps	MidA	1.7	Bog Turtle King Rail Least Bittern Marsh Wren Northern Pintail	American Bittern American Black Duck American Coot American Wigeon Bank Swallow Barn Swallow Black Rail Blue-winged Teal Canada Goose Common Gallinule Gadwall Green-winged Teal Glossy Ibis Least Sandpiper Lesser Yellowlegs Mallard Northern Harrier Pectoral Sandpiper Sedge Wren Short-eared Owl Solitary Sandpiper Sora	Atlantic Coastal Plain Embayed Region Tidal Freshwater Marsh Laurentian-Acadian Freshwater Marsh Laurentian-Acadian Wet Meadow-Shrub Swamp Modified/Managed Marsh Northern Atlantic Coastal Plain Fresh and Oligohaline Tidal Marsh

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#	General Habitat Type	Sub-region	Acres in LCC (million)	Representative Species	Species Represented (of those considered)	Specific Habitats (Ecological Systems) of the General Habitat Type
					Spatterdock Spring Blue Darner Ruddy Duck Yellow-crowned Night-Heron	
11	Shrub-swamps & floodplain forest	NNE, SNE	1.0	Spotted Turtle Warbling Vireo Willow Flycatcher Wood Turtle	American Redstart Baltimore Oriole Barn Swallow Eastern Kingbird Gray Catbird Fowler's Toad Furbish Lousewort Hessel's Hairstreak Indiana Bat Marbled Salamander Prothonotary Warbler Rapids Clubtail Red-shouldered Hawk Rose-breasted Grosbeak Veery White-eyed Vireo Wood Duck Wood Thrush Yellow-billed Cuckoo	Laurentian-Acadian Floodplain Systems Laurentian-Acadian Wet Meadow-Shrub Swamp Northern Atlantic Coastal Plain Pond Northern Atlantic Coastal Plain Tidal Swamp
12	Freshwater marshes	NNE, SNE	0.7	American Black Duck American Bittern Marsh Wren Virginia Rail	American Coot Bank Swallow Barn Owl Blue-winged Teal Canada Goose Common Gallinule Gadwall Glossy Ibis Green-winged Teal Hooded Merganser Jefferson Salamander King Rail Least Bittern Least Sandpiper Lesser Yellowlegs Little Blue Heron Mallard Northern Harrier Northern Pintail Pectoral Sandpiper Pied-billed Grebe Ruddy Duck Sedge Wren Short-eared Owl	Laurentian-Acadian Freshwater Marsh Northern Atlantic Coastal Plain Fresh and Oligohaline Tidal Marsh

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#	General Habitat Type	Sub-region	Acres in LCC (million)	Representative Species	Species Represented (of those considered)	Specific Habitats (Ecological Systems) of the General Habitat Type
					Snowy Egret Solitary Sandpiper Sora Spatterdock Spring Blue Darner Spotted Turtle Yellow-crowned Night-Heron Wood Duck	
13	Pine barrens & maritime forest	SNE, MidA	0.7	Brown-headed Nuthatch Prairie Warbler E. Hognose Snake Northern Pinesnake	American Chaffseed Brown Thrasher Eastern Spadefoot Toad Eastern Towhee Field Sparrow Gray Catbird Karner Blue Butterfly Orchard Oriole Pine Warbler	Atlantic Coastal Plain Peatland Pocosin and Canebrake Central Atlantic Coastal Plain Maritime Forest Great Lakes Alvar Northeastern Interior Pine Barrens Northern Atlantic Coastal Plain Maritime Forest Northern Atlantic Coastal Plain Pitch Pine Barrens Northern Atlantic Coastal Plain Pitch Pine Lowland
14	Salt marshes	All	0.7	American Black Duck Clapper Rail Nelson's Sparrow No. Diamond-backed Terrapin Saltmarsh Sparrow Snowy Egret Willet	American Coot American Wigeon Bald Eagle Black Rail Black Skimmer Bonaparte's Gull Brant Canada Goose Common Tern Eastern Kingbird Forster's Tern Gadwall Glossy Ibis Greater Scaup Greater Yellowlegs Green-winged Teal Gull-billed Tern Horned Grebe Hudsonian Godwit Kemp's Ridley Sea Turtle King Rail Least Bittern Lesser Scaup Lesser Yellowlegs Little Blue Heron Little Gull Marsh Wren Northern Harrier Northern Pintail Royal Tern	Acadian Coastal Salt Marsh Acadian Estuary Marsh Atlantic Coastal Plain Embayed Region Tidal Salt and Brackish Marsh Northern Atlantic Coastal Plain Brackish Tidal Marsh Northern Atlantic Coastal Plain Tidal Salt Marsh

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					Ruddy Duck Sandwich Tern Savannah Sparrow (Ipswich) Seaside Sparrow Sedge Wren Semipalmated Plover Sensitive Joint-Vetch Short-billed Dowitcher Short-eared Owl Snow Goose Sora Swamp Sparrow (coastal plain) Tricolored Heron Tundra Swan Virginia Rail Whimbrel White-rumped Sandpiper Wilson's Phalarope Yellow Rail Yellow-crowned Night-Heron	
15	Peatland (bogs, fens)	NNE, SNE	0.5	Mink Frog Palm Warbler (none selected SNE)	American Black Duck Black-backed Woodpecker Bog Turtle Eastern Box Turtle Eastern Kingbird Eastern Ribbonsnake Houghton's Goldenrod Northern Harrier Olive-sided Flycatcher Southern Bog Lemming Spatterdock Spring Blue Darner	Acadian Maritime Bog Atlantic Coastal Plain Northern Bog Boreal-Laurentian Bog Boreal-Laurentian-Acadian Acidic Basin Fen Laurentian-Acadian Alkaline Fen North-Central Interior and Appalachian Acidic Peat
16	Rocky outcrops	NNE, SNE	0.2	None selected		
17	Cliffs & talus	All	0.2	None selected		
18	Alpine tundra & krummholz	NNE	<0.2	Bicknell's Thrush alpine plant (e.g., Mt. Avens)		Acadian-Appalachian Alpine Tundra Acadian-Appalachian Subalpine Woodland and Heath-Krummholz
19	Rocky coast and islands	NNE, SNE	<0.2	American Oystercatcher Common Eider Common Tern Purple Sandpiper	Arctic Tern Great Cormorant Herring Gull Horned Grebe Killdeer Leach's Storm-petrel Least Sandpiper Little Blue Heron Manx Shearwater	Acadian-North Atlantic Rocky Coast Coastal Islands (rocky) North Atlantic Cobble Shore North Atlantic Rocky Intertidal

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#	General Habitat Type	Sub-region	Acres in LCC (million)	Representative Species	Species Represented (of those considered)	Specific Habitats (Ecological Systems) of the General Habitat Type
					Northern Gannet Razorbill Roseate Tern Royal Tern Short-eared Owl Snowy Egret	
20	Sandy beaches and mudflats	All	Est. not available	Horseshoe Crab Piping Plover Sanderling Red Knot Least Tern Common Tern Black Skimmer Semipalmated Sandpiper American Black Duck Red Knot	American Golden-Plover American Oystercatcher Arctic Tern Black-bellied Plover Common Tern Dunlin Forster's Tern Gull-billed Tern Horned Grebe Hudsonian Godwit Killdeer Marbled Godwit Northeastern Tiger-beetle Royal Tern Seabeach Amaranth Snowy Egret Tricolored Heron Western Sandpiper Wilson's Plover	Coastal Islands (sandy) North Atlantic Coastal Plain Sandy Beach North Atlantic Intertidal Mudflat North Atlantic Intertidal Sand Flat
21	Dunes & maritime grasslands	All	<0.2	Common Nighthawk (none selected NNE, SNE)	(see also pasture/ hay/ grassland)	Northern Atlantic Coastal Plain Dune and Maritime Grassland
22	Woodlands (natural)	All	<0.2	Eastern Towhee American Woodcock Prairie Warbler Eastern Whip-poor-will Bur Oak (serpentine)	Brown Thrasher Eastern Red Bat Field Sparrow Gray Catbird Indigo Bunting Karner Blue Butterfly Orchard Oriole Peters Mountain Mallow Red-headed Woodpecker Silver-haired Bat Smooth Coneflower	Appalachian Shale Barrens Central Appalachian Alkaline Glade and Woodland Central Appalachian Pine-Oak Rocky Woodland Eastern Serpentine Woodland Great Lakes Alvar Northeastern Interior Pine Barrens Northern Atlantic Coastal Plain Maritime Forest Piedmont Hardpan Woodland and Forest Southern and Central Appalachian Mafic Glade and Barrens Southern Appalachian Montane Pine Forest and Woodland Southern Piedmont Glade and Barrens
23	Floodplain forest	MidA	<0.2	Eastern Red Bat Louisiana Waterthrush Kentucky Warbler Marbled Salamander Prothonotary Warbler Wood Duck	Acadian Flycatcher American Redstart Bald Eagle Black-throated Green Warbler Carolina Wren Cerulean Warbler Eastern Ribbonsnake	Atlantic Coastal Plain Blackwater Stream Floodplain Forest Atlantic Coastal Plain Brownwater Stream Floodplain Forest Atlantic Coastal Plain Small Brownwater River Floodplain Forest Central Appalachian River Floodplain

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					Eastern Spadefoot Toad Fowler's Toad Hooded Merganser Hooded Warbler Jefferson Salamander Northern Parula Swamp Pink Red-headed Woodpecker Red-shouldered Hawk Spotted Turtle Veery Virginia Spiraea Willow Flycatcher Wood Turtle Yellow-billed Cuckoo Yellow-throated Vireo Yellow-throated Warbler	Central Appalachian Stream and Riparian Northern Atlantic Coastal Plain Stream and River Southern Piedmont Large Floodplain Forest Southern Piedmont Small Floodplain and Riparian Forest
24	Vernal pools	All	Est. not available	Spotted Salamander Wood Frog	Fowler's Toad	Palustrine – Vernal Pools
25	Lacustrine & palustrine open water	All	Est. not available	Common Loon Common Merganser Painted Turtle Ring-necked Duck	American Coot Bald Eagle Barn Swallow Black Tern Common Gallinule Common Goldeneye Gadwall Hooded Merganser Lesser Scaup Northern Pintail Northern Redbelly Cooter Pied-billed Grebe Red-breasted Merganser Redhead Spatterdock Spring Blue Darner	Lacustrine – Limnetic Lacustrine - Littoral Palustrine - Open water
26	Estuarine & marine coastal	All	Est. not available	Black Scoter Bufflehead Canvasback Common Eider Common Loon Common Tern Loggerhead Seaturtle Long-tailed Duck No. Diamond-backed Terrapin Red-breasted Merganser Surf Scoter White-winged Scoter	Arctic Tern Atlantic Puffin Barrow's Goldeneye Black Skimmer Bridled Tern Brown Pelican Great Cormorant Greater Scaup Green Sea-turtle Gull-billed Tern Harlequin Duck Hawksbill Sea-turtle	Estuarine - Open water Marine - Subtidal

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					Herring Gull Horned Grebe Horseshoe Crab Kemp's Ridley Sea-turtle Leach's Storm-petrel Least Tern Leatherback Sea-turtle Little Blue Heron Little Gull Manx Shearwater Northern Gannet Razorbill Red Phalarope Red-necked Grebe Red-throated Loon Snowy Egret Virginia Rail	
27	Erosional bluff	MidA	<0.1	Bank Swallow Puritan Tiger Beetle		Northeastern Erosional Bluff
28	Pasture/hay/grassland	All	All agricult. = 11.4	Bobolink Eastern Meadowlark Grasshopper Sparrow Upland Sandpiper	American Burying-beetle American Chaffseed American Kestrel American Woodcock Barn Owl Buff-breasted Sandpiper Eastern Prairie-fringed Orchid Field Sparrow Henslow's Sparrow Horned Lark Killdeer Loggerhead Shrike Long-eared Owl New England Cottontail Northern Bobwhite Northern Harrier Purple Martin Sandplain Gerardia Short-eared Owl Vesper Sparrow Wood Turtle	Pasture/hay/grassland
29	Old fields and shrubland	SNE, MidA	Est. not available	Blue-winged Warbler Brown Thrasher Field Sparrow	Hessel's Hairstreak Knieskern's beaked-rush Indigo Bunting Michaux Sumac New England Cottontail Rose-breasted Grosbeak	Old fields Powerline right-of-way Residential - rural Shrubland

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					Smooth Coneflower Song Sparrow Yellow-billed Cuckoo	
30	Caves and mines	SNE, MidA	Est. not available	Little Brown Bat Tricolored Bat		Caves/mines