

# Northeast Amphibian and Reptile Species of Regional Responsibility and Conservation Concern



A Northeast Partners in Amphibian and Reptile Conservation product.



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## Background

Every state (and the District of Columbia) in the Northeast (Figure 1) completed a Wildlife Action Plan (WAP) during the Fall of 2005, mandated by the U.S. Fish and Wildlife Service (USFWS) in order to receive State Wildlife Grants. These WAPs identified 'Species of Greatest Conservation Need (SGCN)' for each state, as well as the greatest threats and highest priority conservation actions. Although states are now poised to implement actions for SGCN within their jurisdiction, there has been limited coordination for species across state lines. Northeast Partners in Amphibian and Reptile Conservation (NEPARC, [www.pwrc.usgs.gov/neparc](http://www.pwrc.usgs.gov/neparc)) is a regional working group comprised of members with expertise in reptiles and amphibians and, as such, is an appropriate group to discuss threats at the Northeast regional level and identify coordinated conservation actions. A WAP working group was developed at the 2006 NEPARC meeting in Connecticut; this group met for a second time at the 2007 NEPARC meeting in Virginia.



**Figure 1: Northeast states**

The WAP working group developed two initial goals:

- 1) Develop a complete list of species of regional conservation concern using state WAPs.
- 2) Develop a list of species of regional responsibility in the Northeast.

### Justification for Goals:

Goal 1 – Species that are of high regional conservation concern should be targets for conservation and monitoring efforts of NEPARC. Efforts to identify regional species of conservation concern have been completed in the past (primarily Therres 1999). However, Wildlife Action Plans provide the most updated information available.

Goal 2 – Wildlife Action Plans are intended to identify threats and conservation actions for SGCN, but also to 'keep common species common.' It is important to consider species for which the Northeast provides significant habitat for the global population when developing conservation initiatives and monitoring success in the Northeast. These species may be listed as SGCN in part of their range, but common in other locations. For example the northern black racer is listed as a SGCN in only 7 of the 14 northeastern states and approximately 50% of its range is within the northeast region.

The WAP working group conducted an analysis of northeastern amphibians and reptile species to identify those species with geographic ranges falling predominantly within the Northeast, and that are not already receiving conservation attention. Roughly 50 percent or more of a species range had to fall within the Northeast to be considered for inclusion in this list; the list includes subspecies.

### Methods

- 1) All native reptiles and amphibians of the northeastern United States were compiled in a spreadsheet. We used species names (common and scientific names) from the Society for the Study of Amphibians and Reptile's 2008 species list (Crother et al. 2008). Sub-species were included in the Northeast list.

- 2) Species' federal status and global rank identified in the *Habitat Management Guidelines for Amphibians and Reptiles of the Northeastern United States* (Mitchell et al. 2006) were added to the spreadsheet.
- 3) The number of states in which each species occurs and the number of states that listed the species in their Wildlife Action Plan were added to the chart. This information was compiled by Alison Whitlock (USFWS) from all of the State Wildlife Action Plans. An additional column was added to calculate the percentage of states that identified the species in their WAP relative to the number of states where the species was present. This percentage was used as our index for Regional Conservation Concern.
- 4) We calculated regional responsibility by identifying the percent of the species' overall range that occurs in the Northeast. To facilitate this calculation, we did not determine precise range estimates, but used a cut-off of 50%. Because we were using an 'eyeball' estimation, we included a 'close to 50%' category. 'Close to 50%' was typically between 45% and 50% within the Northeast, but in a few cases it was as low as 40%. Although these estimates are not precise, the relative grouping of species (those in which the Northeast is greater than 50% of their range versus those in which the Northeast is less than 50%) provides insight into the species regional responsibility in the Northeast. We calculated whether the species' Northeast range was: 1) > 50% (or close) of the species' North American range (including Canada), and 2) > 50% of the United States (excluding Canada). Conant and Collins' *Reptiles and Amphibians - Eastern/Central North America Field Guide* (1998) was the primary source for estimating species ranges. In some instances, range maps in other guide books were reviewed as well. For example, Petranka (1998) and Ernst and Ernst (2003) were used as additional sources of information for salamanders and snakes, respectively. Because we used sub-species in our analysis, Conant and Collins (1998) was often the only source appropriate. In addition, we identified whether a species had a limited distribution and/or disjunct population in the Northeast. Species/sub-species where the North American range of the species is equal to or smaller than the size of the state of Virginia were considered to be of limited distribution (LD on the tables). Disjunct Populations (DP) were those species/sub-species populations in the Northeast separated from the core section of the species/sub-species range. Detailed information for Steps 1-4 can be viewed in Appendix A.
- 5) A matrix was created using Species of Regional Conservation Concern and Species of Regional Responsibility. The percentage of states that listed a species in their WAP relative to the states where the species occurs was used as an index for Species of Regional Conservation Concern Status. Species that occurred in less than 4 states in the Northeast were identified and placed into separate categories. The 50% (including those that were 'close') threshold was used as an index for regional responsibility. Each species was placed in a cell in the matrix and descriptions of the cells were developed to aid in interpreting the results (see following Tables).

#### Potential Uses of the Matrix

- 1) Species of high Regional Conservation Concern should be targets for NEPARC annual conferences, working groups, and regional species groups.
- 2) Species of high Regional Responsibility should be identified and considered as targets for habitat and landscape-based conservation initiatives (e.g., land protection, habitat management, restoration).
- 3) Species of high Regional Responsibility may be appropriate indicators for long-term monitoring, such as distribution and/or changes in abundance due to climate change.
- 4) Species that are of high Regional Conservation Concern **AND** high Regional Responsibility should be among the highest priority species for NEPARC to target conservation efforts (e.g., develop

Regional Species Working Group similar to the Northeast Blanding's Turtle NEPARC working group).

- 5) All species listed in the matrix could be targets for habitat management when using the Northeast Habitat Management Guidelines (HMG), depending on the goals of the landowner.
- 6) Species listed as high Regional Responsibility (including those that occur in less than 4 states) and/or Regional Conservation Concern in the matrix may be good candidates for targets for consideration under the Important Herp Areas NEPARC working group.

**Table 1: Regional Species Matrix Key**

Regional Level of Concern	Species of Regional Responsibility	
	Northeast comprises <50% of US distribution	Northeast comprises >50% of US/Canada Distribution (includes 'close')
Species found in < 4 states in Northeast	Not considered species of priority in Northeast because of their limited distribution in Northeast.	Possible priority for Northeast because of high 'responsibility,' including potential endemism, especially if concern is 'high.'
<25 % of states listed in WAP	Low priority in Northeast (low concern; species range > 50% outside of NE).	Low concern (high 'responsibility' = habitat-based approaches advised.)
≥ 25 % of states listed in WAP	Moderate concern (species range > 50% outside of NE = habitat-based approaches advised.)	Moderate concern (high 'responsibility' = habitat-based approaches advised.)
≥ 50 % of states listed in WAP	High concern (species range > 50% outside of NE = species-specific plans might be warranted.)	High concern, (high 'responsibility' = species-specific plans might be warranted.)
≥ 75 % of states listed in WAP	Severe concern (species range > 50% outside of NE = species-specific plans might be warranted.)	Severe concern (high 'responsibility' = species-specific plans might be warranted.)

† = Species is federally listed as Endangered or Threatened

\* = Listed in Therres 1999 as species of regional conservation concern

\*\* = Listed in Therres 1999 as species in need of federal status assessment

(#) = Number of states where the species occurs

**Table 2: Frogs**

Regional Level of Concern	Species of Regional Responsibility	
	Northeast comprises <50% of US distribution	Northeast comprises >50% of US/Canada Distribution (includes 'close')
Species found in < 4 states in Northeast	Barking Treefrog (3) DP Blanchard's Cricket Frog (1) Boreal Chorus Frog (2) Brimley's Chorus Frog (1) Coastal Plain Cricket Frog (2) Eastern Narrow-mouthed Toad (2) Green Treefrog (3) Little Grass Frog (1) Oak Toad (1) Pine Barrens Treefrog (1) LD/DP Pine Woods Treefrog (1) Southern Chorus Frog (2) Southern Toad (1) Squirrel Treefrog (1) Western Chorus Frog (2)	
<25 % of states listed in WAP	American Bullfrog (14) Eastern American Toad (14) Gray Treefrog (14) Northern Green Frog (14) Pickerel Frog (14) Spring Peeper (13) Upland Chorus Frog (5) Wood Frog (14)	
≥ 25 % of states listed in WAP	Cope's Gray Treefrog (6) Mink Frog (4) Southern Leopard Frog (7)	
≥ 50 % of states listed in WAP	Eastern Cricket Frog (9) Fowler's Toad (13) Northern Leopard Frog (9)*	New Jersey Chorus Frog (5)* LD
≥ 75 % of states listed in WAP	Carpenter Frog (4)* LD Eastern Spadefoot (10)* Mountain Chorus Frog (4)*	

Differences with range calculations:

Mink Frog & Wood Frog Included in Regional Responsibility if Canada Excluded

**Table 3: Salamanders**

Regional Level of Concern	Species of Regional Responsibility	
	Northeast comprises <50% of US distribution	Northeast comprises >50% of US/Canada Distribution (includes 'close')
Species found in < 4 states in Northeast	Atlantic Coast Slimy Salamander (1) LD Big Levels Salamander (1) Black Mountain Salamander (2) LD Black-bellied Salamander (2) LD Blue Ridge Dusky Salamander (1) Blue Ridge Two-lined Salamander (1) LD Cave Salamander (2) Dwarf Waterdog (1) LD Eastern Lesser Siren (1) DP Greater Siren (1) Mabee's Salamander (1) LD Many-lined Salamander (1) LD Midland Mud Salamander (2) Mole Salamander (1) DP Northern Gray-cheeked Salamander (1) Northern Ravine Salamander (1) Pygmy Salamander (1) LD Red-cheeked Salamander (1) LD Shovel-nosed Salamander (1) LD Small-mouthed Salamander (1) Southern Dusky Salamander (1) Southern Ravine Salamander (3) Southern Two-lined Salamander (2) Southern Zigzag Salamander (1) Streamside Salamander (1) LD Three-lined Salamander (1) Two-toed Amphiuma (1) Weller's Salamander (1) LD Yonahlossee Salamander (1) LD	Blue Ridge Red Salamander (1) LD Cheat Mountain Salamander (1)† LD Cow Knob Salamander (2) LD Cumberland Plateau Salamander (2) LD Kentucky Spring Salamander (2) LD Peaks of Otter Salamander (1) LD Shenandoah Mountain Salamander (2) Shenandoah Salamander (1)† LD West Virginia Spring Salamander (1) LD White-spotted Slimy Salamander (2)
<25 % of states listed in WAP	Eastern Red-backed Salamander (14) Red-spotted Newt (13)	Allegheny Mountain Dusky Salamander (7) Northern Dusky Salamander (14) Northern Slimy Salamander (7) Northern Two-lined Salamander (14) Valley and Ridge Salamander (4) LD Wehrle's Salamander (5) LD
≥ 25 % of states listed in WAP	Four-toed Salamander (14) Spotted Salamander (14)	Northern Spring Salamander (12) Seal Salamander (4)
≥ 50 % of states listed in WAP	Common Mudpuppy (8) Marbled Salamander (13)	Long-tailed Salamander (7)* Northern Red Salamander (8)
≥ 75 % of states listed in WAP	Blue-spotted Salamander (7)* Eastern Hellbender (5)** Eastern Mud Salamander (6)* Eastern Tiger Salamander (5)* Green Salamander (4)* LD	Jefferson Salamander (10)*

Differences with range calculations:

Red-Spotted Newt < 50% when Canada included

Eastern Red-backed salamander < 50% when Canada included



**Table 4: Turtles**

Regional Level of Concern	Species of Regional Responsibility	
	Northeast comprises <50% of US distribution	Northeast comprises >50% of US/Canada Distribution (includes 'close')
Species found in < 4 states in Northeast	Coastal Plain Cooter (1) Cumberland Slider (1) Eastern Chicken Turtle (1) DP Eastern River Cooter (2) Midland Smooth Softshell (2) Mississippi Map Turtle (1) Ouachita Map Turtle (1) Red-eared Slider (1) Striped Mud Turtle (1) Striped-necked Musk Turtle (1) Yellow-bellied Slider (1)	
<25 % of states listed in WAP	Eastern Musk Turtle (14) Eastern Snapping Turtle (14) Midland Painted Turtle (6)	Eastern Painted Turtle (14)
≥ 25 % of states listed in WAP	Eastern Mud Turtle (7)	
≥ 50 % of states listed in WAP	Eastern Spiny Softshell (6) Northern Map Turtle (7)	Northern Red-bellied Cooter (8)*† [Only MA pop Federally Listed]
≥ 75 % of states listed in WAP	Atlantic Hawksbill Seaturtle (7)† Blanding's Turtle (5)** DP Eastern Box Turtle (12)* Green Seaturtle (8)† Kemp's Ridley Seaturtle (9)† Leatherback Seaturtle (9)† Loggerhead Seaturtle (10)† Spotted Turtle (14)*	Bog Turtle (8)† DP Northern Diamond-backed Terrapin (8)** Wood Turtle (12)**

Differences with range calculations:

No differences



**Table 5: Snakes**

Regional Level of Concern	Species of Regional Responsibility	
	Northeast comprises <50% of US distribution	Northeast comprises >50% of US/Canada Distribution (includes 'close')
Species found in < 4 states in Northeast	Brown Watersnake (1) Common Rainbow Snake (2) Eastern Black Kingsnake (2) Eastern Cottonmouth (1) Eastern Massasauga (2)** Eastern Mudsnap (1) Glossy Crayfish Snake (1) Kirtland's Snake (1) DP Maritime Gartersnake (1) Mole Kingsnake (2) Northern Pinesnake (3)* DP Northern Ribbonsnake (2) Red-bellied Watersnake (3) Rough Earthsnake (1) Southeastern Crowned Snake (1) Southern Copperhead (1)	Mountain Earthsnake (4)* LD Short-headed Gartersnake (2)
<25 % of states listed in WAP	Common Watersnake (14) Eastern Gartersnake (14) Eastern Milksnake (14) Northern Red-bellied Snake (14) Southern Ring-necked Snake (4)	Northern Brownsnake (14) Northern Ring-necked Snake (14)
≥ 25 % of states listed in WAP	Eastern Kingsnake (7) Eastern Ratsnake (12) Eastern Smooth Earthsnake (7) Eastern Wormsnake (11)	
≥ 50 % of states listed in WAP	Northern Copperhead (10) Northern Rough Greensnake (7) Smooth Greensnake (12)	Northern Black Racer (14)
≥ 75 % of states listed in WAP	Common Ribbonsnake (14)* Eastern Hog-nosed Snake (11)* Northern Scarletsnake (5) Queensnake (8)* Red Cornsnake (5) DP Timber Rattlesnake (10)**	

Differences with range calculations:

Eastern Milksnake 'close' if exclude Canada

Smooth Greensnake 'close' if exclude Canada

**Table 6: Lizards**

Regional Level of Concern	Species of Regional Responsibility	
	Northeast comprises <50% of US distribution	Northeast comprises >50% of US/Canada Distribution (includes 'close')
Species found in < 4 states in Northeast	Eastern Glass Lizard (1) Eastern Six-lined Racerunner (3) Eastern Slender Glass Lizard (1) Southeastern Five-lined Skink (1)	
<25 % of states listed in WAP		
≥ 25 % of states listed in WAP	Common Five-lined Skink (10) Eastern Fence Lizard (8) Little Brown Skink (6)	
≥ 50 % of states listed in WAP	Broad-headed Skink (6)*	
≥ 75 % of states listed in WAP		Northern Coal Skink (5)* LD

Differences with range calculations:

No differences

### Literature Cited

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## Appendix A: Master Chart for NEPARC Species of Northeast Responsibility Analysis

### Frogs & Toads

Common Name	Species	Global Rank	Federal Status	# of NE States Extirpated	# of NE States Occurs	# of NE State WAP Lists (excluding DC)	Proportion (WAP/Occur)	>50% Range in NE US (excluding CA)	>50% Rand in NE US (including CA)	Range
American Bullfrog	<i>Lithobates catesbeianus</i>	5			14	1	0.07			
Barking Treefrog	<i>Hyla gratiosa</i>	5			3	3	1.00			DP
Blanchard's Cricket Frog	<i>Acris crepitans blanchardii</i>	5			1	1	1.00			
Boreal Chorus Frog	<i>Pseudacris maculata</i>				2		0.00			
Brimley's Chorus Frog	<i>Pseudacris brimleyi</i>	5			1	0	0.00			
Carpenter Frog	<i>Lithobates virgatipes</i>	5			4	4	1.00			LD
Coastal Plain Cricket Frog	<i>Acris gryllus gryllus</i>	5			2	0	0.00			
Cope's Gray Treefrog	<i>Hyla chrysoscelis</i>	5			6	2	0.33			
Eastern American Toad	<i>Anaxyrus americanus americanus</i>	5			14	1	0.07			
Eastern Cricket Frog	<i>Acris crepitans crepitans</i>	5			9	5	0.56			
Eastern Narrow-mouthed Toad	<i>Gastrophryne carolinensis</i>	5			2	1	0.50			
Eastern Spadefoot	<i>Scaphiopus holbrookii</i>	5			10	9	0.90			
Fowler's Toad	<i>Anaxyrus fowleri</i>	5			13	8	0.62			
Gray Treefrog	<i>Hyla versicolor</i>	5			14	1	0.07			
Green Treefrog	<i>Hyla cinerea</i>	5			3	0	0.00			
Little Grass Frog	<i>Pseudacris ocularis</i>	5			1	0	0.00			
Mink Frog	<i>Lithobates septentrionalis</i>	5			4	1	0.25	X (close)		
Mountain Chorus Frog	<i>Pseudacris brachyphona</i>	5			4	3	0.75			
New Jersey Chorus Frog	<i>Pseudacris kalmi</i>	5			5	3	0.60	X	X	LD
Northern Green Frog	<i>Lithobates clamitans melanota</i>	5			14	0	0.00			
Northern Leopard Frog	<i>Lithobates pipiens</i>	5			9	6	0.67			
Oak Toad	<i>Anaxyrus quercicus</i>	5			1	1	1.00			
Pickerel Frog	<i>Lithobates palustris</i>	5			14	1	0.07			

<b>Pine Barrens Treefrog</b>	<i>Hyla andersonii</i>	4			1	1	1.00			LD/DP
<b>Pine Woods Treefrog</b>	<i>Hyla femoralis</i>	5			1	0	0.00			
<b>Southern Chorus Frog</b>	<i>Pseudacris nigrita</i>	5			2	2	1.00			
<b>Southern Leopard Frog</b>	<i>Lithobates sphenoccephalus utricularius</i>	5			7	2	0.29			
<b>Southern Toad</b>	<i>Anaxyrus terrestris</i>	5			1	0	0.00			
<b>Spring Peeper</b>	<i>Pseudacris crucifer</i>	5			13	0	0.00			
<b>Squirrel Treefrog</b>	<i>Hyla squirella</i>	5			1	0	0.00			
<b>Upland Chorus Frog</b>	<i>Pseudacris feriarum</i>	5			5	0	0.00			
<b>Western Chorus Frog</b>	<i>Pseudacris triseriata</i>	5			2	3	1.50			
<b>Wood Frog</b>	<i>Lithobates sylvaticus</i>	5			14	3	0.21	X (close)		

## Salamanders

Common Name	Species	Global Rank	Federal Status	# of NE States Extirpated	# of NE States Occurs	# of NE State WAP Lists (excluding DC)	Proportion (WAP/Occur)	>50% Range in NE US (excluding CA)	>50% Rand in NE US (including CA)	Range
Allegheny Mountain Dusky Salamander	<i>Desmognathus ochrophaeus</i>	5			7	1	0.14	X	X	
Atlantic Coast Slimy Salamander	<i>Plethodon chlorobryonis</i>	5			1	0	0.00			LD
Big Levels Salamander	<i>Plethodon sherando</i>	2			1	0	0.00			
Black Mountain Salamander	<i>Desmognathus welteri</i>	4			2	1	0.50			LD
Black-bellied Salamander	<i>Desmognathus quadramaculatus</i>	5			2	1	0.50			LD
Blue Ridge Dusky Salamander	<i>Desmognathus orestes</i>	4			1	1	1.00			
Blue Ridge Red Salamander	<i>Pseudotriton ruber nitidus</i>	5			1	0	0.00	X (Close)	X (Close)	LD
Blue Ridge Two-lined Salamander	<i>Eurycea wilderae</i>	5			1	1	1.00			LD
Blue-spotted Salamander	<i>Ambystoma laterale</i>	5			7	7	1.00			
Cave Salamander	<i>Eurycea lucifuga</i>	5			2	1	0.50			
Cheat Mountain Salamander	<i>Plethodon nettingi</i>	2	T		1	1	1.00	X	X	LD
Common Mudpuppy	<i>Necturus maculosus maculosus</i>	5		1	8	4	0.50			
Cow Knob Salamander	<i>Plethodon punctatus</i>	3			2	2	1.00	X	X	LD
Cumberland Plateau Salamander	<i>Plethodon kentucki</i>	4			2	1	0.50	X (Close)	X (Close)	LD
Dwarf Waterdog	<i>Necturus punctatus</i>	4			1	1	1.00			LD
Eastern Hellbender	<i>Cryptobranchus alleganiensis alleganiensis</i>	3			5	5	1.00			
Eastern Lesser Siren	<i>Siren intermedia intermedia</i>	5			1	1	1.00			DP
Eastern Mud Salamander	<i>Pseudotriton montanus montanus</i>	5			6	5	0.83			
Eastern Red-backed Salamander	<i>Plethodon cinereus</i>	5			14	1	0.07			
Eastern Tiger Salamander	<i>Ambystoma tigrinum</i>	5			5	5	1.00			
Four-toed Salamander	<i>Hemidactylum scutatum</i>	5			14	6	0.43	X (Close)		

<b>Greater Siren</b>	<i>Siren lacertina</i>	5		1	1	1	1.00			
<b>Green Salamander</b>	<i>Aneides aeneus</i>	3			4	4	1.00			LD
<b>Jefferson Salamander</b>	<i>Ambystoma jeffersonianum</i>	5			10	10	1.00	X	X (close)	
<b>Kentucky Spring Salamander</b>	<i>Gyrinophilus porphyriticus duryi</i>	5			2	0	0.00	X (Close)	X (Close)	LD
<b>Long-tailed Salamander</b>	<i>Eurycea longicauda longicauda</i>	5			7	4	0.57	X (Close)	X (Close)	
<b>Mabee's Salamander</b>	<i>Ambystoma mabeei</i>	4			1	1	1.00			LD
<b>Many-lined Salamander</b>	<i>Stereochilus marginatus</i>	5			1	1	1.00			LD
<b>Marbled Salamander</b>	<i>Ambystoma opacum</i>	5			13	8	0.62			
<b>Midland Mud Salamander</b>	<i>Pseudotriton montanus diastictus</i>	5			2	1	0.50			
<b>Mole Salamander</b>	<i>Ambystoma talpoideum</i>	5			1	1	1.00			DP
<b>Northern Dusky Salamander</b>	<i>Desmognathus fuscus</i>	5			14	3	0.21	X	X	
<b>Northern Gray-cheeked Salamander</b>	<i>Plethodon montanus</i>	3			1	0	0.00			
<b>Northern Ravine Salamander</b>	<i>Plethodon electromorphus</i>	5			1	0	0.00			
<b>Northern Red Salamander</b>	<i>Pseudotriton ruber ruber</i>	5			8	4	0.50	X (Close)	X (Close)	
<b>Northern Slimy Salamander</b>	<i>Plethodon glutinosus</i>	5			7	1	0.14	X (Close)	X (Close)	
<b>Northern Spring Salamander</b>	<i>Gyrinophilus porphyriticus porphyriticus</i>	5			12	4	0.33	X	X	
<b>Northern Two-lined Salamander</b>	<i>Eurycea bislineata</i>	5			14	1	0.07	X	X (close)	
<b>Peaks of Otter Salamander</b>	<i>Plethodon hubrichti</i>	2			1	1	1.00	X	X	LD
<b>Pygmy Salamander</b>	<i>Desmognathus wrighti</i>	3			1	1	1.00			LD
<b>Red-cheeked Salamander</b>	<i>Plethodon jordani</i>	5			1	0	0.00			LD
<b>Red-spotted Newt</b>	<i>Notophthalmus viridescens viridescens</i>	5			13	3	0.23			
<b>Seal Salamander</b>	<i>Desmognathus monticola</i>	5			4	1	0.25	X (Close)	X (Close)	
<b>Shenandoah Mountain Salamander</b>	<i>Plethodon virginia</i>	2,3			2	2	1.00	X	X	
<b>Shenandoah Salamander</b>	<i>Plethodon shenandoah</i>	1	E		1	1	1.00	X	X	LD
<b>Shovel-nosed Salamander</b>	<i>Desmognathus marmoratus</i>	4			1	1	1.00			LD
<b>Small-mouthed Salamander</b>	<i>Ambystoma texanum</i>	5			1	1	1.00			
<b>Southern Dusky Salamander</b>	<i>Desmognathus auriculatus</i>	5			1	0	0.00			
<b>Southern Ravine Salamander</b>	<i>Plethodon richmondi</i>	5			3	0	0.00			
<b>Southern Two-lined Salamander</b>	<i>Eurycea cirrigera</i>	5			2	0	0.00			

<b>Southern Zigzag Salamander</b>	<i>Plethodon ventralis</i>	4			1	1	1.00			
<b>Spotted Salamander</b>	<i>Ambystoma maculatum</i>	5			14	5	0.36			
<b>Streamside Salamander</b>	<i>Ambystoma barbouri</i>	4			1	1	1.00			LD
<b>Three-lined Salamander</b>	<i>Eurycea guttolineata</i>	5			1	0	0.00			
<b>Two-toed Amphiuma</b>	<i>Amphiuma means</i>	5			1	0	0.00			
<b>Valley and Ridge Salamander</b>	<i>Plethodon hoffmani</i>	5			4	0	0.00	X	X	LD
<b>Wehrle's Salamander</b>	<i>Plethodon wehrlei</i>	4			5	1	0.20	X	X	LD
<b>Weller's Salamander</b>	<i>Plethodon welleri</i>	3			1	1	1.00			LD
<b>West Virginia Spring Salamander</b>	<i>Gyrinophilus subterraneus</i>	1			1	1	1.00	X	X	LD
<b>White-spotted Slimy Salamander</b>	<i>Plethodon cylindraceus</i>	5			2	0	0.00	X (Close)	X (Close)	
<b>Yonahlossee Salamander</b>	<i>Plethodon yonahlossee</i>	4			1	1	1.00			LD



## Turtles

Common Name	Species	Global Rank	Federal Status	# of NE States Extirpated	# of NE States Occurs	# of NE State WAP Lists (excluding DC)	Proportion (WAP/Occur)	>50% Range in NE US (excluding CA)	>50% Rand in NE US (including CA)	Range
Atlantic Hawksbill Sea Turtle	<i>Eretmochelys imbricata imbricata</i>	3	E	1	7	6	0.86			
Blanding's Turtle	<i>Emydoidea blandingii</i>	4			5	5	1.00			DP
Bog Turtle	<i>Glyptemys muhlenbergii</i>	3	T		8	9	1.13	X	X	DP
Coastal Plain Cooter	<i>Pseudemys concinna floridana</i>	5			1	0	0.00			
Cumberland Slider	<i>Trachemys scripta troosti</i>	5			1	1	1.00			
Eastern Box Turtle	<i>Terrapene carolina carolina</i>	5			12	12	1.00			
Eastern Chicken Turtle	<i>Deirochelys reticularia reticularia</i>	5			1	1	1.00			DP
Eastern Mud Turtle	<i>Kinostemon subrubrum subrubrum</i>	5			7	2	0.29			
Eastern Musk Turtle	<i>Sternotherus odoratus</i>	5			14	3	0.21			
Eastern Painted Turtle	<i>Chrysemys picta picta</i>	5			14	1	0.07	X	X	
Eastern River Cooter	<i>Pseudemys concinna concinna</i>	5			2	1	0.50			
Eastern Snapping Turtle	<i>Chelydra serpentina serpentina</i>	5			14	1	0.07			
Eastern Spiny Softshell	<i>Apalone spinifera spinifera</i>	5			6	3	0.50			
Green Sea Turtle	<i>Chelonia mydas</i>	3	T		8	7	0.88			
Kemp's Ridley Sea Turtle	<i>Lepidochelys kempii</i>	1	E		9	8	0.89			
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	2	E		9	8	0.89			
Loggerhead Sea Turtle	<i>Caretta caretta</i>	3	T		10	9	0.90			
Midland Painted Turtle	<i>Chrysemys picta marginata</i>	5			6	0	0.00			
Midland Smooth Softshell	<i>Apalone mutica mutica</i>	5			2	1	0.50			
Mississippi Map Turtle	<i>Graptemys pseudogeographica kohnii</i>	5			1	1	1.00			
Northern Diamond-backed Terrapin	<i>Malaclemys terrapin terrapin</i>	4			8	8	1.00	X	X	
Northern Map Turtle	<i>Graptemys geographica</i>	5			7	5	0.71			
Northern Red-bellied Cooter	<i>Pseudemys rubriventris</i>	5	E		8	6	0.75	X	X	LD
Ouachita Map Turtle	<i>Graptemys ouachitensis ouachitensis</i>	5			1	0	0.00			

<b>Red-eared Slider</b>	<i>Trachemys scripta elegans</i>	5			1	0	0.00			
<b>Spotted Turtle</b>	<i>Clemmys guttata</i>	5			14	14	1.00			
<b>Striped Mud Turtle</b>	<i>Kinosternon baurii</i>	5			1	0	0.00			
<b>Striped-necked Musk Turtle</b>	<i>Sternotherus minor peltifer</i>	5			1	1	1.00			
<b>Wood Turtle</b>	<i>Glyptemys insculpta</i>	4			12	13	1.08	X	X (close)	
<b>Yellow-bellied Slider</b>	<i>Trachemys scripta scripta</i>	5			1	1	1.00			

## Snakes

Common Name	Species	Global Rank	Federal Status	# of NE States Extirpated	# of NE States Occurs	# of NE State WAP Lists (excluding DC)	Proportion (WAP/Occur)	>50% Range in NE US (excluding CA)	>50% Rand in NE US (including CA)	Range
Brown Watersnake	<i>Nerodia taxispilota</i>	5			1	0	0.00			
Common Rainbow Snake	<i>Farancia erytrogramma erytrogramma</i>	5			2	2	1.00			
Common Ribbonsnake	<i>Thamnophis sauritus sauritus</i>	5			14	12	0.86			
Common Watersnake	<i>Nerodia sipedon sipedon</i>	5			14	1	0.07			
Eastern Black Kingsnake	<i>Lampropeltis getula nigra</i>	5			2	1	0.50			
Eastern Cottonmouth	<i>Agkistrodon piscivorus piscivorus</i>	5			1	0	0.00			
Eastern Gartersnake	<i>Thamnophis sirtalis sirtalis</i>	5			14	1	0.07			
Eastern Hog-nosed Snake	<i>Heterodon platirhinos</i>	5			11	11	1.00			
Eastern Kingsnake	<i>Lampropeltis getula getula</i>	5			7	3	0.43			
Eastern Massasauga	<i>Sistrurus catenatus catenatus</i>	3,4			2	2	1.00			
Eastern Milksnake	<i>Lampropetis triangulum triangulum</i>	5			14	1	0.07	X (Close)		
Eastern Mudsnake	<i>Farancia abacura abacura</i>	5			1	1	1.00			
Eastern Ratsnake	<i>Pantherophis alleghaniensis</i>	5			12	4	0.33			
Eastern Smooth Earthsnake	<i>Virginia valeriae valeriae</i>	5			7	3	0.43			
Eastern Wormsnake	<i>Carphophis amoenus amoenus</i>	5			11	4	0.36			
Glossy Crayfish Snake	<i>Regina rigida rigida</i>	5			1	1	1.00			
Kirtland's Snake	<i>Clonophis kirtlandii</i>	2			1	1	1.00			DP
Maritime Gartersnake	<i>Thamnophis sirtalis pallidulus</i>	5			1	0	0.00			
Mole Kingsnake	<i>Lampropeltis calligaster rhombomaculata</i>	5			2	0	0.00			
Mountain Earthsnake	<i>Virginia valeriae pulchra</i>	5			4	4	1.33	X	X	LD
Northern Black Racer	<i>Coluber constrictor constrictor</i>	5			14	7	0.50	X	X	
Northern Brownsnake	<i>Storeria dekayi dekayi</i>	5			14	2	0.14	X	X	
Northern Copperhead	<i>Agkistrodon contortrix mokasen</i>	5			10	6	0.60			

<b>Northern Pinesnake</b>	<i>Pituophis melanoleucus melanoleucus</i>	4		1	3	3	1.00			DP
<b>Northern Red-bellied Snake</b>	<i>Storeria occipitomaculata occipitomaculata</i>	5			14	1	0.07			
<b>Northern Ribbonsnake</b>	<i>Thamnophis sauritus septentrionalis</i>	5			2	0	0.00			
<b>Northern Ring-necked Snake</b>	<i>Diadophis punctatus edwardsii</i>	5			14	1	0.07	X	X (Close)	
<b>Northern Rough Greensnake</b>	<i>Opheodrys aetivus aetivus</i>	5			7	4	0.57			
<b>Northern Scarletsnake</b>	<i>Cemophora coccinea copei</i>	5			5	4	0.80			
<b>Queensnake</b>	<i>Regina septemvittata</i>	5			8	7	0.88			
<b>Red Cornsnake</b>	<i>Pantherophis guttatus</i>	5			5	5	1.00			DP
<b>Red-bellied Watersnake</b>	<i>Nerodia erythrogaster erythrogaster</i>	5			3	2	0.67			
<b>Rough Earthsnake</b>	<i>Virginia striatula</i>	5			1	0	0.00			
<b>Short-headed Gartersnake</b>	<i>Thamnophis brachystoma</i>	4			2	2	1.00	X	X	
<b>Smooth Greensnake</b>	<i>Opheodrys vernalis</i>	5			12	6	0.50	X (Close)		
<b>Southeastern Crowned Snake</b>	<i>Tantilla coronata</i>	5			1	1	1.00			
<b>Southern Copperhead</b>	<i>Agkistrodon contortrix contortrix</i>	5			1	1	1.00			
<b>Southern Ring-necked Snake</b>	<i>Diadophis punctatus punctatus</i>	5			4	0	0.00			
<b>Timber Rattlesnake</b>	<i>Crotalus horridus</i>	4		2	10	12	1.20			

## Lizards

Common Name	Species	Global Rank	Federal Status	# of NE States Extirpated	# of NE States Occurs	# of NE State WAP Lists (excluding DC)	Proportion (WAP/Occur)	>50% Range in NE US (excluding CA)	>50% Rand in NE US (including CA)	Range
Broad-headed Skink	<i>Plestiodon laticeps</i>	5			6	4	0.67			
Common Five-lined Skink	<i>Plestiodon fasciatus</i>	5		1	10	4	0.40			
Eastern Fence Lizard	<i>Sceloporus undulatus</i>	5			8	3	0.38			
Eastern Glass Lizard	<i>Ophisaurus ventralis</i>	5			1	1	1.00			
Eastern Six-lined Racerunner	<i>Aspidoscelis sexlineata sexlineata</i>	5			3	1	0.33			
Eastern Slender Glass Lizard	<i>Ophisaurus attenuatus longicaudus</i>	5			1	1	1.00			
Little Brown Skink	<i>Scincella lateralis</i>	5			6	2	0.33			
Northern Coal Skink	<i>Plestiodon anthracinus anthracinus</i>	5			5	4	0.80	X	X	LD
Southeastern Five-lined Skink	<i>Plestiodon inexpectatus</i>	5			1	0	0.00			