

Literature Cited

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CANR	University of Connecticut, College of Agriculture and Natural Resources. Accessed on June 8, 2010. Available online at http://www.canr.uconn.edu/CANR/
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APPENDIX 1

NA/NAASF Base Indicators of Forest Sustainability and Associated Metrics 1

These indicators and metrics span the Montreal Process criteria and are recommended for use in NA-wide and State forest sustainability assessments.

Criterion 1. Conservation of Biological Diversity

1. Area of total land, forest land, and reserved forest land

- 1.1 Forest and total land area
- 1.2 Forest density
- 1.3 Forest land and population
- 1.4 Reserved forest land
- 1.5 Urban forest

2. Forest type, size class, age class, and successional stage

- 2.1 Forest cover type groups
- 2.2 Size class
- 2.3 Age group
- Successional stage (*text document; no data/graphs*)

3. Extent of forest land conversion, fragmentation, and parcelization

- 3.1 Fragmentation (*text report with links; no data/graphs*)
- 3.2 Forest land developed
- 3.3 Net change in forest land
- 3.4 Additions to and conversions from forest land
- 3.5 Forest parcel sizes

4. Status of forest/woodland communities and associated species of concern

- 4.1 Forest and woodland communities
- 4.2 Forest-associated and all species
- 4.3 Forest-associated species of concern by taxonomic group
- 4.4 Bird populations

Criterion 2. Maintenance of Productive Capacity of Forest Ecosystems

5. Area of timberland

- 5.1 Amount of timberland

6. Annual removal of merchantable wood volume compared with net growth

- 6.1 Net growth and removals
- 6.2 Type of removals

Criterion 3. Maintenance of Forest Ecosystem Health and Vitality

7. Area of forest land affected by potentially damaging agents

- 7.1 Tree mortality and damage type
- 7.2 Wildfire
- 7.3 Drought
- 7.4 Insects, diseases, plants, and animals

Criterion 4. Conservation and Maintenance of Soil and Water Resources

8. Soil quality on forest land

- 8.1 Soil pH
- 8.2 Total soil carbon
- 8.3 Estimated bare soil

8.4 Bulk density
8.5 Calcium-aluminum ratio
9. Area of forest land adjacent to surface water, and forest land by watershed
9.1 Forested riparian area
9.2 Forest land by watershed
10. Water quality in forested areas
10.1 Water quality in forested areas (<i>text report with links, no data/graphs</i>)
10.2 Stream miles impaired by percentage of watershed forested
Criterion 5. Maintenance of Forest Contribution to Global Carbon Cycles
11. Forest ecosystem biomass and forest carbon pools
11.1 Forest ecosystem biomass
11.2 Forest carbon pools
11.3 Forest carbon by forest type
11.4 Change in forest carbon
Criterion 6. Maintenance and Enhancement of Long-Term Multiple Socioeconomic Benefits to Meet the Needs of Societies
12. Wood and wood products production, consumption, and trade
12.1 Value of wood-related products
12.2 Production of roundwood
12.3 Production and consumption of roundwood equivalent
12.4 Recovered paper
12.5 Bioenergy (<i>text report with links; no data/graphs</i>)
Trade or wood flow (<i>text document; no data/graphs</i>)
Nontimber forest products (<i>text document; no data/graphs</i>)
13. Outdoor recreational participation and facilities
13.1 Participation in outdoor recreation
13.2 Federal land open to recreation
13.3 Recreational facilities on State land
13.4 Trails
13.5 Campgrounds
13.6 Recreational facilities in national forests
14. Investments in forest health, management, research, and wood processing
14.1 USDA Forest Service Northeastern Area State and Private Forestry funding
14.2 State forestry agency funding
14.3 Funding for forestry research at universities
14.4 USDA Forest Service Research funding
14.5 Capital expenditures by manufacturers of wood-related products
15. Forest ownership, land use, and specially designated areas
15.1 Forest land ownership
15.2 State lands
15.3 Protected land
15.4 Private land with public conservation easements
15.5 Forest land in tax reduction programs
15.6 Forest certification

16. Employment and wages in forest-related sectors

16.1 Wood-related products manufacturing employees

16.2 State forestry employees

16.3 USDA Forest Service employees

16.4 Wood-related products manufacturing payroll and wages

16.5 State forestry salaries

Criterion 7. Legal, Institutional, and Economic Framework for Forest Conservation and Sustainable Management

17. Forest management standards/guidelines

17.1 Types of forest management standards/guidelines

17.2 Voluntary and mandatory standards/guidelines

17.3 Monitoring of standards/guidelines

18. Forest-related planning, assessment, policy, and law

18.1 State forest planning

18.2 Private nonindustry forest planning

18.3 National forest planning

18.4 State forest assessments

18.5 Forest laws and policies

18.6 State forest advisory committees

1 No priority is implied in the numeric listing of the criteria, indicators, and metrics.

APPENDIX 2

Species by Habitat Upland Forest (Habitat 1) GCN Species by Taxon

Mammal

Most Important

Eastern Small-footed Bat
Hoary Bat
Indiana Bat
Red Bat
Silver-haired Bat

Very Important

Bobcat
Deer Mouse
Northern Flying Squirrel

Important

Black Bear
Hairy-Tailed Mole
Little Brown Bat
Long-tailed Weasel
Northern Long-eared Bat
Short-tailed Weasel
Southern Red-backed Vole
Tricolor Bat
Woodland Vole

Bird

Very Important

Acadian Flycatcher
Bald Eagle
Black-and-white Warbler
Black-throated Blue Warbler
Blue-headed Vireo
Cerulean Warbler
Golden-crowned Kinglet
Great Crested Flycatcher
Hermit Thrush
Long-eared Owl
Northern Saw-whet Owl
Rose-breasted Grosbeak
Ruffed Grouse
Sharp-shinned Hawk
Wood Thrush
Worm-eating Warbler

Bird cont.

Important

Barred Owl
Bay-breasted Warbler
Blackburnian Warbler
Black-throated Green Warbler
Broad-winged Hawk
Brown Creeper
Cape May Warbler
Cooper's Hawk
Dark-eyed Junco
Eastern Wood-pewee
Gray-cheeked Thrush
Great Horned Owl
Hooded Warbler
Louisiana Waterthrush
Magnolia Warbler
Northern Flicker
Northern Goshawk
Northern Parula
Olive-sided Flycatcher
Ovenbird
Pileated Woodpecker
Purple Finch
Red-breasted Nuthatch
Scarlet Tanager
Swainson's Thrush
Winter Wren
Yellow-rumped Warbler
Yellow-throated Vireo

Reptile/Amphibian

Most Important

Blue-spotted Salamander (diploid)
Eastern Spadefoot
Timber Rattlesnake

Very Important

Blue-spotted Salamander (complex)

Reptile/Amphibian cont.

Common Five-lined Skink
Eastern Box Turtle
Eastern Hog-nosed Snake
Eastern Ribbonsnake
Jefferson Salamander
Northern Leopard Frog
Northern Slimy Salamander
Northern Spring Salamander
Spotted Turtle
Wood Turtle

Important

Copperhead
Eastern Newt
Eastern Racer
Fowler's Toad
Gray Treefrog
Marbled Salamander
Northern Dusky Salamander
Spotted Salamander
Wood Frog

Invertebrate

Most Important

Columbine Duskywing

Very Important

Common Roadside Skipper

Important

American Burying Beetle
Atlantis Fritillary
Aureolaria Seed Borer
Black Lordithon Rove Beetle
Calosoma wilcoxi
Carabus sylvosus
Cicada
Columbine Borer
Gray Comma
Imperial Moth
Purse-web Spider
Regal Moth

Upland Woodland & Shrub (Habitat 2)

GCN Species by Taxon

Mammals

Most Important

Eastern Small-footed Bat
 Hoary Bat
 Indiana Bat
 Least Shrew
 New England Cottontail
 Red Bat
 Silver-haired Bat

Very Important

Bobcat
 Meadow Jumping Mouse

Important

Black Bear
 Long-tailed Weasel
 Short-tailed Weasel
 Southern Red-backed Vole
 Tricolor Bat
 Woodland Vole

Bird

Most Important

Golden-winged Warbler
 Northern Harrier

Very Important

American Kestrel
 Brown Thrasher
 Chestnut-sided Warbler
 Common Raven
 Eastern Towhee
 Glossy Ibis
 Great Crested Flycatcher
 Ipswich Sparrow
 Northern Bobwhite
 Peregrine Falcon
 Short-eared Owl
 Whip-poor-will
 Worm-eating Warbler
 Yellow-crowned Night-heron

Mammal

Important

Bank Swallow
 Black-crowned Night-heron
 Black-throated Green Warbler
 Cape May Warbler
 Eastern Kingbird
 Eastern Wood-pewee
 Gray-cheeked Thrush
 Great Horned Owl
 Northern Flicker
 Purple Martin
 Snowy Owl
 White-eyed Vireo
 Yellow-rumped Warbler

Reptile/Amphibian

Most Important

Blue-spotted Salamander
 (diploid)

Eastern Spadefoot
 Timber Rattlesnake

Very Important

Blue-spotted Salamander
 (complex)
 Common Five-lined Skink
 Eastern Box Turtle
 Eastern Hog-nosed Snake
 Eastern Ribbonsnake
 Northern Leopard Frog
 Spotted Turtle

Important

Copperhead
 Eastern Newt
 Eastern Racer
 Fowler's Toad
 Marbled Salamander
 Smooth Greensnake
 Spotted Salamander
 Wood Frog

Invertebrate

Most Important

Buck Moth
 Columbine Duskywing
 Northern Metalmark
 Persius Duskywing
 Silvery Checkerspot

Very Important

Barrens Itame
 Coastal Heathland Cutworm
 Frosted Elfin
 Herodias Underwing
 Pink Sallow
 Slender Clearwing
 Violet Dart Moth
 Zale submediana

Important

Acronicta lanceolaria
 Barrens Dagger Moth
 Barrens Metarranthis Moth
 Chaetagnaea cerata
 Eucloptocnemis fimbriaris
 Hoary Elfin
 Horace's Duskywing
 Lemmer's Noctuid Moth
 Mottled Duskywing
 New Jersey Tea Inchworm
 Pale Green Pinion Moth
 Pine Barrens Zanclognatha
 Purse-web Spider
 Schinia spinosae
 Scrub Euchlaena
 Spotted Dart
 Yellow-horned Beaded

Lacewing

Zale curema
 Zale oblique

Forested Inland Wetland (Habitat 4)
GCN Species by Taxon

Mammal

Most Important
Eastern Small-footed Bat
Hoary Bat
Indiana Bat
Red Bat
Silver-haired Bat
Southern Bog Lemming
Very Important
Bobcat
Northern Water Shrew
Important
Black Bear
Hairy-Tailed Mole
Little Brown Bat
Mink
Northern Long-eared Bat
Tricolor Bat

Bird

Very Important
American Black Duck
American Woodcock
Black-billed Cuckoo
Black-throated Blue Warbler
Canada Warbler
Cerulean Warbler
Chestnut-sided Warbler
Green Heron
Hermit Thrush
Hooded Merganser
Least Flycatcher

Bird cont.

Northern Saw-whet Owl
Rose-breasted Grosbeak
Yellow-billed Cuckoo
Important
American Redstart
Baltimore Oriole
Barred Owl
Black-throated Green Warbler
Broad-winged Hawk
Eastern Kingbird
Eastern Screech-owl
Gray-cheeked Thrush
Great Blue Heron
Louisiana Waterthrush
Northern Flicker
Northern Parula
Northern Waterthrush
Purple Martin
Red-shouldered Hawk
Veery
Winter Wren
Yellow-throated Vireo
Reptile/Amphibian
Most Important
Blue-spotted Salamander
(diploid)
Eastern Spadefoot
Very Important
Blue-spotted Salamander
(complex)

Reptile/Amphibian cont.

Eastern Box Turtle
Eastern Ribbonsnake
Spotted Turtle
Wood Turtle
Important
Eastern Newt
Fowler's Toad
Marbled Salamander
Spotted Salamander
Wood Frog

Invertebrate

Most Important
Hessel's Hairstreak
Very Important
Pink Streak
Two-spotted Skipper
Important
Annotated Sallow Moth
Bembidion semicinctum
Brachinus cyanipennis
Carabus vinctus
Coastal Pond Amphipod
Goniops chrysocoma
Gray Comma
Hybomitra trepida
Hybomitra typhus
Lemmer's Noctuid Moth
Loxandrus vitiosus
Mystic Valley Amphipod

Intensively Managed Early Successional Shrublands and Forests (Habitat 12)
GCN Species by Taxon

Mammal

Most Important

Eastern Small-footed Bat
Hoary Bat
Indiana Bat
New England Cottontail
Red Bat
Silver-haired Bat

Important

Black Bear
Little Brown Bat
Northern Long-eared Bat
Tricolor Bat

Bird

Most Important

Barn Owl
Common Nighthawk
Golden-winged Warbler
Northern Harrier
Red-headed Woodpecker
Yellow-breasted Chat

Very Important

American Kestrel
American Woodcock
Blue-winged Warbler

Bird cont.

Brown Thrasher
Chestnut-sided Warbler
Eastern Towhee
Field Sparrow
Great Crested Flycatcher
Indigo Bunting
Northern Bobwhite
Prairie Warbler
Ruffed Grouse
Savannah Sparrow
Whip-poor-will
Yellow-billed Cuckoo

Important

American Redstart
Eastern Kingbird
Eastern Screech-owl
Eastern Wood-pewee
Gray Catbird
Great Horned Owl
Hooded Warbler
Magnolia Warbler
Orchard Oriole
Rough-legged Hawk
Ruby-throated Hummingbird

Bird cont.

Snowy Owl
Warbling Vireo
White-eyed Vireo
Willow Flycatcher

Reptile/Amphibian

Very Important

Eastern Hog-nosed Snake
Spotted Turtle
Wood Turtle

Important

Copperhead
Eastern Racer
Smooth Greensnake

Invertebrate

Very Important

Harris's Checkerspot

Important

Bronze Copper
Cicindela purpurea
Cuculia speyeri
Culvers Root Borer
Harpalus caliginosus
Hop Vine Borer Moth
Regal Fritillary

APPENDIX 3 Species Richness and Distribution in Southern New England Tables by Taxa

Figure 1.1 Mammal Species Richness and Distribution in Southern New England (Source: SNEGAP, Zuckerberg et al., 2004)

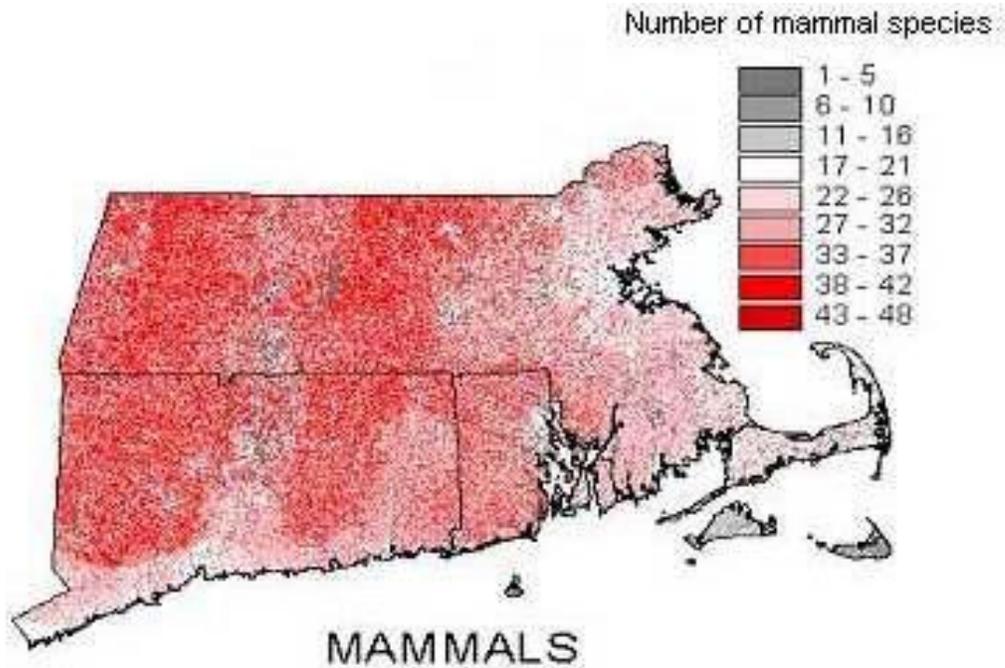


Figure 1.2 Bird Species Richness and Distribution in Southern New England (Source: SNEGAP, Zuckerberg et al., 2004)

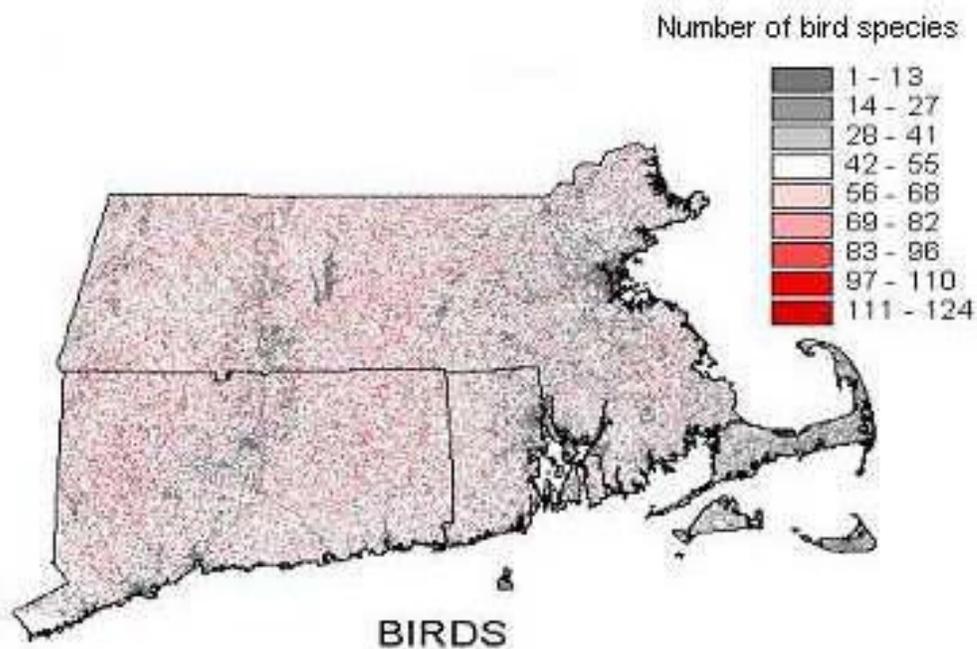


Figure 1.3 Species Richness for Common Bird Habitat Guilds (Source: SNE-GAP, Zuckerberg et al., 2004)

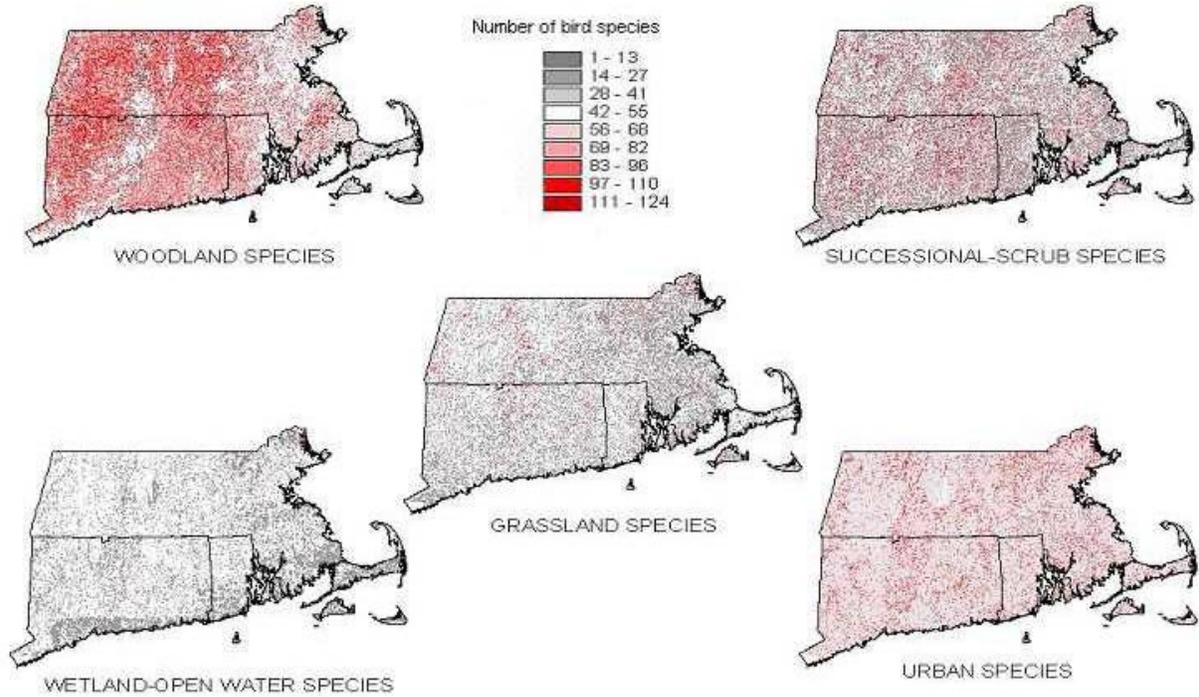


Figure 1.7 Predicted Distribution of Amphibians in Southern New England. (Source: SNE-GAP, Zuckerberg et al., 2004)

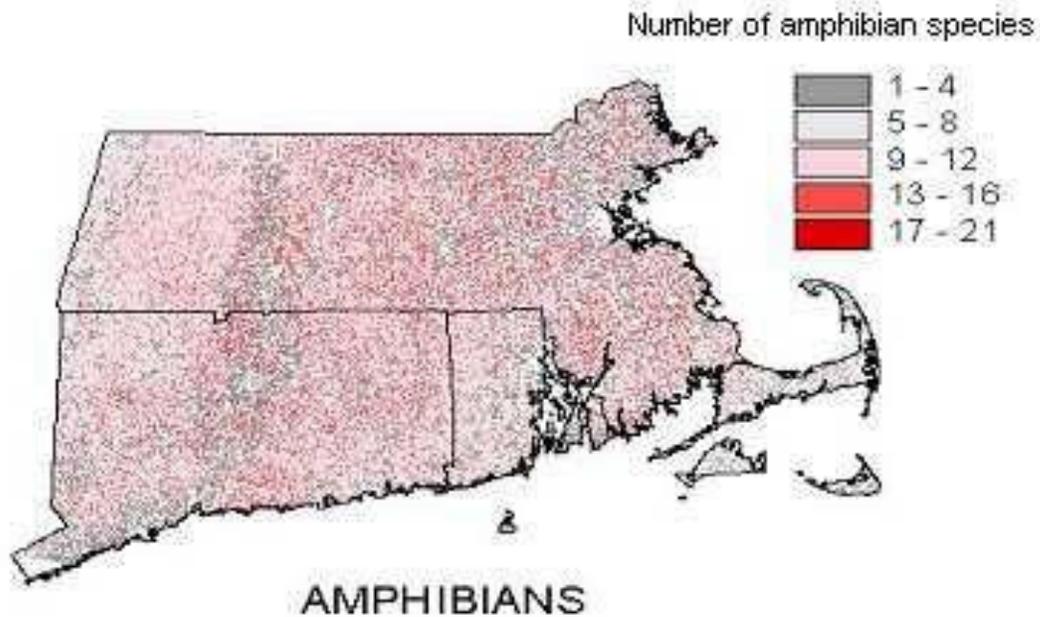


Figure 1.8 Predicted Distribution of Reptiles in Southern New England. (Source: SNE-GAP, Zuckerberg et al., 2004)

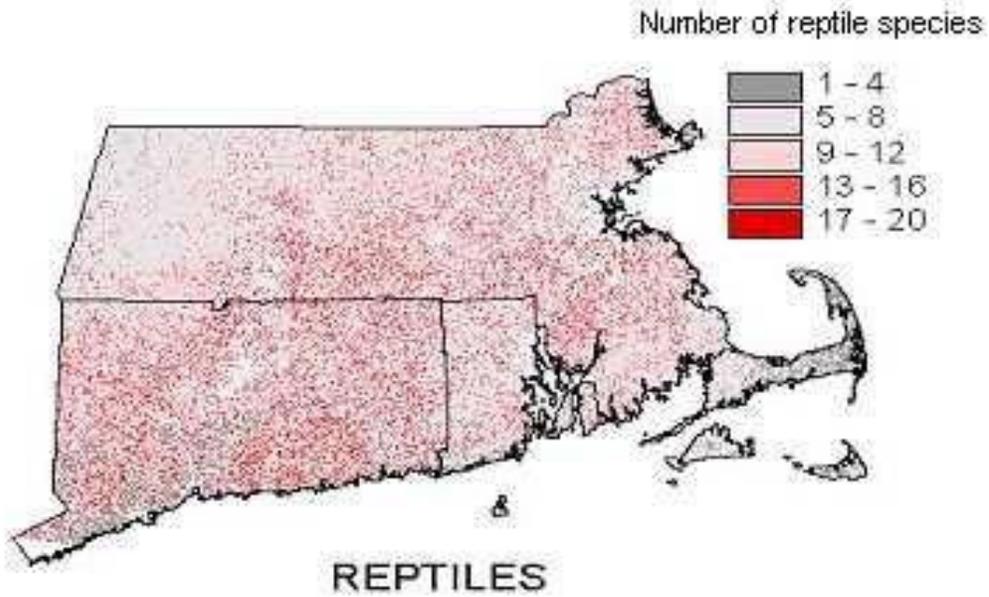


Figure 1.9 Total Number of Fish Species per Site (Source: CT DEP Stream Survey 1988-94)

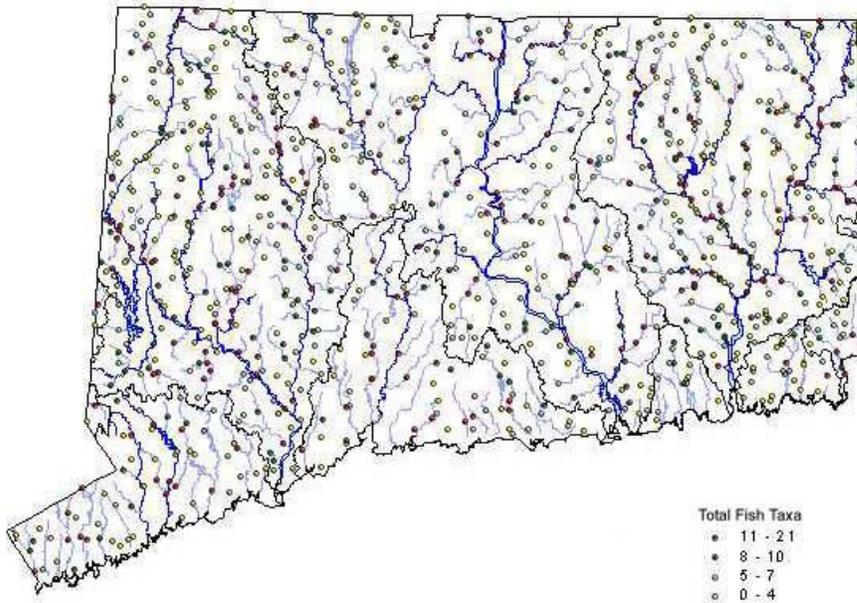
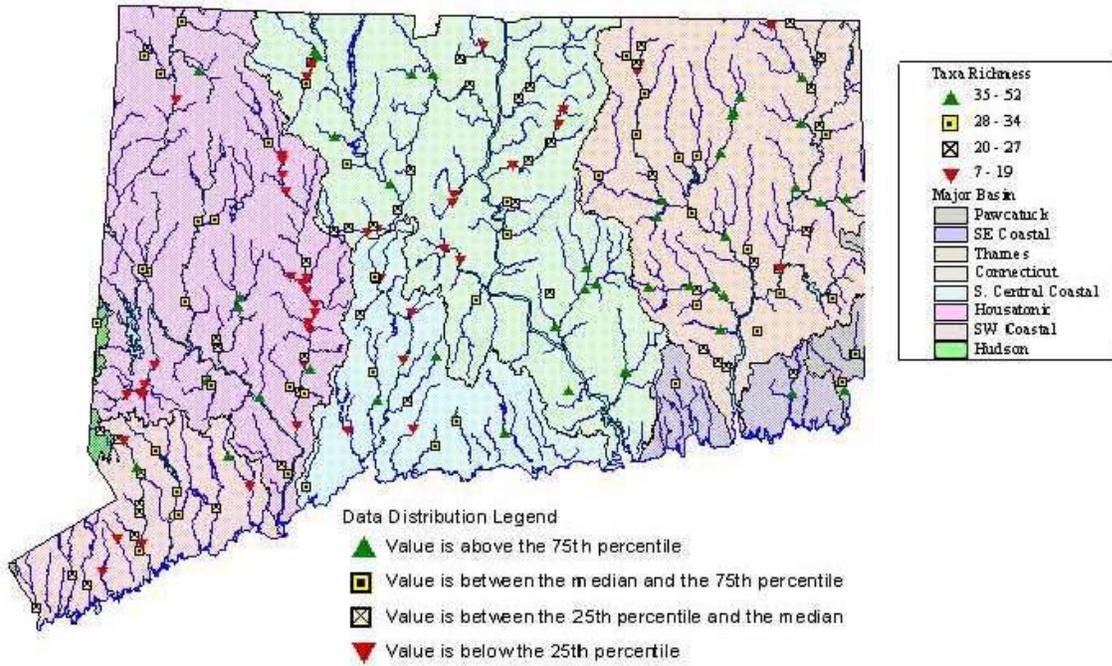


Figure 1.10. Distribution of Benthic Macroinvertebrates in Connecticut (Source: CT DEP BWM Rotating Basin Strategy)



APPENDIX 4 Forest Health Indicator Species (Birds) as Compiled by the Connecticut Forestlands Council Forest Ecosystem Health Committee

Deciduous Woodlands

- * Wood Thrush
- * Worm-eating Warbler
- * Scarlet Tanager
- * Louisiana Waterthrush
- * Cerulean Warbler
- * E Bald Eagle (?)
- * Hairy Woodpecker
- * Eastern Wood-Pewee
- * Least Flycatcher
- * Great Crested Flycatcher
- * Veery
- * Black-and-White Warbler
- * Ovenbird
- * Barred Owl
- * Blue-gray Gnatcatcher
- * Broad-winged Hawk
- * Cooper's Hawk
- * Northern Goshawk
- * Pileated Woodpecker
- * Red-shouldered Hawk
- * Red-eyed Vireo

Shrubland/young forest

- * Blue-winged Warbler
- * E Golden-winged Warbler
- * Prairie Warbler
- * American Woodcock
- * Chestnut-sided Warbler
- * E Yellow-breasted Chat
- * SC Northern Saw-whet Owl
- * SC Whip-poor-will
- * SC Brown Thrasher
- * Gray Catbird

Shrubland/young forest cont.

- * Eastern Towhee
- * Field Sparrow (?)
- * Ruffed Grouse
- * Eastern Screech Owl
- * White-eyed Vireo

Forest edge

- * Baltimore Oriole
- * Black-billed Cuckoo
- * Yellow-billed Cuckoo
- * E Red-headed Woodpecker
- * Orchard Oriole
- * Indigo Bunting
- * Rose-breasted Grosbeak
- * Northern Flicker
- * Ruby-throated Hummingbird
- * Warbling Vireo
- * Yellow-throated Vireo

Northern Forest

- * Canada Warbler
- * Black-throated Blue Warbler
- * Blackburnian Warbler
- * E Sharp-shinned Hawk
- * SC Common Raven
- * Purple Finch
- * Hermit Thrush
- * Blue-headed Vireo
- * Golden-crowned Kinglet
- * American Redstart
- * Black-throated Green Warbler
- * Brown Creeper
- * Dark-eyed Junco

Northern Forest cont.

- * Magnolia Warbler
- * Red-breasted Nuthatch
- * Swainson's Thrush
- * Winter Wren
- * Yellow-rumped Warbler
- * Northern Waterthrush

Southern Forest

- * Acadian Flycatcher
- * Hooded Warbler
- * Red-bellied Woodpecker

White Pine Forest

- * Pine Warbler

Special Categories

Air quality

- * SC Northern Parula

Shrubby wetlands

- * SC Alder Flycatcher
- * Willow Flycatcher

Questionable Category*

- * Great Blue Heron
- * Great Horned Owl
- * Black-capped Chickadee
- * Tufted Titmouse
- * White-breasted Nuthatch
- * Yellow-bell. Sapsucker
- * Wild Turkey

* Birds that use forests to a certain extent, but a determination hasn't been made as to what they can be used to indicate.

APPENDIX 5

Table 5.1 Key Habitat Types, their Associated Vegetative Communities, in relation to Ecoregions

Habitat	Vegetative Community	Ecoregion
1) Upland Forest	Dry Oak Forests on Sand and Gravel	CT Valley, E CT, Coast
	b) Calcareous Forests	W CT (specifically Marble Valleys)
	c) Coniferous Forests	Throughout
	d) Old Growth Forests	W CT, TM
Upland Woodland and Shrub	a) Red Cedar Glades	Traprock – CT Valley, Limestone - W CT (Northern Marble Valley)
	b) Pitch Pine – Scrub Oak Woodlands	CT Valley, Coast, E CT, TM
	c) Coastal Shrublands and Heaths	Coast
Upland Herbaceous	a) Coastal Dunes	Coast
	b) Grassy Glades and Balds	W CT, TM, BVU, CT Valley
	c) Sandplain and other Warm Season Grasslands	CT Valley, Coast, E CT
	d) Sparsely Vegetated Sand and Gravel	CT Valley, Coast, E CT
Forested Inland Wetland	a) Atlantic White Cedar Swamps	E CT, eastern Coast
	b) Red/Black Spruce Swamps	TM, BVU, W CT
	c) Northern White Cedar Swamps	W CT (Northern Marble Valley)
	d) Floodplain Forests	Throughout
Shrub Inland Wetland	a) Bogs, Seeps, and Fens	Bogs - throughout except coast; Acidic Seeps - mostly throughout but poorly known; Acidic Fens - poorly known; Calcareous Fens - W CT (Northern Marble Valley); Sea level Fens – eastern Coast
Herbaceous Inland Wetland	a) Calcareous Spring Fens	W CT (specifically Northern Marble Valley)
	b) Freshwater Marshes	Throughout
Sparsely Vegetated Inland Wetland	a) Surface Springs	unknown
	b) Vernal Pools	Throughout
8) Tidal Wetland	a) Tidal Wetlands	Coast, Major River Estuaries
	b) Intertidal Beaches and Shores	Coast

Freshwater Aquatic	a) Large Rivers and Streams and their Associated Riparian Zones	Throughout
	b) Unrestricted, Free-flowing Streams	Throughout
	c) Cold Water Streams	Unknown
	d) Black Water Streams	Unknown
	e) Lakes and their Shorelines	Throughout
	f) Coastal Plain Ponds	CT Valley, central Coast
	g) Submerged Aquatic Beds	Throughout
Estuarine Aquatic	a) Coastal Rivers, Coves, and Embayments	Coast, LIS
	b) Vegetation Beds	Coast, LIS
	c) Hard Bottoms	Coast, LIS
	d) Sponge Beds	Coast, LIS
	e) Shellfish Reefs/Beds	Coast, LIS
	f) Sedimentary Bottoms	Coast, LIS
	g) Head-of-tide	Coast, LIS
	h) Open Water	Coast, LIS
11) Other	a) Traprock Ridges (various habitats)	CT Valley and Pomperaug outlier
	b) Offshore Islands (various habitats)	Coast, LIS
	c) Coastal Bluffs and Headlands	Coast
	d) Caves and other Subterranean Habitats	Caves - W CT (specifically Northern Marble Valley), Mines - W CT
	e) Man-made Aquatic Habitats	Throughout
	f) Urban Habitat	Throughout
12) Managed	a) Early Successional Shrublands and Forests	Throughout
	b) Cool Season Grasslands	Throughout
	c) Wet Meadows	Throughout

APPENDIX 6. Connecticut Endangered, Threatened, and Special Concern Species 2010

Group	Subgroup	Scientific Name	Common Name	State Protection Status 2010	Comments	Federal Status
Amphibians	Salamanders	<i>Ambystoma laterale</i>	Blue-spotted salamander (diploid populations)	E	diploid populations	
Amphibians	Frogs and Toads	<i>Scaphiopus holbrookii</i>	Eastern spadefoot	E		
Amphibians	Salamanders	<i>Ambystoma jeffersonianum</i>	Jefferson salamander "complex"	SC		
Amphibians	Salamanders	<i>Ambystoma laterale</i>	Blue-spotted salamander "complex"	SC		
Amphibians	Frogs and Toads	<i>Rana pipiens</i>	Northern leopard frog	SC		
Amphibians	Salamanders	<i>Gyrinophilus porphyriticus</i>	Northern spring salamander	T		
Amphibians	Salamanders	<i>Plethodon glutinosus</i>	Northern slimy salamander	T		
Birds	Hawks and Others	<i>Accipiter striatus</i>	Sharp-shinned hawk	E		
Birds	Perching Birds	<i>Ammodramus savannarum</i>	Grasshopper sparrow	E		
Birds	Owls	<i>Asio otus</i>	Long-eared owl	E		
Birds	Shorebirds, Terns and Others	<i>Bartramia longicauda</i>	Upland sandpiper	E		
Birds	Wading Birds	<i>Botaurus lentiginosus</i>	American bittern	E		
Birds	Goatsuckers	<i>Chordeiles minor</i>	Common nighthawk	E		
Birds	Hawks and Others	<i>Circus cyaneus</i>	Northern harrier	E		
Birds	Perching Birds	<i>Cistothorus platensis</i>	Sedge wren	E		
Birds	Perching Birds	<i>Eremophila alpestris</i>	Horned lark	E		
Birds	Rails and Others	<i>Gallinula chloropus</i>	Common moorhen	E		
Birds	Perching Birds	<i>Icteria virens</i>	Yellow-breasted chat	E		
Birds	Rails and Others	<i>Laterallus jamaicensis</i>	Black rail	E	Nesting population only.	
Birds	Woodpeckers	<i>Melanerpes</i>	Red-headed	E		

		erythrocephalus	woodpecker		
Birds	Grebes	Podilymbus podiceps	Pied-billed grebe	E	
Birds	Perching Birds	Poocetes gramineus	Vesper sparrow	E	
Birds	Rails and Others	Rallus elegans	King rail	E	Nesting population only.
Birds	Shorebirds, Terns and Others	Sterna dougallii	Roseate tern	E	Federally Endangered
Birds	Owls	Tyto alba	Barn owl	E	
Birds	Perching Birds	Vermivora chrysoptera	Golden-winged warbler	E	
Birds	Owls	Aegolius acadicus	Northern saw-whet owl	SC	
Birds	Perching Birds	Ammodramus caudacutus	Saltmarsh sharp-tailed sparrow	SC	
Birds	Hawks and Others	Buteo platypterus	Broad-winged hawk	SC	
Birds	Goatsuckers	Caprimulgus vociferus	Whip-poor-will	SC	
Birds	Perching Birds	Dolichonyx oryzivorus	Bobolink	SC	
Birds	Wading Birds	Egretta caerulea	Little blue heron	SC	
Birds	Perching Birds	Empidonax alnorum	Alder flycatcher	SC	
Birds	Loons	Gavia immer	Common loon	SC	
Birds	Wading Birds	Nyctanassa violacea	Yellow-crowned night-heron	SC	
Birds	Perching Birds	Parula americana	Northern parula	SC	
Birds	Perching Birds	Passerculus sandwichensis	Savannah sparrow	SC	
Birds	Perching Birds	Passerculus sandwichensis ssp. princeps	Ipswich sparrow	SC	(wintering populations)
Birds	Wading Birds	Plegadis falcinellus	Glossy ibis	SC	
Birds	Shorebirds, Terns and Others	Sterna hirundo	Common tern	SC	
Birds	Perching Birds	Sturnella magna	Eastern meadowlark	SC	
Birds	Perching Birds	Toxostoma rufum	Brown thrasher	SC	
Birds	Perching Birds	Ammodramus henslowii	Henslow's sparrow	SC*	
Birds	Shorebirds, Terns and Others	Numenius borealis	Eskimo curlew	SC*	Federally Endangered
Birds	Perching Birds	Ammodramus maritimus	Seaside sparrow	T	

Birds	Waterfowl	Anas discors	Blue-winged teal	T	Nesting population only.
Birds	Wading Birds	Ardea alba	Great egret	T	
Birds	Owls	Asio flammeus	Short-eared owl	T	Wintering populations.
Birds	Shorebirds, Terns and Others	Charadrius melodus	Piping plover	T	Federally Threatened
Birds	Wading Birds	Egretta thula	Snowy egret	T	
Birds	Hawks and Others	Falco peregrinus	Peregrine falcon	T	
Birds	Hawks and Others	Falco sparverius	American kestrel	T	
Birds	Shorebirds, Terns and Others	Haematopus palliatus	American oystercatcher	T	
Birds	Hawks and Others	Haliaeetus leucocephalus	Bald eagle	T	
Birds	Wading Birds	Ixobrychus exilis	Least bittern	T	
Birds	Perching Birds	Progne subis	Purple martin	T	
Birds	Shorebirds, Terns and Others	Sternula antillarum	Least tern	T	
Fish		Acipenser brevirostrum	Shortnose sturgeon	E	Federally Endangered
Fish		Lampetra appendix	American brook lamprey	E	
Fish		Lota lota	Burbot	E	
Fish		Osmerus mordax	Rainbow smelt	E	Anadromous populations only.
Fish		Alosa aestivalis	Blueback herring	SC	
Fish		Catostomus catostomus	Longnose sucker	SC	
Fish		Enneacanthus obesus	Banded sunfish	SC	
Fish		Notropis bifrenatus	Bridled shiner	SC	
Fish		Acipenser oxyrinchus oxyrinchus	Atlantic sturgeon	T	
Invertebrate Animal	Freshwater Mussels	Alasmidonta heterodon	Dwarf wedgemussel	E	Federally Endangered
Invertebrate Animal	Freshwater Mussels	Alasmidonta varicosa	Brook floater	E	

Invertebrate Animal	Skippers	<i>Amblyscirtes vialis</i>	Common roadside skipper	E	
Invertebrate Animal	Moths	<i>Anarta luteola</i>	Noctuid moth	E	
Invertebrate Animal	Butterflies	<i>Calephelis borealis</i>	Northern metalmark	E	
Invertebrate Animal	Butterflies	<i>Callophrys hesseli</i>	Hessel's hairstreak	E	
Invertebrate Animal	Moths	<i>Catocala herodias gerhardi</i>	Herodias underwing	E	
Invertebrate Animal	Beetles	<i>Cicindela lepida</i>	Dune ghost tiger beetle	E	
Invertebrate Animal	Beetles	<i>Cicindela puritana</i>	Puritan tiger beetle	E	Federally Threatened
Invertebrate Animal	Bees	<i>Epeoloides pilosula</i>	Macropis cuckoo	E	
Invertebrate Animal	Skippers	<i>Erynnis lucilius</i>	Columbine duskywing	E	
Invertebrate Animal	Skippers	<i>Erynnis persius persius</i>	Persius duskywing	E	
Invertebrate Animal	Crustacean	<i>Eubbranchipus holmanii</i>	Fairy shrimp	E	
Invertebrate Animal	Moths	<i>Grammia phyllira</i>	Phyllira tiger moth	E	
Invertebrate Animal	Moths	<i>Grammia speciosa</i>	Bog tiger moth	E	
Invertebrate Animal	Moths	<i>Hemileuca maia maia</i>	Buck moth	E	
Invertebrate Animal	Flies	<i>Hybomitra longiglossa</i>	Horse fly	E	
Invertebrate Animal	Freshwater Mussels	<i>Lampsilis cariosa</i>	Yellow lamp mussel	E	
Invertebrate Animal	Moths	<i>Metarranthis apiciaria</i>	Barrens metarranthis moth	E	
Invertebrate Animal	Moths	<i>Papaipema appassionata</i>	Pitcher plant borer	E	

Invertebrate Animal	Moths	<i>Phyllonorycter ledella</i>	Labrador tea tentiform leafminer	E
Invertebrate Animal	Dragonflies	<i>Williamsonia lintneri</i>	Banded bog skimmer	E
Invertebrate Animal	Beetles	<i>Agonum darlingtoni</i>	Ground beetle	SC
Invertebrate Animal	Beetles	<i>Agonum mutatum</i>	Ground beetle	SC
Invertebrate Animal	Moths	<i>Agrotis stigmata</i>	Spotted dart moth	SC
Invertebrate Animal	Beetles	<i>Amara chalcea</i>	Ground beetle	SC
Invertebrate Animal	Mayflies	<i>Anthopotamus verticis</i>	Tusked sprawler	SC
Invertebrate Animal	Moths	<i>Apamea burgessi</i>	Apamea moth	SC
Invertebrate Animal	Moths	<i>Apamea inordinata</i>	Apamea moth	SC
Invertebrate Animal	Moths	<i>Apamea lintneri</i>	Apamea moth	SC
Invertebrate Animal	Moths	<i>Argyrostroma anilis</i>	Short-lined chocolate	SC
Invertebrate Animal	Flies	<i>Atylotus ohioensis</i>	Tabanid fly	SC
Invertebrate Animal	Beetles	<i>Badister transversus</i>	Ground beetle	SC
Invertebrate Animal	Beetles	<i>Bembidion carinula</i>	Ground beetle	SC
Invertebrate Animal	Beetles	<i>Bembidion lacunarium</i>	Ground beetle	SC
Invertebrate Animal	Beetles	<i>Bembidion planum</i>	Ground beetle	SC
Invertebrate Animal	Beetles	<i>Bembidion pseudocautum</i>	Ground beetle	SC
Invertebrate Animal	Beetles	<i>Bembidion quadratum</i>	Ground beetle	SC
Invertebrate Animal	Beetles	<i>Bembidion semicinctum</i>	Ground beetle	SC

Invertebrate Animal	Beetles	<i>Bembidion simplex</i>	Ground beetle	SC
Invertebrate Animal	Bees	<i>Bombus affinis</i>	Affable bumblebee	SC
Invertebrate Animal	Bees	<i>Bombus terricola</i>	Yellowbanded bumblebee	SC
Invertebrate Animal	Beetles	<i>Brachinus cyanipennis</i>	Bombardier beetle	SC
Invertebrate Animal	Beetles	<i>Brachinus fumans</i>	Bombardier beetle	SC
Invertebrate Animal	Beetles	<i>Brachinus medius</i>	Bombardier beetle	SC
Invertebrate Animal	Beetles	<i>Brachinus ovipennis</i>	Bombardier beetle	SC
Invertebrate Animal	Beetles	<i>Brachinus patruelis</i>	Bombardier beetle	SC
Invertebrate Animal	Butterflies	<i>Callophrys henrici</i>	Henry's elfin	SC
Invertebrate Animal	Beetles	<i>Carabus vinctus</i>	Ground beetle	SC
Invertebrate Animal	Moths	<i>Chaetagnaea cerata</i>	Noctuid moth	SC
Invertebrate Animal	Beetles	<i>Cicindela formosa generosa</i>	Pine barrens tiger beetle	SC
Invertebrate Animal	Beetles	<i>Cicindela hirticollis</i>	Tiger beetle	SC
Invertebrate Animal	Beetles	<i>Cicindela marginata</i>	Tiger beetle	SC
Invertebrate Animal	Beetles	<i>Cicindela tranquebarica</i>	Dark bellied tiger beetle	SC
Invertebrate Animal	Crustacean	<i>Crangonyx aberrans</i>	Mystic valley amphipod	SC
Invertebrate Animal	Damselflies	<i>Enallagma minusculum</i>	Little bluet	SC
Invertebrate Animal	Damselflies	<i>Enallagma pictum</i>	Scarlet bluet	SC
Invertebrate Animal	Skippers	<i>Erynnis horatius</i>	Horace's duskywing	SC

Invertebrate Animal	Moths	<i>Euchlaena madusaria</i>	Scrub euchlaena	SC
Invertebrate Animal	Moths	<i>Eucoptocnemis fimbriaris</i>	Noctuid moth	SC
Invertebrate Animal	Moths	<i>Eumacaria latiferrugata</i>	Brown-bordered geometer	SC
Invertebrate Animal	Skippers	<i>Euphyes dion</i>	Sedge skipper	SC
Invertebrate Animal	Moths	<i>Euxoa pleuritica</i>	Noctuid moth	SC
Invertebrate Animal	Moths	<i>Exyra fax</i>	Pitcher plant moth	SC
Invertebrate Animal	Snails	<i>Fossaria rustica</i>	Lymnaeid snail	SC
Invertebrate Animal	Beetles	<i>Geopinus incrassatus</i>	Ground beetle	SC
Invertebrate Animal	Dragonflies	<i>Gomphus vastus</i>	Cobra clubtail	SC
Invertebrate Animal	Dragonflies	<i>Gomphus ventricosus</i>	Skillet clubtail	SC
Invertebrate Animal	Flies	<i>Goniops chrysocoma</i>	Horse fly	SC
Invertebrate Animal	Snails	<i>Gyraulus circumstriatus</i>	Aquatic snail	SC
Invertebrate Animal	Beetles	<i>Harpalus caliginosus</i>	Ground beetle	SC
Invertebrate Animal	Beetles	<i>Harpalus eraticus</i>	Ground beetle	SC
Invertebrate Animal	Beetles	<i>Helluomorphoides praeustus bicolor</i>	Ground beetle	SC
Invertebrate Animal	Flies	<i>Hybomitra luridus</i>	Horse fly	SC
Invertebrate Animal	Flies	<i>Hybomitra trepida</i>	Horse fly	SC
Invertebrate Animal	Flies	<i>Hybomitra typhus</i>	Horse fly	SC
Invertebrate Animal	Dragonflies	<i>Ladona deplanata</i>	Blue corporal dragonfly	SC

Invertebrate Animal	Moths	<i>Lepipolys perscripta</i>	Scribbled sawfly	SC
Invertebrate Animal	Freshwater Mussels	<i>Leptodea ochracea</i>	Tidewater mussel	SC
Invertebrate Animal	Freshwater Mussels	<i>Ligumia nasuta</i>	Eastern pond mussel	SC
Invertebrate Animal	Lacewings and Others	<i>Lomamyia flavicornis</i>	Yellow-horned beaded lacewing	SC
Invertebrate Animal	Beetles	<i>Loxandrus vulneratus</i>	Ground beetle	SC
Invertebrate Animal	Butterflies	<i>Lycaena epixanthe</i>	Bog copper	SC
Invertebrate Animal	Butterflies	<i>Lycaena hylus</i>	Bronze copper	SC
Invertebrate Animal	Bees	<i>Macropis ciliata</i>	Fringed loosestrife oil- bee	SC
Invertebrate Animal	Freshwater Mussels	<i>Margaritifera margaritifera</i>	Eastern pearl shell	SC
Invertebrate Animal	Moths	<i>Melitara prodenialis</i>	Eastern cactus-boring moth	SC
Invertebrate Animal	Moths	<i>Meropleon ambifuscum</i>	Newman's brocade	SC
Invertebrate Animal	Flies	<i>Merycomyia whitneyi</i>	Tabanid fly	SC
Invertebrate Animal	Beetles	<i>Nebria lacustris lacustris</i>	Ground beetle	SC
Invertebrate Animal	Moths	<i>Oncocnemis riparia</i>	Dune oncocnemis	SC
Invertebrate Animal	Moths	<i>Papaipema duovata</i>	Seaside goldenrod stem borer	SC
Invertebrate Animal	Mayflies	<i>Paraleptophlebia assimilis</i>	A mayfly	SC
Invertebrate Animal	Snails	<i>Pomatiopsis lapidaria</i>	Slender walker	SC
Invertebrate Animal	Crustacean	<i>Procambarus acutus</i>	Whiteriver crayfish	SC
Invertebrate	Moths	<i>Rhodoecia aurantiago</i>	Aureolaria seed borer	SC

Animal				
Invertebrate				
Animal	Flies	<i>Sargus fasciatus</i>	Soldier fly	SC
Invertebrate				
Animal	Butterflies	<i>Satyrodes eurydice</i>	Eyed brown	SC
Invertebrate				
Animal	Beetles	<i>Scaphinotus viduus</i>	Ground beetle	SC
Invertebrate				
Animal	Moths	<i>Schinia spinosae</i>	Noctuid moth	SC
Invertebrate				
Animal	Dragonflies	<i>Somatochlora elongata</i>	Ski-tailed emerald	SC
Invertebrate				
Animal	Moths	<i>Spartiniphaga inops</i>	Spartina borer moth	SC
Invertebrate				
Animal	Spiders	<i>Sphodros niger</i>	Purse web spider	SC
Invertebrate				
Animal	Snails	<i>Stagnicola catascopium</i>	Lymnaeid snail	SC
Invertebrate				
Animal	Flies	<i>Stonemyia isabellina</i>	Tabanid fly	SC
Invertebrate				
Animal	Crustacean	<i>Stygobromus tenuis tenuis</i>	Piedmont groundwater amphipod	SC
Invertebrate				
Animal	Crustacean	<i>Synurella chamberlaini</i>	Coastal pond amphipod	SC
Invertebrate				
Animal	Flies	<i>Tabanus fulvicallus</i>	Horse fly	SC
Invertebrate				
Animal	Beetles	<i>Tetragonoderus fasciatus</i>	Ground beetle	SC
Invertebrate				
Animal	Plant Bugs	<i>Tibicen auletes</i>	Cicada	SC
Invertebrate				
Animal	Snails	<i>Valvata sincera</i>	Boreal turret snail	SC
Invertebrate				
Animal	Snails	<i>Valvata tricarinata</i>	Turret snail	SC
Invertebrate				
Animal	Moths	<i>Zale obliqua</i>	Noctuid moth	SC
Invertebrate				
Animal	Moths	<i>Acronicta albarufa</i>	Barrens dagger moth	SC*
Invertebrate				
Animal	Moths	<i>Acronicta lanceolaria</i>	Noctuid moth	SC*

Animal					
Invertebrate					
Animal	Bees	<i>Bombus ashtoni</i>	Ashton's bumblebee	SC*	
Invertebrate					
Animal	Butterflies	<i>Callophrys polios</i>	Hoary elfin	SC*	
Invertebrate					
Animal	Beetles	<i>Calosoma wilcoxi</i>	Ground beetle	SC*	
Invertebrate					
Animal	Beetles	<i>Carabus serratus</i>	Ground beetle	SC*	
Invertebrate					
Animal	Beetles	<i>Carabus sylvosus</i>	Ground beetle	SC*	
Invertebrate					
Animal	Moths	<i>Catocala pretiosa pretiosa</i>	Precious underwing moth	SC*	
Invertebrate					
Animal	Butterflies	<i>Chlosyne harrisii</i>	Harris' checkerspot	SC*	
Invertebrate					
Animal	Butterflies	<i>Chlosyne nycteis</i>	Silvery checkerspot	SC*	
Invertebrate					
Animal	Beetles	<i>Cicindela dorsalis dorsalis</i>	Northeastern beach tiger beetle	SC*	Federally Threatened
Invertebrate					
Animal	Beetles	<i>Cicindela purpurea</i>	Tiger beetle	SC*	
Invertebrate					
Animal	Moths	<i>Citheronia regalis</i>	Regal moth	SC*	
Invertebrate					
Animal	Beetles	<i>Coccinella novemnotata</i>	C9 lady beetle	SC*	
Invertebrate					
Animal	Moths	<i>Cucullia speyeri</i>	Noctuid moth	SC*	
Invertebrate					
Animal	Moths	<i>Eacles imperialis imperialis</i>	Imperial moth	SC*	
Invertebrate					
Animal	Skippers	<i>Erynnis martialis</i>	Mottled duskywing	SC*	
Invertebrate					
Animal	Crustacean	<i>Eulimnadia agassizii</i>	Clam shrimp	SC*	
Invertebrate					
Animal	Snails	<i>Fossaria galbana</i>	Lymnaeid snail	SC*	
Invertebrate					
Animal	Moths	<i>Hydraecia immanis</i>	Hop vine borer moth	SC*	

Invertebrate Animal	Moths	Lithophane lemmeri	Lemmer's noctuid moth	SC*	
Invertebrate Animal	Moths	Lithophane viridipallens	Pale green pinion moth	SC*	
Invertebrate Animal	Beetles	Lordithon niger	Black lordithon rove beetle	SC*	
Invertebrate Animal	Flies	Mixogaster johnsoni	Syrphid fly	SC*	
Invertebrate Animal	Beetles	Nicrophorus americanus	American burying beetle	SC*	Federally Endangered
Invertebrate Animal	Beetles	Omophron tessellatum	Ground beetle	SC*	
Invertebrate Animal	Beetles	Panagaeus fasciatus	Ground beetle	SC*	
Invertebrate Animal	Moths	Papaipema circumlucens	Hops-stalk borer moth	SC*	
Invertebrate Animal	Moths	Papaipema maritima	Maritime sunflower borer moth	SC*	
Invertebrate Animal	Moths	Papaipema sciata	Culvers root bore moth	SC*	
Invertebrate Animal	Butterflies	Polygonia progne	Gray comma	SC*	
Invertebrate Animal	Moths	Pyreferra ceromatica	Anointed sallow moth	SC*	
Invertebrate Animal	Beetles	Scaphinotus elevatus	Ground beetle	SC*	
Invertebrate Animal	Butterflies	Speyeria idalia	Regal fritillary	SC*	
Invertebrate Animal	Moths	Abagrotis nefascia benjamini	Coastal heathland cutworm	T	
Invertebrate Animal	Moths	Apodrepanulatrix liberaria	New jersey tea inchworm	T	
Invertebrate Animal	Butterflies	Callophrys irus	Frosted elfin	T	
Invertebrate Animal	Damselflies	Calopteryx dimidiata	Sparkling jewelwing	T	
Invertebrate Animal	Butterflies	Celastrina neglectamajor	Appalachian blue	T	

Animal				
Invertebrate				
Animal	Dragonflies	<i>Cordulegaster erronea</i>	Tiger spiketail	T
Invertebrate			False heather	
Animal	Moths	<i>Drasteria graphica atlantica</i>	underwing	T
Invertebrate				
Animal	Damselflies	<i>Enallagma doubledayi</i>	Atlantic bluet	T
Invertebrate				
Animal	Skippers	<i>Erynnis brizo</i>	Sleepy duskywing	T
Invertebrate				
Animal	Moths	<i>Eucosma morrisoni</i>	Morrison's mosaic	T
Invertebrate				
Animal	Skippers	<i>Euphyes bimacula</i>	Two-spotted skipper	T
Invertebrate				
Animal	Moths	<i>Euxoa violaris</i>	Violet dart moth	T
Invertebrate				
Animal	Moths	<i>Faronta rubripennis</i>	Pink streak	T
Invertebrate				
Animal	Dragonflies	<i>Gomphus adelphus</i>	Mustached clubtail	T
Invertebrate				
Animal	Dragonflies	<i>Gomphus descriptus</i>	Harpoon clubtail	T
Invertebrate				
Animal	Dragonflies	<i>Gomphus fraternus</i>	Midland clubtail	T
Invertebrate				
Animal	Dragonflies	<i>Gomphus quadricolor</i>	Rapids clubtail	T
Invertebrate				
Animal	Moths	<i>Hemaris gracilis</i>	Slender clearwing	T
Invertebrate				
Animal	Damselflies	<i>Hetaerina americana</i>	American rubyspot	T
Invertebrate				
Animal	Flies	<i>Hybomitra frosti</i>	Horse fly	T
Invertebrate				
Animal	Dragonflies	<i>Leucorrhinia glacialis</i>	Crimson-ringed whiteface	T
Invertebrate				
Animal	Moths	<i>Papaipema leucostigma</i>	Columbine borer	T
Invertebrate				
Animal	Moths	<i>Phaneta clavana</i>	Lanced phaneta	T
Invertebrate				
Animal	Dragonflies	<i>Progomphus obscurus</i>	Common sanddragon	T

Animal					
Invertebrate					
Animal	Moths	<i>Psectraglaea carnos</i>	Pink sallow	T	
Invertebrate					
Animal	Moths	<i>Speranza exornata</i>	Barrens itame	T	
Invertebrate					
Animal	Butterflies	<i>Speyeria atlantis</i>	Atlantis fritillary butterfly	T	
Invertebrate					
Animal	Dragonflies	<i>Stylurus amnicola</i>	Riverine clubtail	T	
Invertebrate					
Animal	Moths	<i>Thaumatopsis edonis</i>	Grassland thaumatopsis	T	
Invertebrate					
Animal	Moths	<i>Zale curema</i>	Noctuid moth	T	
Invertebrate					
Animal	Moths	<i>Zale submediana</i>	Noctuid moth	T	
Invertebrate					
Animal	Moths	<i>Zanclognatha martha</i>	Noctuid moth	T	
Mammals	Small Mammals	<i>Cryptotis parva</i>	Least shrew	E	
Mammals	Bats	<i>Myotis sodalis</i>	Indiana bat	E	Federally Endangered
Mammals	Bats	<i>Lasiurus noctivagans</i>	Silver-haired bat	SC	
Mammals	Bats	<i>Lasiurus borealis</i>	Red bat	SC	
Mammals	Bats	<i>Lasiurus cinereus</i>	Hoary bat	SC	
Mammals	Porpoises	<i>Phocoena phocoena</i>	Harbor porpoise	SC	
Mammals	Small Mammals	<i>Synaptomys cooperi</i>	Southern bog lemming	SC	
Mammals	Carnivores	<i>Canis lupus</i>	Gray wolf	SC*	Federally Endangered
Mammals	Bats	<i>Myotis leibii</i>	Eastern small-footed bat	SC*	
Mammals	Small Mammals	<i>Neotoma magister</i>	Eastern woodrat	SC*	
Mammals	Carnivores	<i>Puma concolor cougar</i>	Eastern cougar	SC*	Federally Endangered
Reptiles	Lizards and Snakes	<i>Crotalus horridus</i>	Timber rattlesnake	E	
Reptiles	Turtles	<i>Dermochelys coriacea</i>	Leatherback	E	Federally Endangered

Reptiles	Turtles	<i>Glyptemys muhlenbergii</i>	Bog turtle	E	Federally Threatened
Reptiles	Turtles	<i>Lepidochelys kempii</i>	Atlantic ridley	E	Federally Endangered
Reptiles	Turtles	<i>Glyptemys insculpta</i>	Wood turtle	SC	
Reptiles	Lizards and Snakes	<i>Heterodon platirhinos</i>	Eastern hognose snake	SC	
Reptiles	Lizards and Snakes	<i>Liochlorophis vernalis</i>	Smooth green snake	SC	
Reptiles	Turtles	<i>Terrapene carolina carolina</i>	Eastern box turtle	SC	
Reptiles	Lizards and Snakes	<i>Thamnophis sauritus</i>	Eastern ribbon snake	SC	
Reptiles	Turtles	<i>Caretta caretta</i>	Loggerhead	T	Federally Threatened
Reptiles	Turtles	<i>Chelonia mydas</i>	Atlantic green turtle	T	Federally Threatened
Reptiles	Lizards and Snakes	<i>Eumeces fasciatus</i>	Five-lined skink	T	
Vascular Plant		<i>Abies balsamea</i>	Balsam fir	E	Native populations only.
Vascular Plant		<i>Agalinis acuta</i>	Sandplain gerardia	E	Federally Endangered
Vascular Plant		<i>Agastache nepetoides</i>	Yellow giant hyssop	E	
Vascular Plant		<i>Agastache scrophulariifolia</i>	Purple giant hyssop	E	
Vascular Plant		<i>Ageratina aromatica</i>	Small white snakeroot	E	
Vascular Plant		<i>Angelica lucida</i>	Sea-coast angelica	E	
Vascular Plant		<i>Arceuthobium pusillum</i>	Dwarf mistletoe	E	
Vascular Plant		<i>Aristida tuberculosa</i>	Beach needle grass	E	
Vascular Plant		<i>Asclepias viridiflora</i>	Green milkweed	E	
Vascular Plant		<i>Bouteloua curtipendula</i>	Side-oats grama-grass	E	
Vascular Plant		<i>Carex alata</i>	Broadwing sedge	E	
Vascular Plant		<i>Carex backii</i>	Sedge	E	
Vascular Plant		<i>Carex barrattii</i>	Barratt's sedge	E	
Vascular Plant		<i>Carex buxbaumii</i>	Brown bog sedge	E	
Vascular Plant		<i>Carex castanea</i>	Chestnut-colored sedge	E	
Vascular Plant		<i>Carex exilis</i>	Sedge	E	
Vascular Plant		<i>Carex magellanica</i>	Sedge	E	

Vascular Plant	<i>Carex polymorpha</i>	Variable sedge	E
Vascular Plant	<i>Carex pseudocyperus</i>	Cyperus-like sedge	E
Vascular Plant	<i>Carex schweinitzii</i>	Schweinitz's sedge	E
Vascular Plant	<i>Carex viridula</i>	Little green sedge	E
Vascular Plant	<i>Carex willdenowii</i>	Willdenow's sedge	E
Vascular Plant	<i>Chamaelirium luteum</i>	Devil's-bit	E
Vascular Plant	<i>Cheilanthes lanosa</i>	Hairy lip-fern	E
Vascular Plant	<i>Cirsium horridulum</i>	Yellow thistle	E
Vascular Plant	<i>Coeloglossum viride</i>	Long-bracted green orchid	E
Vascular Plant	<i>Crassula aquatica</i>	Pygmyweed	E
Vascular Plant	<i>Cryptogramma stelleri</i>	Slender cliff-brake	E
Vascular Plant	<i>Cypripedium reginae</i>	Showy lady's-slipper	E
Vascular Plant	<i>Dalibarda repens</i>	Dew-drop	E
Vascular Plant	<i>Desmodium cuspidatum</i>	Large-bracted tick-trefoil	E
Vascular Plant	<i>Desmodium humifusum</i>	Trailing tick-trefoil	E
Vascular Plant	<i>Dichantherium scabriusculum</i>	Panic grass	E
Vascular Plant	<i>Diplazium pycnocarpon</i>	Narrow-leaved glade fern	E
Vascular Plant	<i>Dryopteris campyloptera</i>	Mountain wood-fern	E
Vascular Plant	<i>Echinodorus tenellus</i>	Bur-head	E
Vascular Plant	<i>Eleocharis equisetoides</i>	Horse-tail spike-rush	E
Vascular Plant	<i>Eleocharis quadrangulata</i> var. <i>crassior</i>	Spike-rush	E
Vascular Plant	<i>Equisetum pratense</i>	Meadow horsetail	E
Vascular Plant	<i>Equisetum scirpoides</i>	Dwarf scouring rush	E
Vascular Plant	<i>Eriocaulon parkeri</i>	Parker's pipewort	E
Vascular Plant	<i>Eupatorium album</i>	White thoroughwort	E
Vascular Plant	<i>Eurybia radula</i>	Rough aster	E
Vascular Plant	<i>Floerkea proserpinacoides</i>	False mermaid-weed	E
Vascular Plant	<i>Galium labradoricum</i>	Bog bedstraw	E
Vascular Plant	<i>Gentianella quinquefolia</i>	Stiff gentian	E

Vascular Plant	<i>Hasteola suaveolens</i>	Sweet-scented indian-plantain	E	
Vascular Plant	<i>Hudsonia ericoides</i>	Golden-heather	E	
Vascular Plant	<i>Hydrastis canadensis</i>	Goldenseal	E	
Vascular Plant	<i>Hydrocotyle umbellata</i>	Water pennywort	E	
Vascular Plant	<i>Hydrocotyle verticillata</i>	Whorled pennywort	E	
Vascular Plant	<i>Isotria medeoloides</i>	Small whorled pogonia	E	
Vascular Plant	<i>Lachnanthes carolina</i>	Carolina redroot	E	Native populations only.
Vascular Plant	<i>Leptochloa fusca</i> ssp. <i>fascicularis</i>	Saltpond grass	E	
Vascular Plant	<i>Ligusticum scoticum</i>	Scotch lovage	E	
Vascular Plant	<i>Linnaea borealis</i> ssp. <i>americana</i>	Twinflower	E	
Vascular Plant	<i>Linum sulcatum</i>	Yellow flax	E	
Vascular Plant	<i>Liparis liliifolia</i>	Lily-leaved twayblade	E	
Vascular Plant	<i>Ludwigia sphaerocarpa</i>	Globe-fruited false-loosestrife	E	
Vascular Plant	<i>Lycopodiella alopecuroides</i>	Foxtail clubmoss	E	
Vascular Plant	<i>Lythrum alatum</i>	Winged loosestrife	E	
Vascular Plant	<i>Malaxis bayardii</i>	Bayard's white adder's mouth	E	
Vascular Plant	<i>Malaxis brachypoda</i>	White adder's-mouth	E	
Vascular Plant	<i>Malaxis unifolia</i>	Green adder's-mouth	E	
Vascular Plant	<i>Milium effusum</i>	Tall millet-grass	E	
Vascular Plant	<i>Moehringia macrophylla</i>	Large-leaved sandwort	E	
Vascular Plant	<i>Moneses uniflora</i>	One-flower wintergreen	E	
Vascular Plant	<i>Morus rubra</i>	Red mulberry	E	
Vascular Plant	<i>Muhlenbergia capillaris</i>	Long-awn hairgrass	E	
Vascular Plant	<i>Myriophyllum alterniflorum</i>	Slender water-milfoil	E	
Vascular Plant	<i>Myriophyllum pinnatum</i>	Cutleaf water-milfoil	E	
Vascular Plant	<i>Oclemena nemoralis</i>	Bog aster	E	

Vascular Plant	<i>Oclemena X blakei</i>	Blake's aster	E	
Vascular Plant	<i>Oligoneuron album</i>	Prairie goldenrod	E	
Vascular Plant	<i>Oligoneuron rigidum</i>	Stiff goldenrod	E	
Vascular Plant	<i>Onosmodium virginianum</i>	Gravel-weed	E	
Vascular Plant	<i>Paspalum laeve</i>	Field paspalum	E	
Vascular Plant	<i>Pellaea glabella</i>	Smooth cliff-brake	E	
Vascular Plant	<i>Pinus resinosa</i>	Red pine	E	Native populations only.
Vascular Plant	<i>Piptatherum pungens</i>	Slender mountain ricegrass	E	
Vascular Plant	<i>Pityopsis falcata</i>	Sickle-leaved golden aster	E	
Vascular Plant	<i>Platanthera blephariglottis</i>	White-fringed orchid	E	
Vascular Plant	<i>Polygala cruciata</i>	Field milkwort	E	
Vascular Plant	<i>Polygala nuttallii</i>	Nuttall's milkwort	E	
Vascular Plant	<i>Polygala senega</i>	Seneca snakeroot	E	
Vascular Plant	<i>Polymnia canadensis</i>	Small-flowered leafcup	E	
Vascular Plant	<i>Potamogeton confervoides</i>	Pondweed	E	
Vascular Plant	<i>Potamogeton friesii</i>	Fries' pondweed	E	
Vascular Plant	<i>Potamogeton hillii</i>	Hill's pondweed	E	
Vascular Plant	<i>Potamogeton ogdenii</i>	Ogden's pondweed	E	
Vascular Plant	<i>Potamogeton strictifolius</i>	Straight-leaved pondweed	E	
Vascular Plant	<i>Pycnanthemum clinopodioides</i>	Basil mountain-mint	E	
Vascular Plant	<i>Pycnanthemum torrei</i>	Torrey mountain-mint	E	
Vascular Plant	<i>Ranunculus ambigens</i>	Water-plantain spearwort	E	
Vascular Plant	<i>Ranunculus cymbalaria</i>	Seaside crowfoot	E	
Vascular Plant	<i>Rhynchospora capillacea</i>	Capillary beak-rush	E	
Vascular Plant	<i>Rhynchospora scirpoides</i>	Long-beaked bald rush	E	
Vascular Plant	<i>Ribes triste</i>	Swamp red currant	E	
Vascular Plant	<i>Sabatia stellaris</i>	Marsh pink	E	

Vascular Plant	<i>Sagittaria cuneata</i>	Waputo	E
Vascular Plant	<i>Salix pedicellaris</i>	Bog willow	E
Vascular Plant	<i>Saururus cernuus</i>	Lizard's tail	E
Vascular Plant	<i>Scheuchzeria palustris</i> ssp. <i>americana</i>	Pod grass	E
Vascular Plant	<i>Scleria pauciflora</i> var. <i>caroliniana</i>	Few-flowered nutrush	E
Vascular Plant	<i>Scleria reticularis</i>	Reticulated nutrush	E
Vascular Plant	<i>Scleria triglomerata</i>	Nutrush	E
Vascular Plant	<i>Scutellaria integrifolia</i>	Hyssop skullcap	E
Vascular Plant	<i>Scutellaria parvula</i> var. <i>missouriensis</i>	Small skullcap	E
Vascular Plant	<i>Sparganium fluctuans</i>	Floating bur-reed	E
Vascular Plant	<i>Sparganium natans</i>	Small bur-reed	E
Vascular Plant	<i>Sporobolus clandestinus</i>	Rough dropseed	E
Vascular Plant	<i>Sporobolus heterolepis</i>	Northern dropseed	E
Vascular Plant	<i>Sporobolus neglectus</i>	Small dropseed	E
Vascular Plant	<i>Stachys hyssopifolia</i>	Hyssop-leaf hedge- nettle	E
Vascular Plant	<i>Taenidia integerrima</i>	Yellow pimpernel	E
Vascular Plant	<i>Trichostema brachiatum</i>	False pennyroyal	E
Vascular Plant	<i>Triosteum angustifolium</i>	Narrow-leaved horse gentian	E
Vascular Plant	<i>Triphora trianthophora</i>	Nodding pogonia	E
Vascular Plant	<i>Utricularia resupinata</i>	Bladderwort	E
Vascular Plant	<i>Uvularia grandiflora</i>	Large-flowered bellwort	E
Vascular Plant	<i>Vaccinium myrtilloides</i>	Velvetleaf blueberry	E
Vascular Plant	<i>Viola brittoniana</i>	Coast violet	E
Vascular Plant	<i>Waldsteinia fragarioides</i>	Barren strawberry	E
Vascular Plant	<i>Xyris smalliana</i>	Small's yellow-eyed grass	E
Vascular Plant	<i>Zizia aptera</i>	Golden alexanders	E
Vascular Plant	<i>Acalypha virginica</i>	Virginia copperleaf	SC

Vascular Plant	<i>Aristida longespica</i>	Needlegrass	SC
Vascular Plant	<i>Aristida purpurascens</i>	Arrowfeather	SC
Vascular Plant	<i>Aristolochia serpentaria</i>	Virginia snakeroot	SC
Vascular Plant	<i>Asclepias purpurascens</i>	Purple milkweed	SC
Vascular Plant	<i>Asplenium montanum</i>	Mountain spleenwort	SC
Vascular Plant	<i>Atriplex glabriuscula</i>	Orache	SC
Vascular Plant	<i>Betula pumila</i>	Swamp birch	SC
Vascular Plant	<i>Bolboschoenus maritimus</i> ssp. <i>paludosus</i>	Bayonet grass	SC
Vascular Plant	<i>Bolboschoenus novae-</i> <i>angliae</i>	Salt marsh bulrush	SC
Vascular Plant	<i>Calamagrostis stricta</i> ssp. <i>inexpansa</i>	Reed bentgrass	SC
Vascular Plant	<i>Cardamine douglassii</i>	Purple cress	SC
Vascular Plant	<i>Carex aestivalis</i>	Summer sedge	SC
Vascular Plant	<i>Carex aquatilis</i> var. <i>aquatilis</i>	Sedge	SC
Vascular Plant	<i>Carex bushii</i>	Sedge	SC
Vascular Plant	<i>Carex formosa</i>	Handsome sedge	SC
Vascular Plant	<i>Carex hitchcockiana</i>	Hitchcock's sedge	SC
Vascular Plant	<i>Carex molesta</i>	Troublesome sedge	SC
Vascular Plant	<i>Carex novae-angliae</i>	New england sedge	SC
Vascular Plant	<i>Carex oligocarpa</i>	Eastern few-fruit sedge	SC
Vascular Plant	<i>Carex prairea</i>	Prairie sedge	SC
Vascular Plant	<i>Carex squarrosa</i>	Sedge	SC
Vascular Plant	<i>Carex sterilis</i>	Dioecious sedge	SC
Vascular Plant	<i>Carex trichocarpa</i>	Sedge	SC
Vascular Plant	<i>Carex tuckermanii</i>	Tuckerman's sedge	SC
Vascular Plant	<i>Carex typhina</i>	Sedge	SC
Vascular Plant	<i>Corallorhiza trifida</i>	Early coral root	SC
Vascular Plant	<i>Cypripedium parviflorum</i>	Yellow lady's-slipper	SC
Vascular Plant	<i>Deschampsia caespitosa</i>	Tufted hairgrass	SC
Vascular Plant	<i>Desmodium glabellum</i>	Dillenius' tick-trefoil	SC
Vascular Plant	<i>Dicentra canadensis</i>	Squirrel corn	SC

Vascular Plant	<i>Dichantherium ovale</i> var. <i>addisonii</i>	Panic grass	SC	
Vascular Plant	<i>Diospyros virginiana</i>	Persimmon	SC	
Vascular Plant	<i>Draba reptans</i>	Whitlow-grass	SC	
Vascular Plant	<i>Dryopteris goldiana</i>	Goldie's fern	SC	
Vascular Plant	<i>Elymus wiegandii</i>	Wiegand's wild rye	SC	
Vascular Plant	<i>Eurybia X herveyi</i>	Hervey's aster	SC	
Vascular Plant	<i>Gaultheria hispidula</i>	Creeping snowberry	SC	
Vascular Plant	<i>Hepatica nobilis</i> var. <i>acuta</i>	Sharp-lobed hepatica	SC	
Vascular Plant	<i>Honckenya peploides</i>	Seabeach sandwort	SC	
Vascular Plant	<i>Hottonia inflata</i>	Featherfoil	SC	
Vascular Plant	<i>Hydrophyllum virginianum</i>	Virginia waterleaf	SC	
Vascular Plant	<i>Hypericum ascyron</i>	Great st. john's-wort	SC	
Vascular Plant	<i>Krigia biflora</i>	Two-flowered cynthia	SC	
Vascular Plant	<i>Lespedeza repens</i>	Creeping bush-clover	SC	
Vascular Plant	<i>Liatris scariosa</i> var. <i>novae-angliae</i>	Blazing-star	SC	
Vascular Plant	<i>Lilaeopsis chinensis</i>	Lilaeopsis	SC	
Vascular Plant	<i>Limosella australis</i>	Mudwort	SC	
Vascular Plant	<i>Liquidambar styraciflua</i>	Sweet gum	SC	Native populations only.
Vascular Plant	<i>Lycopus amplexans</i>	Clasping-leaved water-horehound	SC	
Vascular Plant	<i>Lygodium palmatum</i>	Climbing fern	SC	
Vascular Plant	<i>Mitella nuda</i>	Naked miterwort	SC	
Vascular Plant	<i>Nuphar microphylla</i>	Small yellow pond lily	SC	
Vascular Plant	<i>Opuntia humifusa</i>	Eastern prickly pear	SC	
Vascular Plant	<i>Orontium aquaticum</i>	Golden club	SC	
Vascular Plant	<i>Oxalis violacea</i>	Violet wood-sorrel	SC	
Vascular Plant	<i>Panax quinquefolius</i>	American ginseng	SC	
Vascular Plant	<i>Plantago virginica</i>	Hoary plantain	SC	
Vascular Plant	<i>Platanthera flava</i> var. <i>herbiola</i>	Pale green orchid	SC	

Vascular Plant	Podostemum ceratophyllum	Threadfoot	SC
Vascular Plant	Potentilla arguta	Tall cinquefoil	SC
Vascular Plant	Quercus macrocarpa	Bur oak	SC
Vascular Plant	Ranunculus longirostris	White water-crowfoot	SC
Vascular Plant	Ribes glandulosum	Skunk currant	SC
Vascular Plant	Ribes rotundifolium	Wild currant	SC
Vascular Plant	Rosa nitida	Shining rose	SC
Vascular Plant	Rubus cuneifolius	Sand bramble	SC
Vascular Plant	Sagittaria subulata	Arrowleaf	SC
Vascular Plant	Salix petiolaris	Slender willow	SC
Vascular Plant	Salix serissima	Autumn willow	SC
Vascular Plant	Schizachne purpurascens	Purple oat	SC
Vascular Plant	Scirpus georgianus	Georgia bulrush	SC
Vascular Plant	Senna hebecarpa	Wild senna	SC
Vascular Plant	Solidago latissimifolia	Elliott's goldenrod	SC
Vascular Plant	Spiranthes tuberosa var. grayi	Little ladies'-tresses	SC
Vascular Plant	Stachys tenuifolia	Smooth hedge-nettle	SC
Vascular Plant	Stellaria borealis	Northern stitchwort	SC
Vascular Plant	Trichomanes intricatum	Appalachian gametophyte	SC
Vascular Plant	Trisetum spicatum	Spiked false oats	SC
Vascular Plant	Viburnum prunifolium	Smooth black-haw	SC
Vascular Plant	Viola adunca	Hook-spurred violet	SC
Vascular Plant	Viola canadensis	Canada violet	SC
Vascular Plant	Viola nephrophylla	Northern bog violet	SC
Vascular Plant	Viola renifolia	Kidney-leaf white violet	SC*
Vascular Plant	Viola selkirkii	Great-spurred violet	SC
Vascular Plant	Vitis X novae-angliae	New england grape	SC
Vascular Plant	Amaranthus pumilus	Sea-beach amaranth	SC*
Vascular Plant	Angelica venenosa	Hairy angelica	SC*

Federally
Threatened

Vascular Plant	<i>Antennaria howellii</i> ssp. petaloidea	Field pussytoes	SC*	
Vascular Plant	<i>Aplectrum hyemale</i>	Puttyroot	SC*	
Vascular Plant	<i>Arethusa bulbosa</i>	Arethusa	SC*	
Vascular Plant	<i>Asclepias variegata</i>	White milkweed	SC*	
Vascular Plant	<i>Blephilia ciliata</i>	Downy wood-mint	SC*	
Vascular Plant	<i>Blephilia hirsuta</i>	Hairy woodmint	SC*	
Vascular Plant	<i>Botrychium simplex</i>	Little grape fern	SC*	
Vascular Plant	<i>Calystegia spithamea</i>	Low bindweed	SC*	
Vascular Plant	<i>Carex collinsii</i>	Collins sedge	SC*	
Vascular Plant	<i>Carex crawfordii</i>	Crawford sedge	SC*	
Vascular Plant	<i>Carex foenea</i>	Bronze sedge	SC*	
Vascular Plant	<i>Carex nigromarginata</i>	Black-edge sedge	SC*	
Vascular Plant	<i>Carex oligosperma</i>	Few-seeded sedge	SC*	
Vascular Plant	<i>Carex pauciflora</i>	Few-flowered sedge	SC*	
				Native populations only.
Vascular Plant	<i>Cercis canadensis</i>	Eastern redbud	SC*	
Vascular Plant	<i>Chenopodium rubrum</i>	Coast blite	SC*	
Vascular Plant	<i>Croton willdenowii</i>	Elliptical rushfoil	SC*	
Vascular Plant	<i>Cuphea viscosissima</i>	Blue waxweed	SC*	
Vascular Plant	<i>Cuscuta coryli</i>	Hazel dodder	SC*	
Vascular Plant	<i>Cynoglossum virginianum</i>	Wild comfrey	SC*	
Vascular Plant	<i>Cypripedium arietinum</i>	Ram's-head lady's-slipper	SC*	
Vascular Plant	<i>Desmodium sessilifolium</i>	Sessile-leaf tick-trefoil	SC*	
Vascular Plant	<i>Dichanthelium sphaerocarpon</i> var. <i>isophyllum</i>	Panic grass	SC*	
Vascular Plant	<i>Dichanthelium xanthophysum</i>	Panic grass	SC*	
Vascular Plant	<i>Drosera filiformis</i>	Thread-leaf sundew	SC*	
Vascular Plant	<i>Eleocharis microcarpa</i> var. <i>filiculmis</i>	Spike-rush	SC*	

Vascular Plant	<i>Equisetum palustre</i>	Marsh horsetail	SC*
Vascular Plant	<i>Gamochaeta purpurea</i>	Purple cudweed	SC*
Vascular Plant	<i>Geranium bicknellii</i>	Bicknell's northern crane's-bill	SC*
Vascular Plant	<i>Goodyera repens</i> var. <i>ophioides</i>	Dwarf rattlesnake plantain	SC*
Vascular Plant	<i>Helianthemum dumosum</i>	Bush rockrose	SC*
Vascular Plant	<i>Heteranthera reniformis</i>	Kidneyleaf mud-plantain	SC*
Vascular Plant	<i>Huperzia selago</i>	Fir clubmoss	SC*
Vascular Plant	<i>Hybanthus concolor</i>	Green violet	SC*
Vascular Plant	<i>Hypericum adpressum</i>	Creeping st. john's-wort	SC*
Vascular Plant	<i>Juncus debilis</i>	Weak rush	SC*
Vascular Plant	<i>Linum intercursum</i>	Sandplain flax	SC*
Vascular Plant	<i>Ludwigia polycarpa</i>	Many-fruit false-loosestrife	SC*
Vascular Plant	<i>Lyonia mariana</i>	Stagger-bush	SC*
Vascular Plant	<i>Nuphar advena</i>	Large yellow pond lily	SC*
Vascular Plant	<i>Oenothera fruticosa</i>	Sundrops	SC*
Vascular Plant	<i>Orthilia secunda</i>	One-sided pyrola	SC*
Vascular Plant	<i>Panicum rigidulum</i> var. <i>elongatum</i>	Tall flat panic-grass	SC*
Vascular Plant	<i>Panicum verrucosum</i>	Warty panic grass	SC*
Vascular Plant	<i>Paronychia fastigiata</i>	Hairy forked chickweed	SC*
Vascular Plant	<i>Paspalum setaceum</i>	Bead grass	SC*
Vascular Plant	<i>Phaseolus polystachios</i> var. <i>polystachios</i>	Wild kidney bean	SC*
Vascular Plant	<i>Platanthera dilatata</i>	Tall white bog orchid	SC*
Vascular Plant	<i>Platanthera hookeri</i>	Hooker's orchid	SC*
Vascular Plant	<i>Platanthera orbiculata</i>	Large round-leaf orchid	SC*
Vascular Plant	<i>Polanisia dodecandra</i>	Clammy-weed	SC*
Vascular Plant	<i>Polygonum glaucum</i>	Seabeach knotweed	SC*
Vascular Plant	<i>Prunus alleghaniensis</i>	Alleghany plum	SC*

Vascular Plant	<i>Prunus maritima</i> var. <i>gravesii</i>	Graves beach plum	SC*	
Vascular Plant	<i>Puccinellia tenella</i> ssp. <i>alaskana</i>	Goose grass	SC*	
Vascular Plant	<i>Ranunculus flammula</i> var. <i>filiformis</i>	Creeping spearwort	SC*	
Vascular Plant	<i>Ranunculus pensylvanicus</i>	Bristly buttercup	SC*	
Vascular Plant	<i>Rhus aromatica</i>	Fragrant sumac	SC*	
Vascular Plant	<i>Ribes lacustre</i>	Swamp black currant	SC*	
Vascular Plant	<i>Rumex maritimus</i>	Sea-side dock	SC*	
Vascular Plant	<i>Sabatia dodecandra</i>	Large marsh pink	SC*	
Vascular Plant	<i>Schwalbea americana</i>	Chaffseed	SC*	Federally Endangered
Vascular Plant	<i>Scirpus longii</i>	Long's bulrush	SC*	
Vascular Plant	<i>Scleria verticillata</i>	Low nutrush	SC*	
Vascular Plant	<i>Smilax hispida</i>	Bristly greenbriar	SC*	
Vascular Plant	<i>Solidago rugosa</i> var. <i>sphagnophila</i>	Early wrinkle-leaved goldenrod	SC*	
Vascular Plant	<i>Symphyotrichum</i> <i>preanthoides</i>	Crooked-stem aster	SC*	
Vascular Plant	<i>Trichophorum alpinum</i>	Cotton bulrush	SC*	
Vascular Plant	<i>Vaccinium vitis-idaea</i> ssp. <i>minus</i>	Mountain cranberry	SC*	
Vascular Plant	<i>Valerianella radiata</i>	Beaked corn-salad	SC*	
Vascular Plant	<i>Veratrum latifolium</i>	Hybrid bunchflower	SC*	
Vascular Plant	<i>Verbena simplex</i>	Narrow-leaved vervain	SC*	
Vascular Plant	<i>Viburnum nudum</i>	Possum haw	SC*	
Vascular Plant	<i>Viola hirsutula</i>	Southern wood violet	SC*	
Vascular Plant	<i>Viola striata</i>	Striped violet	SC*	
Vascular Plant	<i>Alopecurus aequalis</i>	Orange foxtail	T	
Vascular Plant	<i>Andromeda polifolia</i> var. <i>glaucophylla</i>	Bog rosemary	T	
Vascular Plant	<i>Anemone canadensis</i>	Canada anemone	T	
Vascular Plant	<i>Asplenium ruta-muraria</i>	Wallrue spleenwort	T	

Vascular Plant	<i>Bidens beckii</i>	Water-marigold	T	
Vascular Plant	<i>Bidens eatonii</i>	Eaton's beggars-tick	T	
Vascular Plant	<i>Carex alopecoidea</i>	Foxtail sedge	T	
Vascular Plant	<i>Carex crawei</i>	Crawe's sedge	T	
Vascular Plant	<i>Carex cumulata</i>	Clustered sedge	T	
Vascular Plant	<i>Carex davisii</i>	Davis' sedge	T	
Vascular Plant	<i>Carex limosa</i>	Sedge	T	
Vascular Plant	<i>Castilleja coccinea</i>	Indian paintbrush	T	
Vascular Plant	<i>Corydalis flavula</i>	Yellow corydalis	T	
Vascular Plant	<i>Eriophorum vaginatum</i> var. <i>spissum</i>	Hare's tail	T	
Vascular Plant	<i>Eurybia spectabilis</i>	Showy aster	T	
Vascular Plant	<i>Gaylussacia dumosa</i> var. <i>bigeloviana</i>	Dwarf huckleberry	T	
Vascular Plant	<i>Helianthemum propinquum</i>	Low frostweed	T	
Vascular Plant	<i>Houstonia longifolia</i>	Longleaf bluet	T	
Vascular Plant	<i>Hudsonia tomentosa</i>	False beach-heather	T	
Vascular Plant	<i>Ilex glabra</i>	Inkberry	T	native populations only
Vascular Plant	<i>Lipocarpa micrantha</i>	Dwarf bulrush	T	
Vascular Plant	<i>Maianthemum trifolium</i>	Three-leaved false solomon's-seal	T	
Vascular Plant	<i>Minuartia glabra</i>	Mountain sandwort	T	
Vascular Plant	<i>Myriophyllum sibiricum</i>	Northern water-milfoil	T	
Vascular Plant	<i>Ophioglossum pusillum</i>	Adder's-tongue	T	
Vascular Plant	<i>Packera paupercula</i>	Ragwort	T	
Vascular Plant	<i>Panicum amarum</i>	Panic grass	T	
Vascular Plant	<i>Pedicularis lanceolata</i>	Swamp lousewort	T	
Vascular Plant	<i>Petasites frigidus</i> var. <i>palmaris</i>	Sweet coltsfoot	T	
Vascular Plant	<i>Platanthera ciliaris</i>	Yellow-fringed orchid	T	
Vascular Plant	<i>Populus heterophylla</i>	Swamp cottonwood	T	

Vascular Plant	<i>Potamogeton pusillus</i> ssp. <i>gemmiparus</i>	Capillary pondweed	T	
Vascular Plant	<i>Potamogeton vaseyi</i>	Vasey's pondweed	T	
Vascular Plant	<i>Rhododendron</i> <i>groenlandicum</i>	Labrador tea	T	
Vascular Plant	<i>Rhynchospora</i> <i>macrostachya</i>	Beaked rush	T	
Vascular Plant	<i>Rotala ramosior</i>	Toothcup	T	
Vascular Plant	<i>Salix exigua</i>	Sandbar willow	T	
Vascular Plant	<i>Schoenoplectus acutus</i>	Hard-stemmed bulrush	T	
Vascular Plant	<i>Schoenoplectus torreyi</i>	Torrey bulrush	T	
Vascular Plant	<i>Sibbaldiopsis tridentata</i>	Three-toothed cinquefoil	T	
Vascular Plant	<i>Silene stellata</i>	Starry champion	T	
Vascular Plant	<i>Spergularia canadensis</i>	Canada sand-spurry	T	
Vascular Plant	<i>Sporobolus cryptandrus</i>	Sand dropseed	T	
Vascular Plant	<i>Streptopus amplexifolius</i>	White mandarin	T	
Vascular Plant	<i>Thuja occidentalis</i>	Northern white cedar	T	Native populations only.
Vascular Plant	<i>Trollius laxus</i>	Spreading globe flower	T	
Vascular Plant	<i>Xyris montana</i>	Northern yellow-eyed grass	T	

APPENDIX 7. Connecticut Forest Resource Assessment - Technical Report

This section provides additional details on the development of maps used within the report. Most of the maps within the report are described here; others may be detailed in a later web based report. **Some maps described within this report did not get included in the final Assessment and Strategy.** For questions contact Joel Stocker of the University of Connecticut, Cooperative Extension System. So

Introduction

Two types of Geographic Information System (GIS) map sets were created for this project. Standard maps with individual layers for displaying features available within the GIS and an overlay assessment involving the process of identifying data layers associated with a specific issue or priority and combining those layers to create a final map. The detailed overlay process involves multiple links between raw datasets, the layers produced, and the various steps required to fit those layers together into a final weighted analysis. With the State assessment a template of recommended layers and output maps was formulated from work with other states throughout the country. The Connecticut plan started with these recommendations as a base and adjusted the final process to reflect available datasets and the preferences of various stakeholders.

This technical report describes the procedures used to create the Geographic Information System (GIS) datasets for the project and how these datasets are used to create the map sets within the primary report. Each map is identified with a descriptive process, a list of layers, and a listing of the raw data required creating the layers or directly producing the map. Many of the layers and raw datasets were used in more than one map. Different outcomes can occur by selecting unique attributes from the same dataset for a given map.

Descriptive items

Raw GIS data vs. analysis layers. Base (raw) GIS data should not be confused with the weighted analysis layers. Many of the analysis layers have their origin as a combination of several base “raw” GIS files or as a selection from one or more datasets. For example, wetland features are actually a sub selection from the NRCS Soils shape file (hydric soils). The process identifying what constitutes a wetlands soil was pre-determined by NRCS independent of this project. Others, such as steep slopes greater than 25%, were created using several GIS operations applied to one or more base layers. The LIDAR 10 meter Digital Elevation Model (DEM) was provided as a Grid file by CLEAR, this was analyzed to produce slope then reclassified to select slopes greater than 25 %. Most of the model operations within the project start with the base GIS layers to create the parameters for the overlay analysis, weights are assigned, and then the parameters combined to make the final map.

Label numbering scheme. To assist with data tracking during and after the analysis each of the layers was assigned a unique identifier code (layerID). See the Layer Definitions and Numbering section for a listing of the layerIDs, layer names, and descriptions. Providing a unique LayerID code helps to avoid problems caused by spelling errors and helps when managing the data sets using a database program. Actual datasets may change if the study is repeated depending on the availability of new layers or changes in the model designs. The details are provided to help with understanding the process rather than repeat the analysis verbatim.

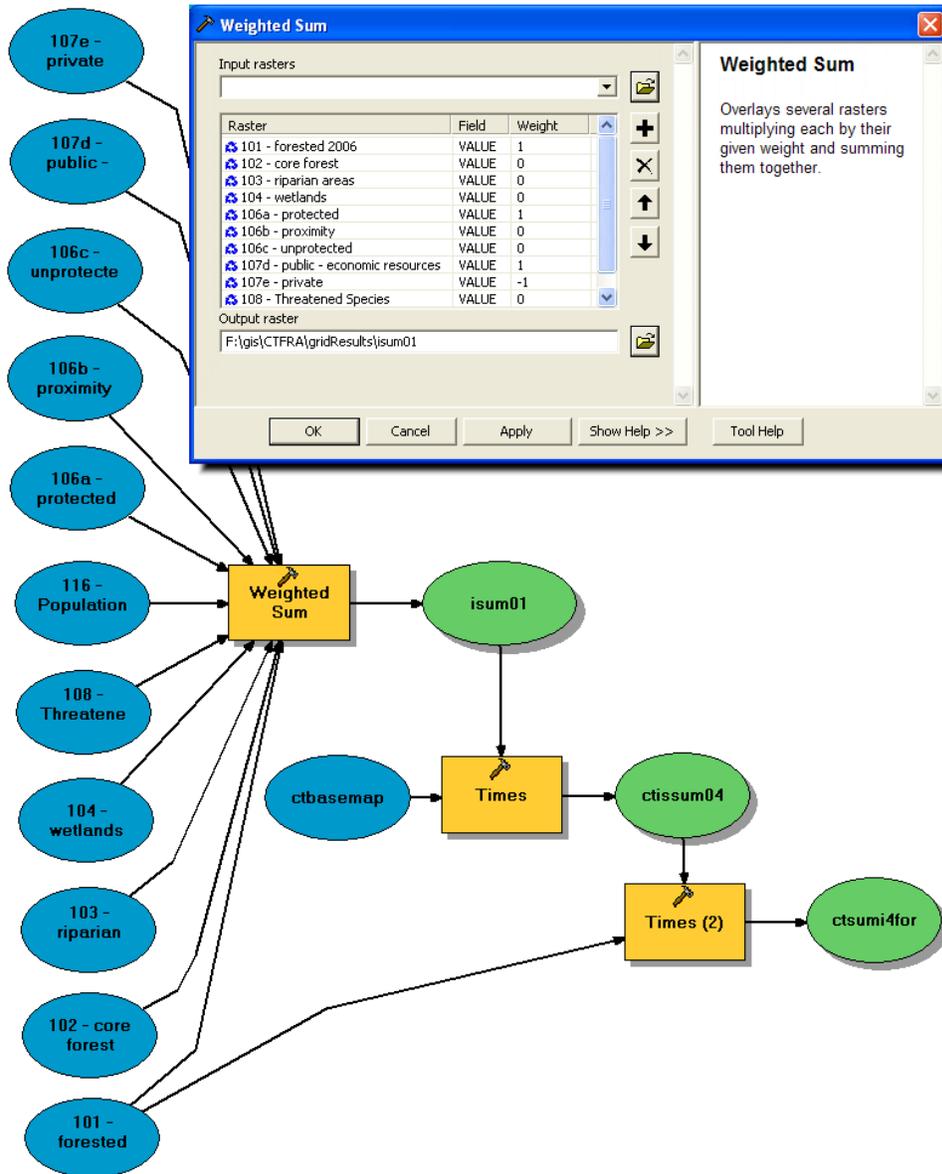
The use of Model Builder. Throughout this report there may be terms relating to use of a model. ArcGIS ArcView 9.3 was the primary software used for the study. Within the software is a Model Builder tool. This tool provides the option to create a “toolbox” for storing repetitive tasks and complex spatial routines. The user works in a graphics interface, adding items to a type of flow chart. The items contain procedures and spatial operations that can be applied in a set order. The ‘raw’ GIS data is added to the model on one side as base data, manipulated to create parameters, then weighted and combined to create the final output dataset (or maps). Models were used to create some of the base layers. A hybrid model/visual basic script was created to provide flexibility when assigning weights to the various overlay procedures.

The use of vector and raster data formats. Vector datasets define features on the ground using polygons, lines, or point coordinate systems. With vector data a lake would be represented by a line enclosing an area and attributes would be assigned to the enclosed polygon. Raster datasets are represented by a spatial grid system with evenly distributed pixels, each with an associated value, using a concept is similar to that of a digital photograph. With raster data a lake would be identified as a cluster of pixels, each assigned the same ‘lake’ value. For GIS applications there are advantages and disadvantages of vector and raster formats depending on the application or analysis being applied. Vector operations are more flexible with map scale, providing more precision for detailed operations such as buffering, clipping, and line work. Raster files may have limited resolution, but the grid operations can be much faster than vector operations when working with overlay calculations.

For this project raster files were used because speed was essential to provide close to real-time updates during planning meetings and to maximize flexibility. Loss of precision was minimal, however, to maintain resolution for as long as possible all vector datasets retained their vector characteristics until the steps for statistical overlay were required. At that point they were converted to the resolution specified for the project. For alignment purposes, all grid features were ‘snapped’ to a base grid for Connecticut originally created from a 2006 Landsat image as provided by CLEAR and modified for the 30 by 30 meter format (98.423364 feet on a side).

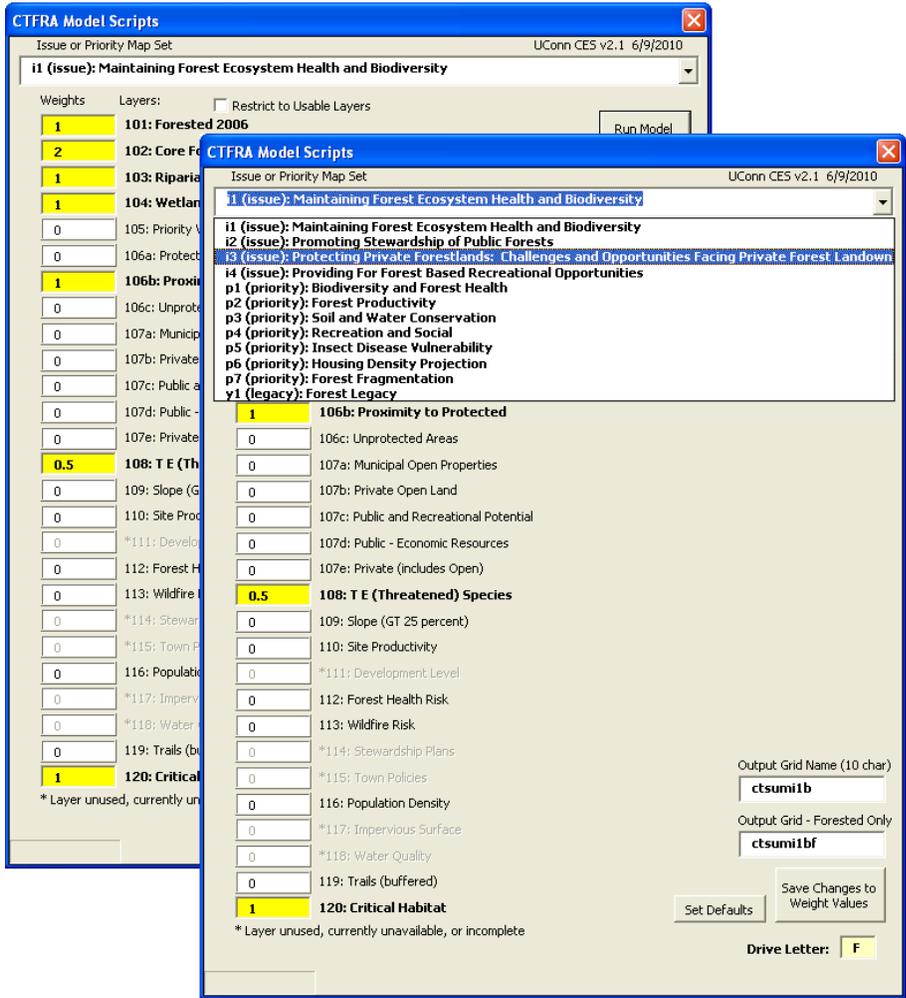
Procedures for weighted overlay analysis. The overlay analysis involved the stacking of layers associated with each map theme into one grid. Each layer was assigned a weight using the

ArcGIS Spatial Analyst weighted overlay tool. Before weighted, all layers used in the overlay analysis were first converted to a standardized statewide grid format and assigned values of 1 or 0, with the value “1” applying to the layer feature. Exceptions to this included the housing density layer, this retained a range of low to high (1, 2, and 3) for any given pixel. ArcGIS Model Builder was used to create a base layout for adjusting weighted values and providing standard output.



To maximize flexibility the model was converted to a script and modified to work within a Visual Basic interface. This Visual Basic tool allowed the selection of a specified issue or

priority map set and the option to change weight values for selected layers before running the model. Because the layers were in raster format the overlay analysis for any given map was relatively fast, less than five minutes for a map set. With fast analysis several scenarios could be tested during planning meetings.



Report Format. Multiple maps were produced for the final report. The descriptions for these maps are provided here, grouped into the Issues and Priority map sets. Those maps involving overlay analysis are described first, followed by basic information for the standard display maps. Each is broken out by its purpose, the map identifying features and description (for record keeping), the GIS procedures, the layers used, and layer weights if an overlay analysis was used. A few of the maps described here may not be in the final report, the maps may have been removed as the report was finalized or are reserved for future revisions.

I. Overlay analysis maps for the Issues and Priority datasets

Maintaining Forest Ecosystem Health and Biodiversity

MapID: i1b

Project: FinalMap_Issue01b.mxd

Purpose: To identify areas with high potential or for current value as quality forest habitat, both for trees and animals. Timber production may coincide with similar areas, but the primary focus for this map set is increased biodiversity and overall health of the forest ecosystem.

Description: Issue Number 1.

Procedure: Weighted Overlay.

Layers and layer purpose for this map:

- Forested pixels. Assumes forested pixels have value to forest ecosystem.
- Core Forest. Forest pixels a set distance from fragmenting features (roads, urban areas). Assumes “core” forest have additional value away from edge features
- Riparian Areas - within 300 feet of water features. Assumes pixels near water features provide for more biodiversity.
- Wetland Soils. Assumes pixels within wetlands provide for more biodiversity
- Proximity to Protected areas (1000 and 2000 feet). Assumes a better chance of having and maintaining ecosystem value when near protected land.
- Threatened Species. Assumes the State species map reflects zones already. Supporting species of concern. Weight reduced because of spatial generalization.
- Critical Habitat Areas. Assumes areas already designated as critical have been evaluated as having an ecosystem value.

Layer weights:

<u>LayerCode</u>	<u>LayerName</u>	<u>LayerWeight</u>
101	Forested	1
102	Core Forest	2
103	Riparian Areas	1
104	Wetland Soils	1
106b	Proximity to Protected	1
108	Threatened Species	0.5

Additional Notes: None

Providing For Forest Based Recreational Opportunities

MapID: i4b

Project: FinalMap_Issue04b.mxd

Purpose: To highlight and identify areas with potential for passive forest based recreation within the State.

Description: Issue Number 4. Overlay analysis to identify areas within the state providing increased value for forest based recreation.

Procedure: Weighted Overlay. Used vector trail maps as provided by the CT DEP and the CT Forest and Parks association. Buffered them by (***)100) feet to make sure the trail system was properly included when converted to Grid format. Overlaid additional layers with associated weight values.

Layers and layer use or purpose for this map:

- Forested pixels. Areas currently forested provide a base for passive recreation.
- Riparian Areas. Water bodies and rivers have high recreation value. How the areas bordering these features are treated can improve the recreation experience and help provide access.
- Protected Areas. Made up of Federal, State, and Municipal lands considered as protected from future development or significant change. These have value directly as recreation areas and as sites contributing to nearby recreation.
- Private Open Land. Semi-protected properties in private ownership. Some do not allow public access directly but do contribute to nearby recreation and may be part of local hunting clubs.
- Public and Recreation Potential. Federal, State, and Municipal lands considered as publicly accessible. Some may fall under the protected category. These have a direct public use, including trails, camping, or hunting.
- Threatened Species Areas. A rough overlay of areas with potential or existing threatened or endangered plants or animals. This layer was considered to have a negative influence on recreation. There is positive “feel good” value knowing an area has unique species living within it, but direct human activity on or near these locations should be discouraged
- Population Density. A 2000 census block layer with a density range applied to each pixel. An older model (2010 data was not available as of this writing); this layer still provides a relative spatial representation higher and lower population levels. Areas

within or near higher population areas were considered of higher value because of the potential for increased use.

- Trails (buffered). Trails were identified from available sources then buffered to include the value of surrounding pixels and as means to model a linear feature. These areas have a direct recreation value.

Layer weights: No layer weighting.

<u>LayerCode</u>	<u>LayerName</u>	<u>LayerWeight</u>
101	Forested	1
103	Riparian Areas	0.5
106a	Protected Areas	1
107b	Private Open Land	1
107c	Public and Recreation Potential	2
108	Threatened Species Polygons -1	
116	Population Density	0.5
119	Trails (buffered)	2

Additional Notes: The population density layer was the one layer where the grid pixel values retained a range during the analysis (0, 1, 2 – zero to medium and high density, versus 0, 1 for the others). To compensate for the potential to over emphasize the layer the weight was cut in half. An alternative is to preselect the density range and give it a value of 1.

Soil and Water Conservation

MapID: p3

Project: FinalMap_Priority03.mxd

Purpose: To identify areas with direct or indirect value to soil and water conservation within the State.

Description: Priority Number 3. Overlay analysis to identify areas with the higher need for protection based on their value to water conservation and quality, the protection of hydric soils, and areas with the potential for higher erosion if vegetation cover is removed.

Procedure: Weighted Overlay. Uses a combination of layers associated with the need for good water quality, wetlands protection, proximity to water systems, and concerns about slope.

Layers and layer use or purpose for this map:

- Forested pixels. Areas currently forested provide the best land cover for water resource protection and soil retention.
- Riparian Areas. Areas closest to streams and water bodies have the potential for the most direct influence on water quality and soil retention.
- Wetland Soils. Wetland areas have a direct impact on water systems and are often important within themselves.
- Priority Watersheds. Watersheds identified as important for contributing to human related water systems like municipal wells and reservoirs. Protecting them protects the resource.
- Steep Slopes. Slopes identified as greater than 25 percent are considered at higher risk for erosion issues if altered or the vegetation is removed.

Layer weights: No layer weighting.

<u>LayerCode</u>	<u>LayerName</u>	<u>LayerWeight</u>
101	Forested	1
103	Riparian Areas	1
104	Wetland Soils	1
105	Priority Watersheds	2
109	Steep Slopes (> 25%)	1

Additional Notes:

II. Display maps (no overlay analysis) for the Issues and Priority datasets

Critical Habitat Data

MapID: i1a

Project: FinalMap_Issue01a.mxd

Purpose: To identify areas with high potential or for current value as quality forest habitat, both for trees and animals. Timber production may coincide with similar areas, but the primary focus for this map set is increased biodiversity and overall health of the forest ecosystem.

Description: Issue Number 1. A simple display map of previously identified critical habitat areas relating to forests. No overlay analysis was required. Part of Maintaining Forest Ecosystem Health and Biodiversity.

Procedure: The critical habitat polygon layer was downloaded from the CT DEP GIS web site. Only feature attributes with references to forest habitat were selected for display. Selections using the statewide forest layer were not used to create a forest overlay because some of the critical habitat polygons related to forest habitat did not actually have trees on them. Selecting by direct overlap with the satellite forest cover data would have omitted portions of these polygons.

Promoting Stewardship of Public Forests

MapID: i2

Project: FinalMap_Issue02.mxd

Purpose: To highlight public forests within the State.

Description: Issue Number 2. Display of State, municipal and federal that overlay the forest 2006 dataset (only forested pixels remain).

Procedure: Display map only. Converted each layer to Grid format. Multiplied public lands by forest 2006 to remove non-forested.

Layers and layer purpose for this map:

- Federal properties – selected for public use only
- DEP properties
- Municipal properties selected for municipal, private removed.
- Forested 2006

Layer weights: No layer weighting. Did use forested for selection.

Additional Notes: None

Private Forested Lands

MapID: i3a

Project: FinalMap_Issue03.mxd

Purpose: To highlight the challenges and opportunities facing private forest.

Description: Issue Number 3. Selection of private forested lands. Public lands have been removed. Part of Protecting Private Forestlands.

Procedure: Display map only. Converted each layer to Grid format. Multiplied private lands by forest 2006 to remove non-forested.

Layers and layer use for this map:

- Federal properties - removed
- DEP properties - removed
- Municipal properties – municipal removed, private remains
- Forested 2006

Layer weights: No layer weighting. Did use forested for selection.

Additional Notes: Includes private protected lands.

Private Forested Lands with Protected as Overlay

MapID: i3b

Project: FinalMap_Issue03.mxd

Purpose: To highlight the challenges and opportunities facing private forest.

Description: Issue Number 3. Selection of private forested lands. Public lands have been removed. Protected lands added as an overlay, included private protected lands if known.

Procedure: Display map only. Converted each layer to Grid format. Multiplied private lands by forest 2006 to remove non-forested. Included protected lands layer as overlay.

Layers and layer use for this map:

- Federal properties - removed
- DEP properties - removed
- Municipal properties – municipal removed, private remains
- Protected lands - All available protected lands
- Forested 2006

Layer weights: No layer weighting. Did use forested for selection.

Additional Notes: Private protected lands combined with overall protected layer.

Trails and Public Lands

MapID: i4a

Project: FinalMap_Issue04a.mxd

Purpose: To highlight and identify areas with potential for passive forest based recreation within the State. Part of Providing For Forest Based Recreational Opportunities.

Description: Issue Number 4. Trail systems and public lands to highlight the trail network and their links to public lands within the State.

Procedure: Display map only. Used vector trail maps as provided by the CT DEP and the CT Forest and Parks association. Overlaid for display on top of public properties (DEP, Town, and Federal).

Layers and layer use for this map:

- Federal properties - public
- DEP properties - public
- Municipal properties – municipal (not private open space)
- CFPA Trail data (vector) – Includes unverified layer
- CT DEP Trail data (vector) – Includes all trail features (no attributes selected)

Layer weights: No layer weighting.

Additional Notes:

Supporting a Sustainable Forest Based Economy

MapID: i5

Project: FinalMap_Issue05.mxd

Purpose: To identify active sawmill locations within the State as a means to highlight the economic use and value of nearby forests.

Description: Issue Number 5. Point map of mill locations overlaid on the 2006 forested land cover data.

Procedure: Display map only. DEP Forestry provided an excel list of active mills and the street addresses for the owners (some coincide with the mill locations). These were converted to an ArcGIS point file using address matching then exported as a Google Earth KML file. The forester responsible reviewed the KML file points in Google Earth and edited the properties to

move misaligned points to the active mill locations on the Google Earth imagery. The revised KML file was converted back to ArcGIS shape format and used in this map.

Layers and layer use for this map:

- Forested 2006 – Base of forested lands within the State.
- Mill Locations – Point locations for active sawmills within the State.

Layer weights: No layer weighting.

Additional Notes: Locations are approximate.

The Role of Urban Forestry in Connecticut Communities

- Urban Tree Canopy

MapID: i9a

Project: FinalMap_Issue09.mxd

Purpose: To display the results of an assessment of tree canopy cover over municipalities within the State.

Description: Issue Number 9.

Procedure: Display map only. Data for canopy cover assessment by town was provided in an Excel spread sheet. The table was imported into an Access database and joined to the DEP Towns dataset using the Town number ID, then displayed in color using the ranked assessment field as the range (Highest to Very Low).

Layers and layer use for this map:

- Table – Canopy Assessment.xls, Urban and community forestry assessment by county subdivisions.
- State Towns – Simple town polygon outlines

Layer weights: No layer weighting.

Additional Notes: Excel table provided by Chris Donnelly of the Connecticut Experiment Station.

The Role of Urban Forestry in Connecticut Communities

- Population Density by Municipality

MapID: i9b

Project: FinalMap_Issue09.mxd

Purpose: To display the population density for the towns within the State.

Description: Issue Number 9.

Procedure: Display map only. Data for population density in people per square mile for each town was provided in an Excel spread sheet. The table was imported into an Access database and joined to the DEP Towns dataset using the Town number ID, then displayed in color using the people per square mile field.

Layers and layer use for this map:

- Table – Population Density.xls, year 2000 population characteristics by town.
- State Towns – Simple town polygon outlines

Layer weights: No layer weighting.

Additional Notes: Excel table provided by Chris Donnelly of the Connecticut Experiment Station.

The Role of Urban Forestry in Connecticut Communities

- Impervious Surface Cover by Municipality

MapID: i9c

Project: FinalMap_Issue09.mxd

Purpose: To display relative impervious surface levels for the towns within the State.

Description: Issue Number 9.

Procedure: Display map only. Percent impervious surface values for each town were provided in an Excel spread sheet. The table was imported into an Access database and joined to the DEP Towns dataset using the Town number ID, then displayed in color using a range divided by natural breaks.

Layers and layer use for this map:

- Table – Impervious surface.xls. Tree canopy and impervious surface cover characteristics by county subdivision.
- State Towns – Simple town polygon outlines

Layer weights: No layer weighting.

Additional Notes: Excel table provided by Chris Donnelly of the Connecticut Experiment Station.

The Role of Urban Forestry in Connecticut Communities

- Urban Forestry Activity by Municipality

MapID: i9d

Project: FinalMap_Issue09.mxd

Purpose: To display the results of the FY2010 Community Accomplishment Detail Report for Connecticut. The values are a relative measure of the forestry activity and understanding of forestry issues by the towns within the State.

Description: Issue Number 9.

Procedure: Display map only. Field values for various factors related to UCF Type, Management Plans, Staff, Ordinances, Advisory, Tree City USA, and Grants were provided for each town in an Excel spread sheet. These fields (1,0 values) were summarized to represent a total based on which factors were represented for each town. The table was imported into an Access database and joined to the DEP Towns dataset using the Town number ID, then displayed in color using the total values as an indicator of town forestry accomplishments and planning.

Layers and layer use for this map:

- Table – communitySocialList.xls. FY2010 Community Accomplishment Detail Report for Connecticut.
- State Towns – Simple town polygon outlines

Layer weights: No layer weighting.

Additional Notes: Excel table provided by Chris Donnelly of the Connecticut Experiment Station.

The Role of Urban Forestry in Connecticut Communities

- Certified Tree Wardens by Municipality

MapID: i9e

Project: FinalMap_Issue09.mxd

Purpose: To display the number of individuals who may be active or assisting with tree warden responsibilities for the towns. This can be an indicator of urban forestry activity and interest.

Description: Issue Number 9.

Procedure: Display map only. Tree warden information was listed by type (tree warden, deputy) for each town within an Excel spread sheet. The table and imported into an Access database and simplified to provide a count per town. This value was joined to the DEP Towns dataset using the Town number ID, then displayed in color using a range. The results were not normalized by population.

Layers and layer use for this map:

- Table –CertTreeWardens10_7_09woDOT.xls. Tree warden listing by town.
- State Towns – Simple town polygon outlines

Layer weights: No layer weighting.

Additional Notes: Excel table provided by Chris Donnelly of the Connecticut Experiment Station.

Insect and Disease Vulnerability

- Risk of Basal Area Loss from Gypsy Moth

MapID: p5a

Project: FinalMap_Priority05.mxd

Purpose: To highlight the potential impacts of insect and diseases on the forests within the State.

Description: Priority Number 5. Relative spatial interpretation of forest areas where Gypsy Moth infestations would most likely occur.

Procedure: Display map only. Downloaded data grid files of total basal area losses for the 11 most significant mortality agents from the Forest Service Forest Health Technology Enterprise Team (FHTET) web site <http://www.fs.fed.us/foresthealth/technology/nidrm.shtml> . Of the top

11, Gypsy Moth is one of the agents found within Connecticut. File was subset to Connecticut. Data resolution is one kilometer per pixel.

Layers and layer use for this map:

- gm_baloss – Risk of basal area loss from Gypsy Moth.

Layer weights: No layer weighting.

Additional Notes:

Housing Density Projection

- Urban Growth 1985 to 2006

MapID: p6

Project: FinalMap_Priority06.mxd

Purpose: To display historic increases in urban cover as an indicator of potential change in the future.

Description: Priority Number 6. Land cover pixels classified as urban in the 2006 land cover dataset and as non-urban features in the 1985 dataset. The result shows increased urban cover. Any potential change from urban back to a vegetation cover is rare. If identified in the land cover analysis it would likely be increased tree canopy above urban features.

Procedure: A series of land cover maps are available for Connecticut through the College of Agriculture's Center for Landuse Education and Research (CLEAR). The remote sensing group within this center created cover maps for the years 1985, 1990, 1995, 2002, and 2006. For this map set urban cover types were selected from the 2006 and 1985 datasets, resampled to 1 and 0 values, then the 1985 data was subtracted from the 2006 data using ArcGIS Spatial Analyst. Remaining pixels with a positive value represent an increase in urban cover between the two periods. Pixel resolution is 100 feet per side.

Layers and layer use for this map:

- Land Cover 2006 – CLEAR Land Cover dataset, selected for urban cover.
- Land Cover 1985 – CLEAR Land Cover dataset, selected for urban cover.

Layer weights: No layer weighting.

Additional Notes:*Forest Fragmentation**- Forest Loss 1985 to 2006***MapID: p7a****Project:** FinalMap_Priority7a.mxd**Purpose:** To display historic decreases in forest cover as an indicator of potential change in the future.**Description:** Priority Number 7. Land cover pixels classified as non-forested in the 2006 land cover dataset and as forested in the 1985 dataset. The result is forest loss. Measuring change back to forest cover requires longer time frames and rarely includes features previously converted to developed or urban.**Procedure:** A series of land cover maps are available for Connecticut through the College of Agriculture's Center for Landuse Education and Research (CLEAR). The remote sensing group within this center created cover maps for the years 1985, 1990, 1995, 2002, and 2006. For this map forest cover types were selected from the 2006 and 1985 datasets, resampled to 1 and 0 values, then the 1985 data was subtracted from the 2006 data using ArcGIS Spatial Analyst. Remaining pixels with a negative value represent a decrease in forest cover between the two periods. Pixel resolution is 100 feet per side.**Layers and layer use for this map:**

- Land Cover 2006 – CLEAR Land Cover dataset, selected for forest cover.
- Land Cover 1985 – CLEAR Land Cover dataset, selected for forest cover.

Layer weights: No layer weighting.**Additional Notes:** Detailed analysis summarizing landscape changes over time can be found at the CLEAR website <http://clear.uconn.edu/projects/landscape/>*Forest Fragmentation**- Fragmentation Analysis 1985***MapID: p7b1****Project:** FinalMap_Priority7b.mxd

Purpose: To display the resulting map from the CLEAR statewide forest fragmentation analysis.

Description: Priority Number 7. Statewide forest fragmentation analysis results for 1985. Categories include Core forests of various size levels, and patch, edge, and perforated forest areas. To provide focus, core areas greater than 100 hectares are likely to be of more value and quality for forest species.

Procedure: A series of forest fragmentation maps are available for Connecticut through the College of Agriculture's Center for Landuse Education and Research (CLEAR). The remote sensing group within this center created fragmentation maps for the years 1985, 1990, 1995, 2002, and 2006. The 1985 map was used for this display. The features extend beyond Connecticut to the boundaries of local watersheds.

Layers and layer use for this map:

- Forest Fragmentation 1985 – CLEAR forest fragmentation analysis.

Layer weights: No layer weighting.

Additional Notes: Detailed analysis summarizing changes in fragmentation over time can be found at the CLEAR website <http://clear.uconn.edu/projects/landscape/forestfrag/>

Forest Fragmentation

- Fragmentation Analysis 2006

MapID: p7b2

Project: FinalMap_Priority7b.mxd

Purpose: To display the resulting map from the CLEAR statewide forest fragmentation analysis.

Description: Priority Number 7. Statewide forest fragmentation analysis results for 2006. Categories include Core forests of various size levels, and patch, edge, and perforated forest areas. To provide focus, core areas greater than 100 hectares are likely to be of more value and quality for forest species.

Procedure: A series of forest fragmentation maps are available for Connecticut through the College of Agriculture's Center for Landuse Education and Research (CLEAR). The remote sensing group within this center created fragmentation maps for the years 1985, 1990, 1995,

2002, and 2006. The 2006 map was used for this display. The features extend beyond Connecticut to the boundaries of local watersheds.

Layers and layer use for this map:

- Forest Fragmentation 2006 – CLEAR forest fragmentation analysis.

Layer weights: No layer weighting.

Additional Notes: Detailed analysis summarizing changes in fragmentation over time can be found at the CLEAR website <http://clear.uconn.edu/projects/landscape/forestfrag/>

III. Layer Definitions and Numbering System

The following is a listing of each of the layers available for the analysis process. Not all of them were used, at times because of quality concerns brought up during review meetings. Some layers are used more than once. Sections like protected areas and public lands have individual selections from the same spatial dataset – broken out by the attribute field values appropriate for the given use.

LayerID - Layer Title:

101 - Forested

Existing forest cover. In this case derived from satellite analysis in 2006. This is a base layer for the analysis of existing forest (vs. potential growing sites). This layer will have a minimum value of one (1), to make sure it is counted, but could be ranked higher if the reviewer feels the mere existence of forest cover is a primary factor over other types of values (such as slope, core, etc.).

102 - Core Forest

Regions of core forest derived from the forested cover. Defined as areas unbroken by major roads or other man made features, then subset a specific distance in from those fragmenting features. This falls under the assumption there are benefits to large unbroken forest blocks at a distance away from fragmenting features.

103 - Riparian Areas

Areas extending a set distance upland from streams and other water features - including wetlands and marshes. In this analysis 300 feet was chosen as the buffer distance. An assumption is this zone would better protect water quality and habitat if in a forested state.

104 - Wetlands

Wetlands as defined by hydric types and other wetland categories within the soils spatial database. Some of the wetland features may be forested. For the analysis the uplands surrounding the wetland may be of importance.

105 - Priority Watersheds

Watersheds identified as having significant value for drinking water supplies within the State. Features falling within these boundaries can be considered important toward the protection of resources the watersheds provide.

106 - Protected Areas

This is a mix of lands that should remain in a natural or semi-natural state. Not all are public, such as private easements if available. The features are selections from the same datasets; the letters identify the separate categories from those selections. Only layers available within the statewide datasets were used.

106a - osproprot Protected lands. Assumes these lands will not be converted from a natural resource use.

106b - proximity Proximity to protected lands. Used to address the natural resource value of lands near protected areas - either a set distance (i.e. 500 or 1000 feet) or a range of values.

106c - unprotected Opposite of protected lands. These areas have no protection status given the data available on a statewide level.

107 - Public Lands

Public lands as identified by Municipal, State, and Federal lands GIS datasets. Not all are protected; some areas are identified as regulated or as areas of significance like heritage zones. Public use can influence recreational values as well as have natural resource implications. Variable selections and combinations were made to identify only those land areas applicable to the map overlays they will be used in. The features are selections from the same datasets. The letters identify the separate categories from those selections. Individual towns or organizations may have more detailed records than these statewide datasets:

107a - ospropMuni (Municipal Open Properties) - Open or protected lands owned by towns other municipal agencies.

107b - ospropPriv (Private Open Land) - Open or protected lands owned by individuals, land trusts, or private groups.

107c - ospropRec (Public and Recreational Potential) - All public open or protected lands providing value for recreation

107d - ospropEcon (Economic Resources) - Open or protected lands with potential for forest resource use.

107e - osPrivate (Private Land) - Opposite of ospropRec (107c). All land falling outside the known public areas. Includes private open space (107b).

108 - Threatened and Endangered Species

Locations for known threatened or endangered species. Features covered by these areas may be considered of value on the assumption the species have already made their selection based on habitat quality. The locations for these areas are generalized, but the layer can provide notice of where protection or habitat value is important.

109 - Slope

Steep slopes. Slopes above a specified percentage or angle of grade can increase the likelihood of erosion if the soils on those slopes are not protected by vegetation. In addition, steep slopes may be considered as areas needing special attention when considering site work for harvesting operations. For this project a value greater than or equal to 25 percent is provided as a layer.

110 - Site Productivity

Productive (farm) soils are identified within the statewide Soils database. Not all are in production as agriculture, some fall under existing forested areas or may be considered as prime growing sites for forest if agriculture is not a planned use. Protecting these areas may have a unique value.

111 - Development Level/Change

Change/Increase in development for given census blocks. Those sections of greatest change could be considered as requiring a need for increased protection, as areas at risk of conversion to a developed use, or as areas where the primary interest is development.

112 - Forest Health Risks

Risks to the forest from insects or disease. This layer is based on several factors linking the potential for insect damage or forest stress within the identified areas. These data

were created for a nationwide dataset at a larger scale than the 30 meter datasets, hence the large block appearance on the maps.

113 - Wildfire Risk

Areas identified as having increase potential for fire risk, primarily as potential to burn (south facing aspect, dryer soils, and other factors).

114 - Stewardship Plans

Existing Stewardship projects on town, land trust, and private properties.

115 - Towns (Town Policies)

Spatial database of town boundaries. Several database tables were linked to a basic GIS town dataset. Attributes within the joined dataset allow for the display of a ranking system representing the town regulations and other policy issues related to forests and forestry. How the town policies effect these may influence how forests are managed within those boundaries.

116 - Population Density

This layer represents population density by census blocks. One intent is to highlight areas (pixels) of a specific density or density range to help classify and rank areas for urban forestry.

117 - Impervious Surface

This is a somewhat experimental layer representing relative imperviousness over a given 30 meter pixel. Highlighting areas with high or low impervious cover this may direct where forest cover could mitigate the effects. The current plan is to summarize the values over a given area, possibly a town. The weight would be attached to that feature.

118 - Water Quality

This is a surface water quality layer provided by the State. Highlighting rivers or lakes with impaired waters may direct which upland areas or towns need forest planning. The current plan is to summarize the values over a given area, possibly a town or watershed. The weight would be attached to that feature. Codes provided within the map layer are values assigned by CT DEP. Details can be found within the metadata at the DEP web site. The plan was to summarize those values into a range we can use for the project.

119 - Trails

This is a compilation of trail line features from the State, CT Forest and Parks Association, (CFPA) and the Appalachian Trail. For the grid overlay analysis the centerlines were buffered by 100 feet on a side then converted to 30 meter pixels.

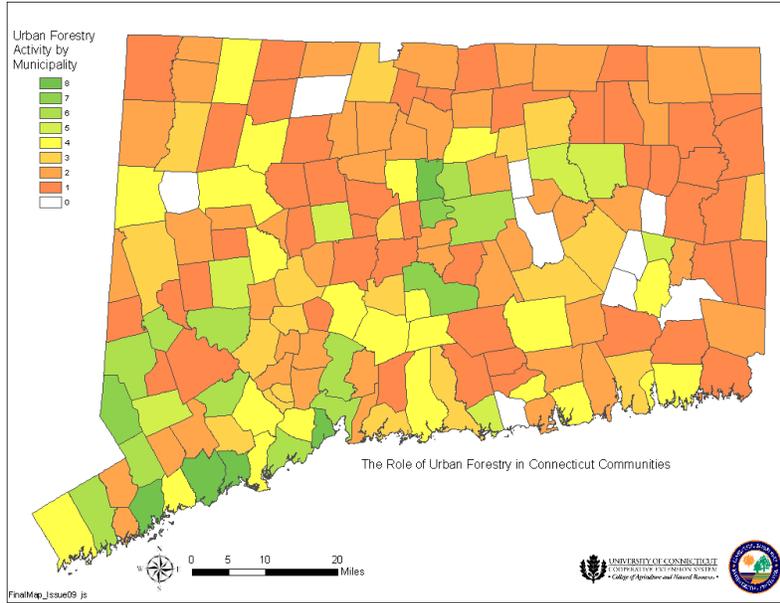
120 – Critical Habitat

This dataset was derived by Ken Mezler's and provided on the CT DEP web site. For the project the areas associated with forest were selected from the attribute table. This layer is used in addition to the Natural Diversity Database layer to provide a better picture of areas sensitive from a wildlife habitat perspective.

APPENDIX 8 Map Appendices

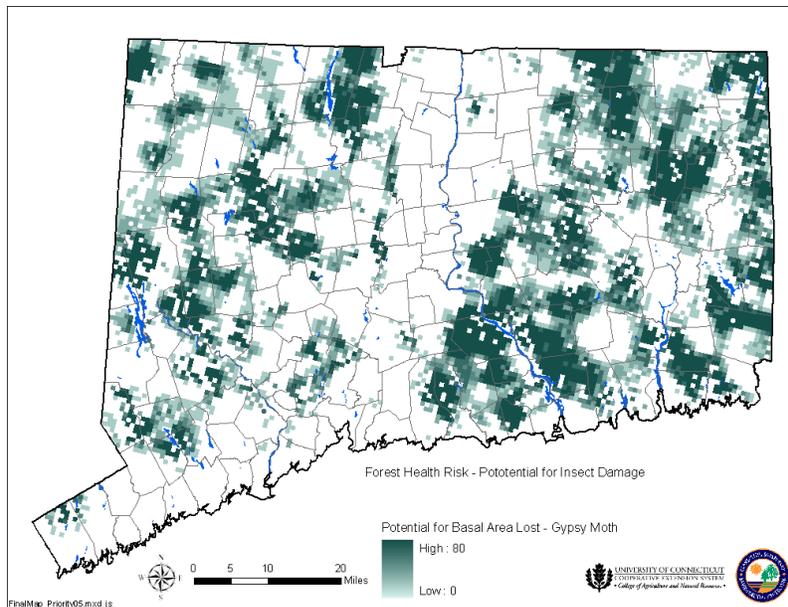
UConn CLEAR generated the following maps in addition to those included throughout this report. All GIS mapping was created by CLEAR unless otherwise stated.

Map A. Forestry Activity and Understanding of Forestry Issues by Municipality

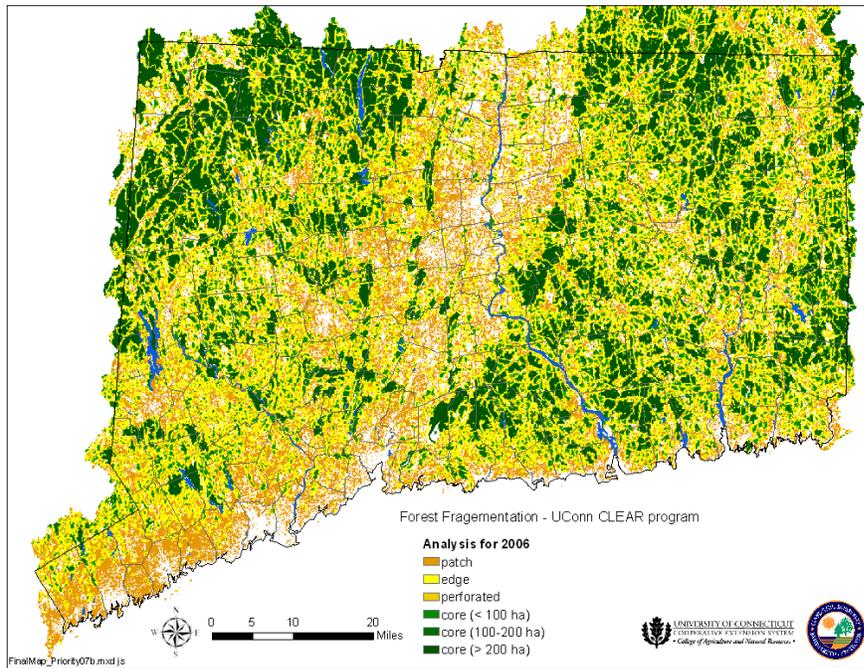


Purpose: To display the results of the FY2010 Community Accomplishment Detail Report for Connecticut. The values are a relative measure of the forestry activity and understanding of forestry issues by the towns within the State

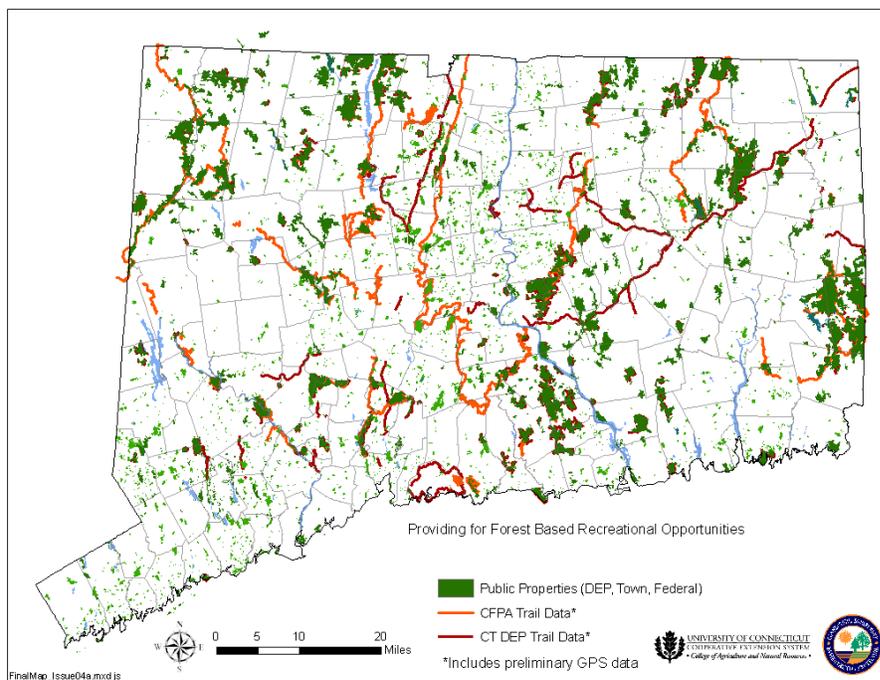
Map B. Forest Health Risk for Gypsy Moth Damage



Map C. Connecticut Forest Fragmentation 2006



Map D. Statewide Recreational Opportunities



APPENDIX 9. Comments on Roundtable Process

The following comments were received in the public comment session following the Roundtable process.

Comment 1.

I left a phone message that I would mail you this thought. I haven't personally been able to participate in the Statewide Forest Plan - primarily because I work outside of forestry - and in New York City. However, I do spend a fair amount of time thinking about, and acting on forestry related issues - specifically restoration of the American chestnut as a forest species. More general information can be found on our web-site at <http://ctacf.org>.

We have been very successful in CT bridging the public\private space by working with Government agencies and other funding sources such as Northeast Utilities, Norcross Foundation, and other Foundations to support our work with private landowners (especially Land Trusts, Audubon, White Memorial, and private owners) as well as Town Conservation organizations. We now have [seven back-cross research orchards in CT](#) with over [2200 trees planted](#) ... we'll be planting another 700 this spring in new orchards in Middletown and Litchfield. These trees planted are all progeny of local CT trees we've been able to successfully pollinate with controlled pollination. We use a scientifically peer reviewed and accepted back-cross method of breeding in blight resistance to native CT American chestnut. We have a strategic plan with metrics that we've been successfully achieving. We have a volunteer [Board of Directors](#) in CT with five PhDs and a wealth of imaginative ideas and devoted members. We try to work smart. We bring top researchers from across the country to present at our annual meeting held at locations such as Yale University, and recently Trinity College. Dr. Tom Kubisiak from the USFS came to Trinity two weeks ago and addressed a crowd of about a hundred people on molecular genetics and specifically what the [Fagaceae Genome Project](#) is doing to decode the genomes of both American and Chinese chestnut, as well as the chestnut fungus *Cryphonectria parasitica*.

Ok so enough of trying to establish our credentials. Hopefully I've been successful. Here is the idea I would like to see built into the plan.

Can a statement be built into the plan where the "plan" recognizes the activity of forest species restoration through breeding and other programs focused on restoring species that have been impacted by foreign pathogens? It would benefit all if the plan recognized and suggested supporting the research and then restoration efforts of such groups.

Specifically I'm thinking of efforts by groups like ours, or Sandy Anagnostakis at CAES, or other groups that may need to work in the future on problems like *Phytophthora cinnimomi* or the Emerald Ash borer, or goodness knows what pathogens and pests that might be unleashed in the future. The statement need do no more than recognize that there are pests and pathogens, and that groups are working to combat their effects, and that the public and private sectors should - where feasible - support such efforts.

I'm just hoping that since I can't participate, that such a statement isn't somehow left out.

Thanks for reading this.

--

Bill Adamsen
Director, The American Chestnut Foundation
President, CT Chapter

Comment 2

I'm unable to attend the roundtables, but wish to plead for preservation of our forests in CT. The United Nations has asked that we plant a tree for each of the world's population to address climate change and air pollution. That would be 2 million trees to preserve for the future of the planet. The program that DEP Commissioner Gina Murphy brought to us - Leave No Child Inside - and the book by Louv, The Last Child in the Forest- details how valuable the world of trees and nature is to the healthy development of children. Our world cannot be defined by money interests alone, for the dollar bills cannot challenge the imagination and wonder of the world where birds, squirrels and other creatures invoke the peace and linkage of our human world with the world of nature. We have seen the devastation of clear cutting by powerful logging interests and inadequate planning for reforestation and habitat for the creatures that live there. The erosion of Haiti's arable land, the desertification of large areas of Africa and the growing desert in our Pacific northwest should be evidence enough that the decisions you make are vital to the future of our state and planet. The beauty of Connecticut and attraction for tourists can be cataloged as impetus to preserve these priceless wild places. My days on this earth are limited, but I want the children of the future to have the joy of climbing a tree and looking at the sky through unfolding green leaves as the flash of color of migrating warblers excites the creativity and imagination to express this beauty in art & music. Children need to know the songs of this earth and the colors of the heights that trees provide. I look forward to a report of your deliberations and thank you for your stewardship of our trees. Mary Keane, Trumbull

APPENDIX 10. CT Invasive Plants Council Connecticut Invasive Plant List July 2009
Ordered by Common Name

Statement to accompany list – January 2004: This is a list of species that have been determined by floristic analysis to be invasive or potentially invasive in the state of Connecticut, in accordance with PA 03-136. The Invasive Plants Council will generate a second list recommending restrictions on some of these plants. In developing the second list and particular restrictions, the Council will recognize the need to balance the detrimental effects of invasive plants with the agricultural and horticultural value of some of these plants, while still protecting the state's minimally managed habitats.

In May 2004, Public Act 04-203 banned a subset of the January 2004 list making it illegal to move, sell, purchase, transplant, cultivate, or distribute banned plants.

@ column indicates growth form or habitat: **A** = Aquatic & Wetland; **G** = Grass & Grass-like; **H** = Herbaceous; **S** = Shrub; **T** = Tree; **V** = Woody Vine

Explanation of symbols after Common Name:

(P) indicates Potentially Invasive (all other plants listed are considered Invasive in Connecticut)

* denotes that the species, although shown by scientific evaluation to be invasive, has cultivars that have not been evaluated for invasive characteristics. Further research may determine whether or not individual cultivars are potentially invasive. Cultivars are commercially available selections of a plant species that have been bred or selected for predictable, desirable attributes of horticultural value such as form (dwarf or weeping forms), foliage (variegated or colorful leaves), or flowering attributes (enhanced flower color or size).

^ indicates species that are not currently known to be naturalized in Connecticut but would likely become invasive here if they are found to persist in the state without cultivation

BAN column indicates ban date: **2003** = banned under PA 03-136; **2004** = effective October 1, 2004; **2005** = effective October 1, 2005; **N/A** = invasive or potentially invasive plants not banned under PA 04-203; effective July 1, 2009, PA 09-52 removed the ban on water lettuce.

COMMON NAME	@	SCIENTIFIC NAME	SYNONYMS	BAN
American water lotus (P)	A	<i>Nelumbo lutea</i> (Willd.) Pers.	American lotus-lily	2005
Amur honeysuckle	S	<i>Lonicera maackii</i> (Rupr.) Maxim.		2004
Amur maple (P)	T	<i>Acer ginnala</i> L.		N/A
Autumn olive	S	<i>Elaeagnus umbellata</i> Thunb.		2004
Bell's honeysuckle	S	<i>Lonicera X bella</i> Zabel	Belle honeysuckle	2004
Bittersweet nightshade (P)	H	<i>Solanum dulcamara</i> L.	Climbing nightshade	2004
Black locust*	T	<i>Robinia pseudo-acacia</i> L.		N/A
Black swallow-wort	H	<i>Cynanchum louiseae</i> Kartesz & Gandhi	<i>Vincetoxicum</i> or <i>Cynanchum nigrum</i>	2004
Border privet (P)	S	<i>Ligustrum obtusifolium</i> Sieb. & Zucc		2005
Brazilian water-weed (P)	A	<i>Egeria densa</i>	Planchon Anacharis; Egeria	2003
Bristled knotweed (P)	H	<i>Polygonum caespitosum</i> Blume	Smartweed	2004
Brittle water-nymph (P)	A	<i>Najas minor</i> All.	Eutrophic water-nymph	2005
Canada bluegrass (P)	G	<i>Poa compressa</i> L.		2004
Canada thistle (P)	H	<i>Cirsium arvense</i> (L.) Scop.		2004
Coltsfoot	V	<i>XTussilago farfara</i> L.		2004
Common barberry	S	<i>Berberis vulgaris</i> L.		2004
Common buckthorn	S	<i>Rhamnus cathartica</i> L.		2004
Common kochia (P)	H	<i>Kochia scoparia</i> (L.) Schrader	Summer cypress; Fireweed	2004
Common reed	G	<i>Phragmites australis</i> (Cav.) Trin.	Phragmites	2004
Common water-hyacinth^ (P)	A	<i>Eichhornia crassipes</i> (Mart.) Solms		N/A
Crispy-leaved pondweed	A	<i>Potamogeton crispus</i> L.	Curly or Curly-leaved pondweed	2003
Cup plant (P)	H	<i>Silphium perfoliatum</i> L.		2004
Cypress spurge (P)	H	<i>Euphorbia cyparissias</i> L.		2004
Dame's rocket	H	<i>Hesperis matronalis</i> L.		2004
Drooping brome-grass (P)	G	<i>Bromus tectorum</i> L.	Cheatgrass	2004
Dwarf honeysuckle^ (P)	S	<i>Lonicera xylosteum</i> L.	European fly-honeysuckle	2005

COMMON NAME	@	SCIENTIFIC NAME	SYNONYMS	BAN
Eulalia* (P)	G	<i>Miscanthus sinensis</i> Anderss.	Chinese or Japanese silvergrass	N/A
Eurasian watermilfoil	A	<i>Myriophyllum spicatum</i> L.		2003
European privet (P)	S	<i>Ligustrum vulgare</i> L.		N/A
European waterclover (P)	A	<i>Marsilea quadrifolia</i> L.	Water shamrock	2005
False indigo (P)	S	<i>Amorpha fruticosa</i> L.		2004
Fanwort	A	<i>Cabomba caroliniana</i> A. Gray		2003
Fig buttercup	H	<i>Ranunculus ficaria</i> L.	Lesser celandine	2004
Flowering rush (P)	A	<i>Butomus umbellatus</i> L.		2005
Forget-me-not	A	<i>Myosotis scorpioides</i> L.	True forget-me-not; Water scorpion-grass	2005
Garden heliotrope (P)	H	<i>Valeriana officinalis</i> L.	Valerian	2004
Garden loosestrife* (P)	H	<i>Lysimachia vulgaris</i> L.		2005
Garlic mustard	H	<i>Alliaria petiolata</i>	auth. = (Bieb.) Cavara & Grande	2004
Giant hogweed (P)	H	<i>Heracleum mantegazzianum</i>	auth. = Sommier & Lavier	2004
Giant knotweed (P)	H	<i>Polygonum sachalinense</i>	auth. = F. Schmidt ex Maxim.; <i>Fallopia</i> s...	2004
Giant salvinia^ (P)	A	<i>Salvinia molesta</i> Mitchell complex		2005
Glossy buckthorn	S	<i>Frangula alnus</i> Mill.	European buckthorn; <i>Rhamnus frangula</i>	N/A
Goutweed	H	<i>Aegopodium podagraria</i> L.		2005
Ground ivy (P)	H	<i>Glechoma hederacea</i> L.	Run-away robin; Gill-over-the-ground	2004
Hairy jointgrass (P)	G	<i>Arthraxon hispidus</i> (Thunb.) Makino	Small carpgrass	2004
Hydrilla	A	<i>Hydrilla verticillata</i> (L.f.) Royle		2003
Japanese barberry*	S	<i>Berberis thunbergii</i> DC.		N/A
Japanese honeysuckle*	V	<i>Lonicera japonica</i> Thunb.		2005
Japanese hops (P)	H	<i>Humulus japonicus</i> Sieb. & Zucc.		2004
Japanese knotweed	H	<i>Polygonum cuspidatum</i> Sieb. & Zucc. <i>Fallopia japonica</i>		2004
Japanese sedge^ (P)	G	<i>Carex kobomugi</i> Owhi		2004
Japanese stilt grass	G	<i>Microstegium vimineum</i> auth. = (Trin.) A. Camus		2004
Jimsonweed (P)	H	<i>Datura stramonium</i> L.		2004
Kudzu (P)	V	<i>Pueraria montana</i> (Lour.) Merr.	<i>Pueraria lobata</i>	2004
Leafy spurge	H	<i>Euphorbia esula</i> L.		2004
Mile-a-minute vine	H	<i>Polygonum perfoliatum</i> L.		2004
Moneywort* (P)	H	<i>Lysimachia nummularia</i> L.	Creeping jenny	N/A
Morrow's honeysuckle	S	<i>Lonicera morrowii</i> A. Gray		2004
Multiflora rose	S	<i>Rosa multiflora</i> Thunb.		2004
Narrowleaf bittercress	H	<i>Cardamine impatiens</i> L.		2004
Norway maple*	T	<i>Acer platanoides</i> L.		N/A
Onerow yellowcress (P)	A	<i>Rorippa microphylla</i>	auth. = (Boenn. ex Reichenb.) Hyl. ex A. & D. Löve	2005
Oriental bittersweet	V	<i>Celastrus orbiculatus</i> Thunb.	Asiatic bittersweet	2004
Ornamental jewelweed^ (P)	H	<i>Impatiens glandulifera</i> Royle	Tall impatiens	2004
Pale swallow-wort	H	<i>Cynanchum rossicum</i> (Kleo.) Borhidi	<i>Vincetoxicum rossicum</i>	2004

COMMON NAME	@	SCIENTIFIC NAME	SYNONYMS	BAN
Parrotfeather (P)	A	<i>Myriophyllum aquaticum</i>	auth. = (Vell.) Verdc.	2005
Perennial pepperweed	H	<i>Lepidium latifolium</i> L.	Tall pepperwort	2004
Pond water-starwort (P)	A	<i>Callitriche stagnalis</i> Scop.		2005
Porcelainberry* (P)	V	<i>Ampelopsis brevipedunculata</i>	auth. = (Maxim.) Trautv.	N/A
Princess tree (P)	T	<i>Paulownia tomentosa</i>	auth. = (Thunb.) Steudel; Empress-tree	2004
Purple loosestrife	A	<i>Lythrum salicaria</i> L.		2005
Ragged robin (P)	H	<i>Lychnis flos-cuculi</i> L.		2004
Reed canary grass	G	<i>Phalaris arundinacea</i> L.		N/A
Reed mannagrass (P)	G	<i>Glyceria maxima</i> (Hartman) Holmberg	Tall mannagrass	2004
Rugosa rose* (P)	S	<i>Rosa rugosa</i> Thunb.	Beach, Salt spray, Jap., or Ramanas Rose	N/A
Russian olive (P).	S	<i>Elaeagnus angustifolia</i> L.		2004
Scotch thistle (P)	H	<i>Onopordum acanthium</i> L.		2004
Sheep sorrel (P)	H	<i>Rumex acetosella</i> L.		2004
Slender snake cotton (P)	H	<i>Froelichia gracilis</i> (Hook.) Moq.	Cottonweed	2004
Spotted knapweed	H	<i>Centaurea biebersteinii</i> DC.	<i>Centaurea maculosa</i>	2004
Star-of-Bethlehem (P).	H	<i>Ornithogalum umbellatum</i> L.		N/A
Sycamore maple (P)	T	<i>Acer pseudoplatanus</i> L.		2004
Tansy ragwort^ (P).	H	<i>Senecio jacobaea</i> L.	Stinking Willie	2004
Tatarian honeysuckle (P)	S	<i>Lonicera tatarica</i> L.		2005
Tree of heaven	T	<i>Ailanthus altissima</i> (Mill.) Swingle		2004
Variable-leaf watermilfoil	A	<i>Myriophyllum heterophyllum</i> Michx.		2003
Water chestnut	A	<i>Trapa natans</i> L.		2003
Water lettuce^ (P)	A	<i>Pistia stratiotes</i> L.		N/A
Watercress (P)	A	<i>Rorippa nasturtium-aquaticum</i>	auth. = (L.) Hayek; <i>Nasturtium officinale</i>	2005
White poplar (P)	T	<i>Populus alba</i> L.		2004
Wineberry (P)	S	<i>Rubus phoenicolasius</i> Maxim.		2004
Winged euonymus*	S	<i>Euonymus alatus</i> (Thunb.) Sieb.	Burning-bush	N/A
Yellow floating heart^ (P)	A	<i>Nymphoides peltata</i> (Gmel.) Kuntze		2005
Yellow iris L.	A	<i>Iris pseudacorus</i>		2005

Appendix 11. List of Acronyms

This list of acronyms is for quick reference of those acronyms used in the body of the plan. For a list of acronyms used for citing purposes. Please see Literature Cited.

Acronym	Full name
ALB	Asian Longhorned Beetle
AON	Assessment of Need
APHIS	Federal Agricultural Plant Health Inspection Services
AT	Appalachian Trail
ATV	All Terrain Vehicle
BBS	Breeding Bird Survey
BMP	Best Management Practice
CAES	Connecticut Agricultural Experiment Station
CAPS	Connecticut Agricultural Pest Survey
CARS	Community Accomplishments Reporting System
CDS	Citizen Demand Survey
CEPA	Connecticut Environmental Policy Act
CES	Cooperative Extension System
CEU	Continuing Education Credit/Unit
CFC	Connecticut Forestlands Council
CFPA	Connecticut Forest and Park Association
CGS	Connecticut General Statutes
CLEAR	Center for Land Use Education and Research
COLE	Carbon On-Line Estimator
CT	Connecticut
CTFRP	Connecticut Statewide Forest Resource Plan
CTPA	Connecticut Tree Protective Association
CUFC	Connecticut Urban Forest Council
CWCS	Comprehensive Wildlife Conservation Strategy
DEP	Department of Environmental Protection
DOE	Department of Energy
DOF	Division of Forestry
DOT	Department of Transportation
EAB	Emerald Ash Borer
ECFLA	Eastern Connecticut Forest Landowners Association
FD	Fire Department
FEPP	Federal Excess Property Program
FHM	Forest Health Monitoring
FIA	Forest Inventory and Analysis
FLA	Forest Legacy Area
FLEP	Forest Land Enhancement Program
FLP	Forest Legacy Program
GIS	Geographic Information System
HCEP	Fisheries Habitat Conservation Enhancement Plan

Acronym	Full name
HWA	Hemlock Woolly Adelgid
ICS	Incident Command System
IMT	Incident Management Team
MLC	Master Logger Certification
MMM	Metacomet-Monadnock-Mattabesett Trail
NA S&PF	Northeastern Area State & Private Forestry
NFFPC	Northeastern Forest Fire Protection Compact
NGO	Non-governmental Organization
NIMS	National Incident Management System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NSF	National Science Foundation
NWCG	National Wildfire Coordinating Group
OPM	Office of Policy and Management
ORV	Off Road Vehicle
PA 490	Public Act 490
PLT	Project Learning Tree
POSM	Protected Open Space Mapping Project
PPQ	Plant Protection Quarrantine
SCORP	State Comprehensive Outdoor Recreation Plan
SFSC	State Forest Stewardship Committee
SNE-GAP	Southern New England Gap Analysis Program
SOD	Sudden Oak Death
SOP	Standard Operating Procedure
SWAP	State Wildlife Action Plan
TIMPRO	Connecticut Professional Timber Producers Association
TLGV	The Last Green Valley, Inc.
TNC	The Nature Conservancy
TPL	The Trust For Public Land
UCONN	University of Connecticut
USDA	United States Department of Agriculture
USFS	United States Forest Service
VHP	Volunteer Horse Patrol
WDLT	Wolf Den Land Trust
WQS	Water Quality Standards and Criteria
WUI	Wildland Urban Interface
Yale F&ES	Yale School of Forestry and Environmental Studies