

# State Wildlife Action Plan Update on Element 2: Habitats



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# Topics to Be Covered

- Habitat Classification Refresher
- SGCN/Habitat Linkages: Revisions
- Updated Results: Habitats most important to SGCN
- Habitat Prioritization
- Approach to Species Range Maps

# NE Terrestrial Habitat Classification

## NORTHEASTERN TERRESTRIAL WILDLIFE HABITAT CLASSIFICATION

The Northeast Habitat Classification and Mapping Project



a report to the Virginia Department of Game and Inland Fisheries  
on behalf of the Northeast Association of Fish and Wildlife Agencies  
and the National Fish and Wildlife Foundation

Susan C. Gawler  
NatureServe  
Boston, Massachusetts

November 2008



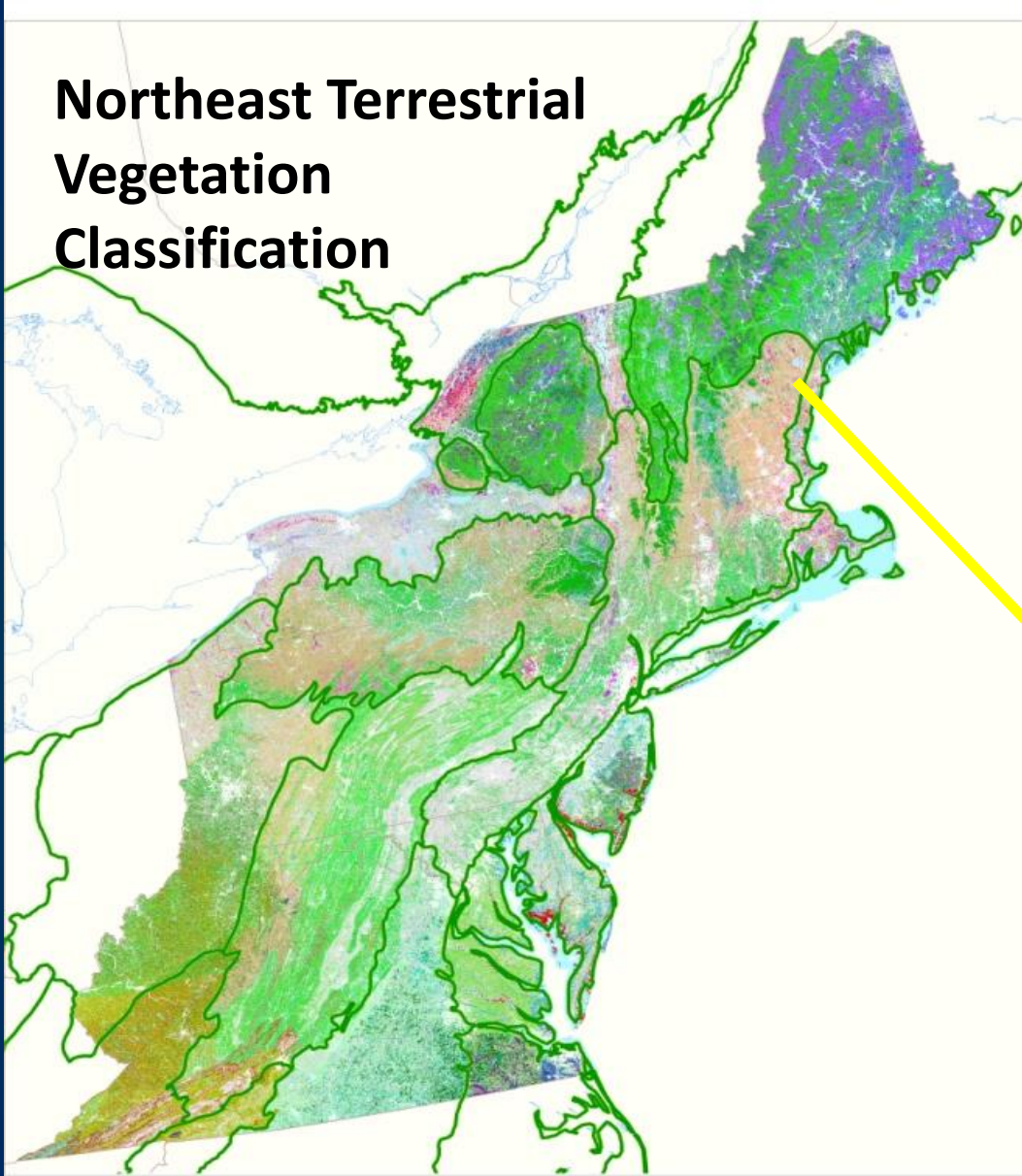
The Nature Conservancy  
Protecting nature. Preserving life.

## Northeast Habitat Guides: A Companion to the Terrestrial and Aquatic Habitat Maps

The Nature Conservancy, Eastern Conservation Science



**Northeast Terrestrial  
Vegetation  
Classification**



**Formation (16)  
Macrogroup (29)  
Ecological System (73)**

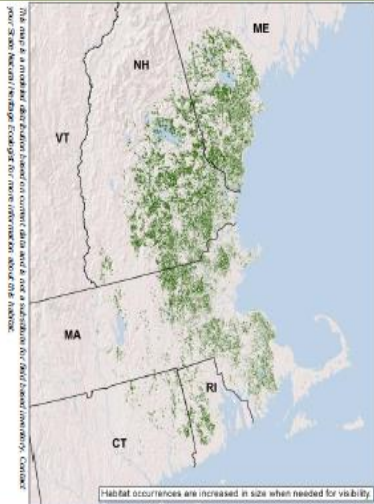
**“Northeastern Coastal  
and Interior Pine Oak  
Forest”**



# Northeastern Coastal and Interior Pine-Oak Forest



## Macrogroup: Northern Hardwood & Conifer



© Nature Conservancy

### Description:

A mixed forest dominated by white pine, red oak, and hemlock in varying proportions. Red maple and white and black oak are common associates, and northern hardwoods like white ash and American beech can appear as minor components. This forest of low to moderate moisture is usually closed canopy and can be heavily coniferous, with some nearly pure stands of white pine and red maple; hemlock is often more abundant in moister settings. This system type occurs over broad areas, but most of it is in early to mid-successional stages and heavily fragmented. It may well be that it is more widespread and abundant as a result of human occupation of and changes to the New England landscape.

### Ecological Setting and Natural Processes:

Usually occurs on flat to rolling glacial landscapes on nutrient-poor, sandy substrates, and is often found near water or wetlands. Upper elevation limit is about 1000' to 1200' (305-365m) in central Massachusetts and southern New Hampshire, but it is usually considerably lower.

### Similar Habitat Types:

Often grades upslope to Appalachian (Hemlock-)Northern Hardwood, which has a stronger hardwood component. To the north, grades into Laurentian-Acadian Pine-Hemlock-Hardwood Forest, but it is not a Laurentian-Acadian system (from which white and black oak are essentially absent). Laurentian-Acadian Northern (Pine-)Oak Forests are cooler and drier, and feature red pine.

### Crosswalk to State Wildlife Action Plans:

### State Distribution: CT, MA, ME, NH, RI

Total Habitat Acreage: 1,538,080

Percent Conserved: 15.8%

| State | Habitat % | State Acreage | GAP 1&2 (acres) | GAP 3 (acres) | Unsecured (acres) |
|-------|-----------|---------------|-----------------|---------------|-------------------|
| NH    | 43%       | 654,780       | 12,748          | 89,778        | 552,254           |
| MA    | 26%       | 403,139       | 9,054           | 81,076        | 313,009           |
| ME    | 25%       | 391,837       | 5,423           | 19,849        | 366,566           |
| RI    | 3%        | 50,081        | 2,770           | 15,070        | 32,241            |
| CT    | 2%        | 38,443        | 835             | 7,136         | 30,471            |

### Crosswalk to State Name Examples:

White Pine-Oak Forest (MA), Oak-Hickory Forest (ME), Mixed Oak/White Pine Forest (RI)

### Places to Visit this Habitat:

Pachaug State Forest | CT  
 Harold Parker State Forest | MA  
 Sebago Lake State Park | ME  
 Great Bay National Wildlife Refuge | NH  
 Arcadia Management Area | RI

### Associated Species: Appendix lists scientific names

**BIRDS:** black-and-white warbler, blue-headed vireo, brown creeper, eastern wood-pewee, hermit thrush, ovenbird, pine warbler, scarlet tanager, veery, wood thrush

**MAMMALS:** black bear, gray fox, gray squirrel, northern flying squirrel, southern flying squirrel, white-footed mouse

**HERPILES:** jefferson salamander, marbled salamander, black rat snake, eastern hognose snake, eastern worm snake, northern black racer, northern copperhead, northern redbelly snake

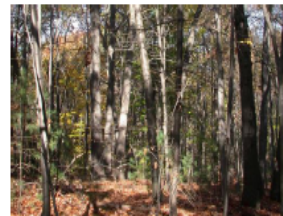
**PLANTS:** Sundial Lupine (*Lupinus perennis*), Large Whorled Pogonia (*Isoetes verticillata*), Northern Blazingstar (*Liatris scariosa* var. *novae-angliae*), Philadelphia Panicgrass (*Panicum philadelphicum*), Sassafras (*Sassafras albidum*), Swamp Saxifrage (*Saxifraga pensylvanica*), Sand Violet (*Viola adunca*), Pale Green Orchid (*Platanthera flava* var. *herbiola*), Redtop Panicgrass (*Panicum rigidulum* var. *pubescens*)

### Species of Concern (G1-G4): Appendix lists scientific names

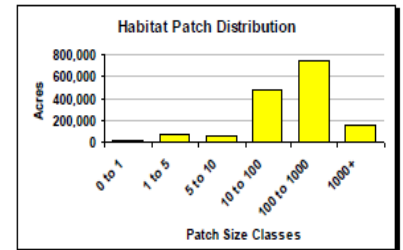
**BIRDS:** eastern whip-poor-will

**INSECTS:** red-winged swallow, ringed boghaunter

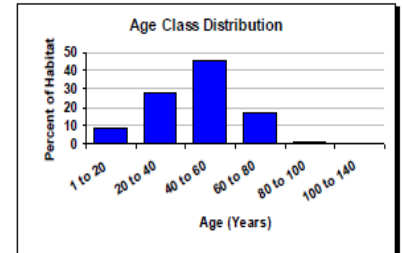
**PLANTS:** small whorled pogonia (*Isoetes medeoloides*), climbing fern (*Lygodium palmatum*), plymouth gentian (*Sabatia kennedyana*)



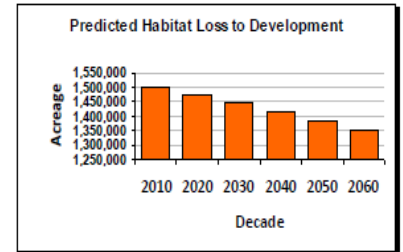
© Patrick Green (Massachusetts Division of Fisheries & Wildlife)



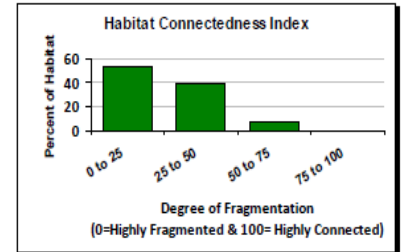
The average patch size for this habitat is 10 acres and the largest single patch is 2,638 acres. This chart shows the proportion of the habitat that is in each patch-size class.



This chart shows the average age of trees associated with this habitat based on forest inventory data. For non-forested systems or small habitats the average age is influenced by the surroundings.



This chart shows the predicted loss of habitat over the next five decades (145,435 acres) if loss continues at the same rate as 1990-2000. The average rate of loss is 2,929 acres per year.



This metric measures how connected or fragmented the land directly surrounding (18 square miles) the habitat is; this chart shows the proportion of the habitat in each

# Aquatic Habitat Types (10)

## *Rivers and Streams*

- Large Rivers
- Medium Rivers
- Small Rivers
- Headwater Streams
- Ephemeral Streams



## *Ponds & Lakes*

- Dystrophic
- Eutrophic
- Mesotrophic
- Oligotrophic
- Vernal Pool








# Linking SGCN to Habitats

SpeciesStatus\_fe : Database (Access 2007 - 2010) - Microsoft Access

File Home

frmMain

## MAINE'S FISHERIES AND WILDLIFE ACTION PLAN

SEARCH DATABASE

CREATE REPORTS

OPEN DATA ENTRY FORM

EXIT DATABASE

SpeciesStatus\_fe : Database (Access 2007 - 2010) - Microsoft Access

File Home

frmSpeciesStatus

### SPECIES: *Myotis leibii* (Eastern Small-footed Myotis)

Population: **No population specified** Species ID: 126 Status ID: 75

Comments: Northeast endemic with few records from Maine and considered rare throughout its range.

2005 CWCS Priority: 2 2015 SGCN Priority: 1

State Status: SC Federal Status: Tracked

Habitat Threats Listing History Recommendations

#### 21 Key Habitats (2005 CWSC)

| Habitat Type | CWCS Habitat                            | HabitatID |
|--------------|---|-----------|
| Primary      | Cliff Face and Rocky Outcrops (includin | UR        |
| Secondary    | Caves and Mines                         | UCM       |
| Secondary    | Deciduous and Mixed Forest              | UD        |

Record: 1 of 3 No Filter Search

#### Northeast Terrestrial Habitat Classification System (NETHCS) - 2015 Wildlife Action Plan

Macrogroup Name: [Dropdown]

Habitat System: \*\*double click row to view definition\*\* [SHOW ALL HABITAT SYSTEMS](#)

| ID  | 2015 Habitat System Name           | 2005 ID |
|-----|------------------------------------|---------|
| 47  | Acadian-North Atlantic Rocky Coast | CC      |
| 58  | Laurentian-Acadian Lakeshore Beach | CC      |
| 48  | North Atlantic Cobble Shore        | CC      |
| 106 | Estuaries and Bays                 | CE      |
| 105 | Marine Open Water                  | CO      |

Associate selected habitat systems with species

#### HABITATS ASSOCIATED WITH SPECIES

2015 Habitat Review Completed \*\*double click Habitat Notes field to expand\*\*

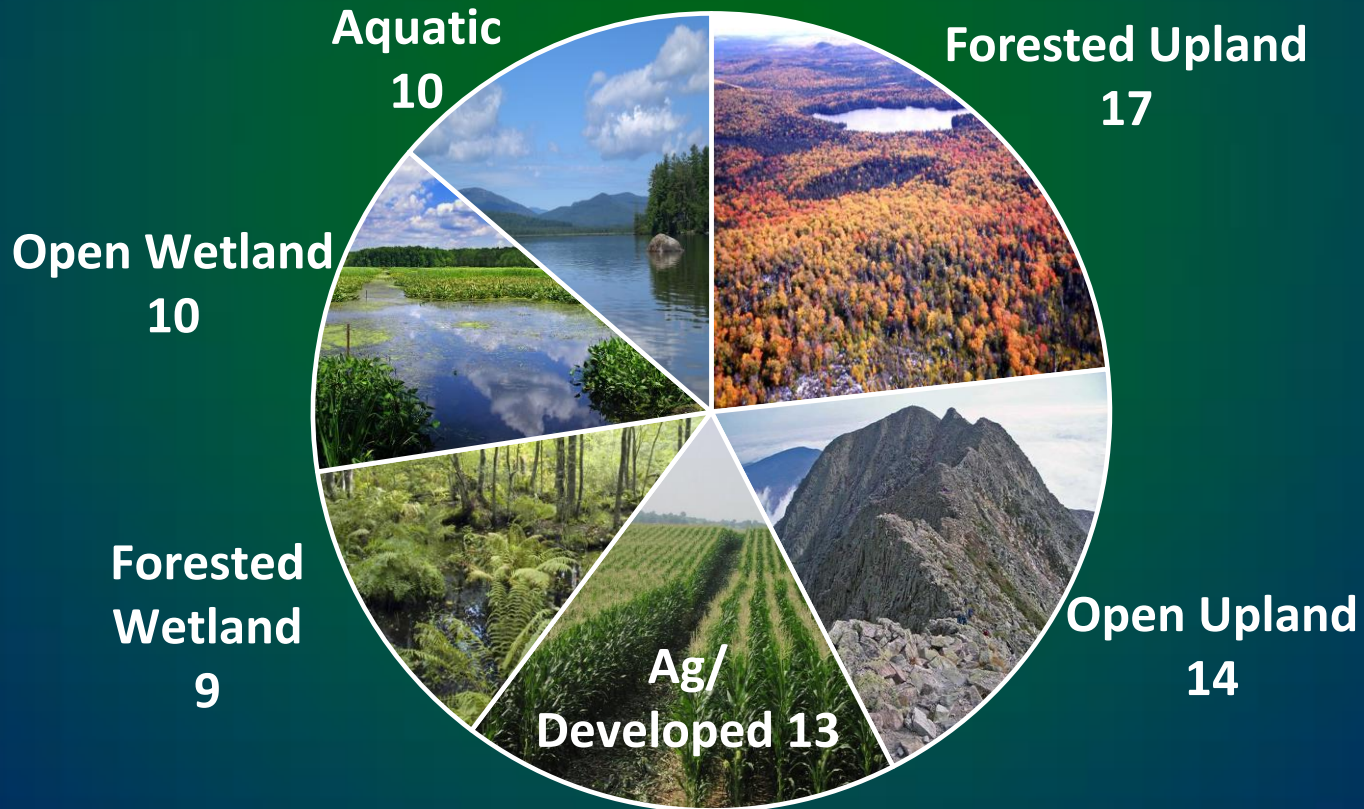
| MacrogroupName         | HabitatSystemName                                 | HabNotes                    | SpHabID | 2005 Hab |
|------------------------|---|-----------------------------|---------|----------|
| Boreal Upland Forest   | Acadian Low-Elevation Spruce-Fir Forest and Flats | "secondary habitat" for upl | 2537    | UC       |
| Boreal Upland Forest   | Acadian Sub-Boreal Spruce Barrens                 | "secondary habitat" for upl | 2542    | UC       |
| Cliff and Talus        | Laurentian-Acadian Acidic Cliff and Talus         | "primary habitat" for ledge | 22      | UR       |
| Cliff and Talus        | Laurentian-Acadian Calcareous Cliff and Talus     | "secondary habitat" for led | 21      | UR       |
| Extractive             | Subsurface Mines & Caves                          | "primary habitat" for hiben | 2562    | NA       |
| Outcrop / Summit Scrub | Laurentian-Acadian Calcareous Rocky Outcrop       | "secondary habitat" for led | 20      | UR       |

Record: 1 of 14 No Filter Search

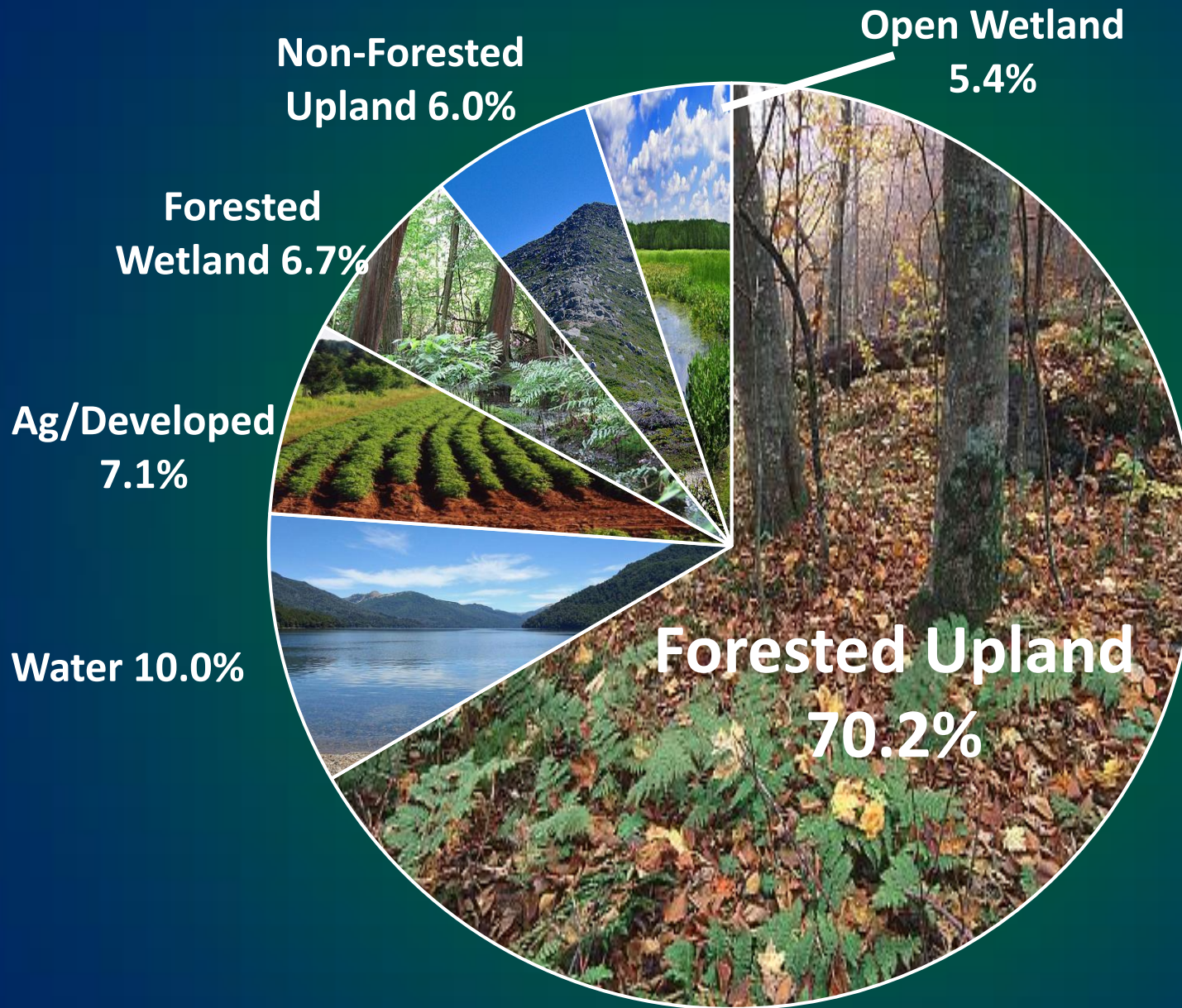
# Revisions

- ✓ Corrected differences between GIS coverage and habitat list provided by USFWS

## 73 'Ecological Systems'







# Revisions to Species/Habitat Associations

✓ Distinguished 'primary' habitats from 'secondary'

frmSpeciesStatus

**SPECIES: *Ambystoma laterale* (Blue-spotted Salamander)** MAIN MENU

Population: **Diploid** Species ID: 139 Status ID: 131 SEARCH MENU

Comments: Further information needed on hybrid genotype and status/distribution of pure laterale forms; the latter are rare in New England and NY, becoming more common to the North; true rarity of laterale masked by cryptic polyploidy complex. Even polyploid hybrids

2005 CWCS Priority: 2 2015 SGCN Priority: 2

State Status: SC Federal Status: Tracked

Habitat | Threats | Listing History | Recommendations

**21 Key Habitats (2005 CWSC)** **Northeast Terrestrial Habitat Classification System (NETHCS) - 2015 Wildlife Action Plan**

| Habitat type | CWCS Habitat                         | HabitatID |
|--------------|--------------------------------------|-----------|
| Primary      | Shrub-scrub Wetland                  | WS        |
| Secondary    | Coniferous Forest                    | UC        |
| Secondary    | Deciduous and Mixed Forest           | UD        |
| Secondary    | Shrub / Early Successional and Regen | US        |
| Secondary    | Forested Wetland                     | WF        |

Record: 1 of 5

Macrogroup Name: Note: If you are assigning habitat systems to SGCN 3 species, do not assign SGCN 3 Only Associate selected Macrogroup with species

Habitat System \*\*double click row to view definition

| ID  | 2015 Habitat System Name           | 2005 ID |
|-----|------------------------------------|---------|
| 47  | Acadian-North Atlantic Rocky Coast | CC      |
| 58  | Laurentian-Acadian Lakeshore Beach | CC      |
| 48  | North Atlantic Cobble Shore        | CC      |
| 106 | Estuaries and Bays                 | CE      |
| 105 | Marine Open Water                  | CO      |

Record: 1 of 5

**HABITATS ASSOCIATED WITH SPECIES**  2015 Habitat Review Completed \* Double click Habitat Notes field to expand\*\*

| MacrogroupName                | HabitatSystemName  | Primary                             | Habit Notes         | SpHabID | 2005 Hab |
|-------------------------------|--|-------------------------------------|---------------------|---------|----------|
| Northern Peatland & Fens      | Northern Peatland Macrogroup - Unknown Habitat System      | <input type="checkbox"/>            |                     | 1661    | NA       |
| Lakes and Ponds               | Oligotrophic   | <input type="checkbox"/>            | Only fishless ponds | 1656    | WL       |
| Ruderal Shrubland & Grassland | Powerline Right-of-Way                                     | <input type="checkbox"/>            |                     | 1663    | US       |
| Plantation and Ruderal Forest | Ruderal Forest - Northern and Central Hardwood and Conifer | <input type="checkbox"/>            |                     | 81      | US       |
| Lakes and Ponds               | Vernal Pool  | <input checked="" type="checkbox"/> |                     | 2828    | NA       |
| *                             |  | <input checked="" type="checkbox"/> |                     | (New)   |          |

Record: 1 of 25

Record: 1 of 1

# Revisions

- ✓ Defined primary as 'limiting' and 'required' habitat; many but not all species have 'primary' habitat types

*Blue spotted salamander*



*Broad winged hawk*

- ✓ Did not include *riparian* habitats for truly aquatic species (e.g., fish, mussels)



*Brook floater*

- ✓ Included 'urban/suburban' only where species are strongly associated with it



*Chimney swift*

# The Big 4: Habitats with the most SGCN



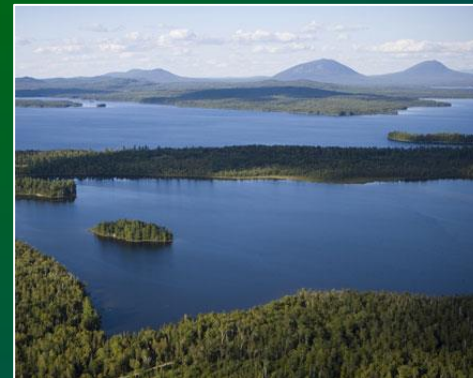
Upland Forest **162** SGCN



FW Open Wetlands **88** SGCN



Grasslands/Shrublands  
**82** SGCN



Aquatic **62** SGCN

# SGCN per 10,000 acres



# Considerations for Habitat Prioritization

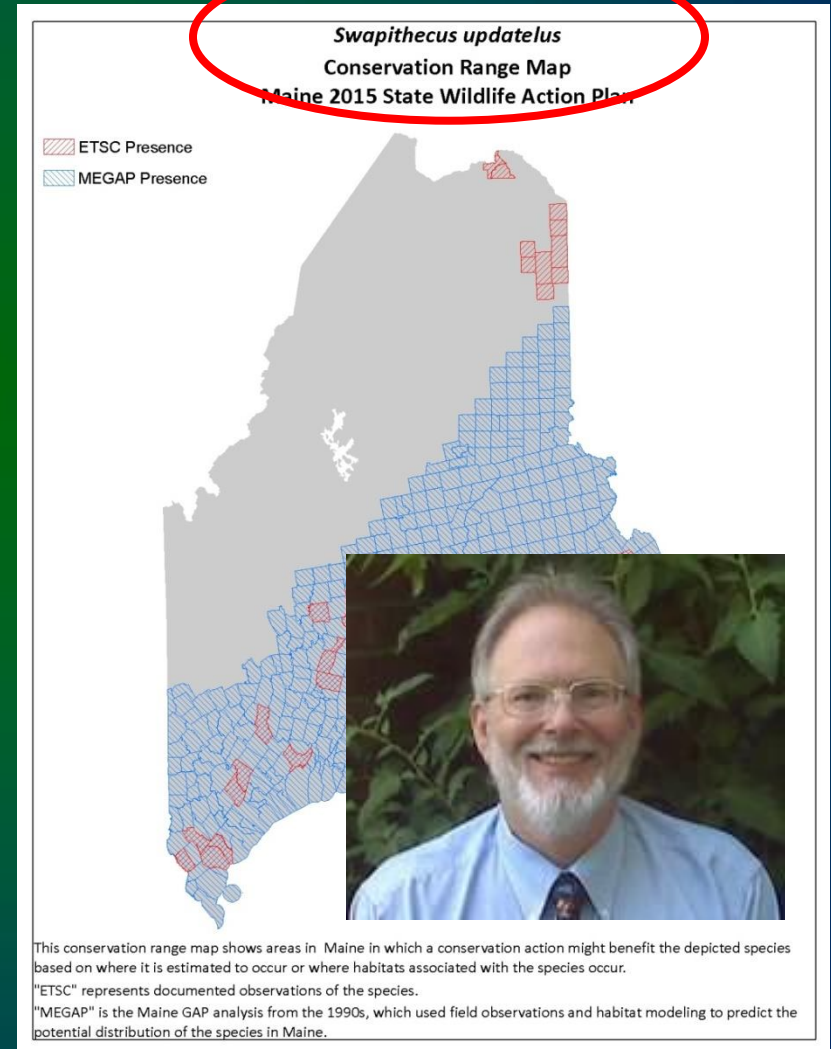
- Habitats with most SGCN (weighted by priority)
- 'Primary' habitats with most SGCN
- Habitats that are scarce in Maine
- Habitats with most immediate stressors
- Habitats lacking in conserved lands
- Priorities for management (vs. acquisition)
- Others?

# "Species Conservation Range" (SCR) Maps for the 2015 SWAP Update

Maps created via GIS process for all  
SGCN for which sufficient  
information exists

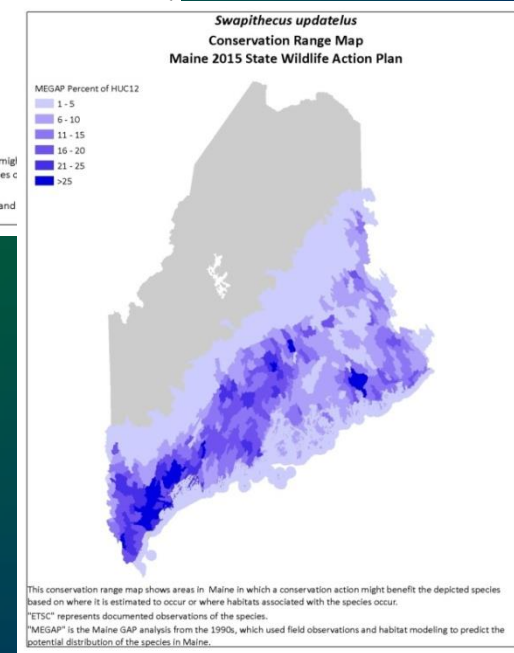
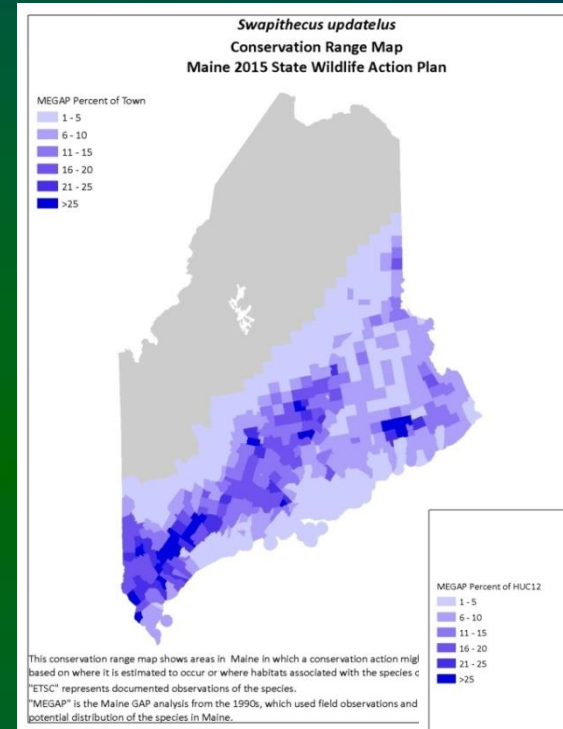
## Spatial Inputs

- Observations from ETSC
- Maine GAP predicted distributions
- Distributions of NETHC habitats associated with SGCN
- Other data (eBIRD, MARAP, etc.)
- Best Professional Judgment



# Species Conservation Range Maps: Process

- Towns and sub-watersheds (HUC 12); 'scalable' to larger areas
- % of Town/Watershed overlapping with each input data layer
- PDF maps linked to database
- Species experts to review maps
- Serves as baseline for future comparison





# Take Home Messages

- **The greatest number of SCGN are associated with upland forests**
- **On an acre by acre basis, important habitats are waters & wetlands, grasslands and shrublands, alpine areas, pine barrens, and coastal features**
- **Our SGCN lists and spatial data allow us to assess habitat priorities in a number of ways**