



SOUTHEAST GAP ANALYSIS PROJECT



Species Modeling Report

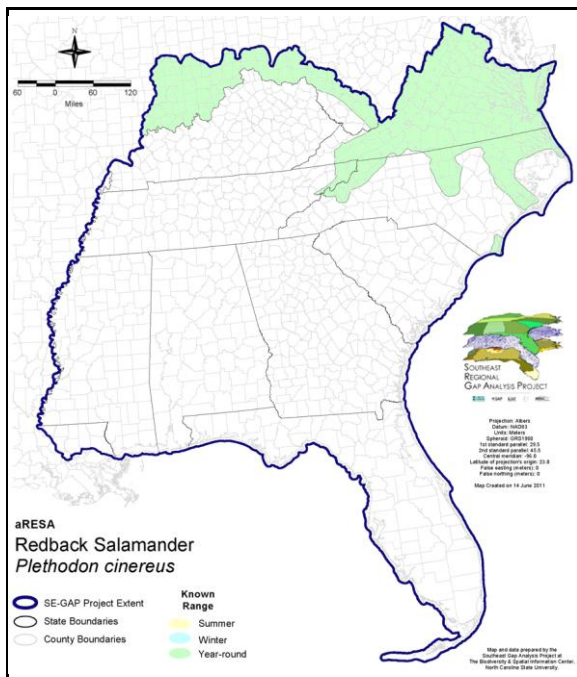
Redback Salamander

Plethodon cinereus

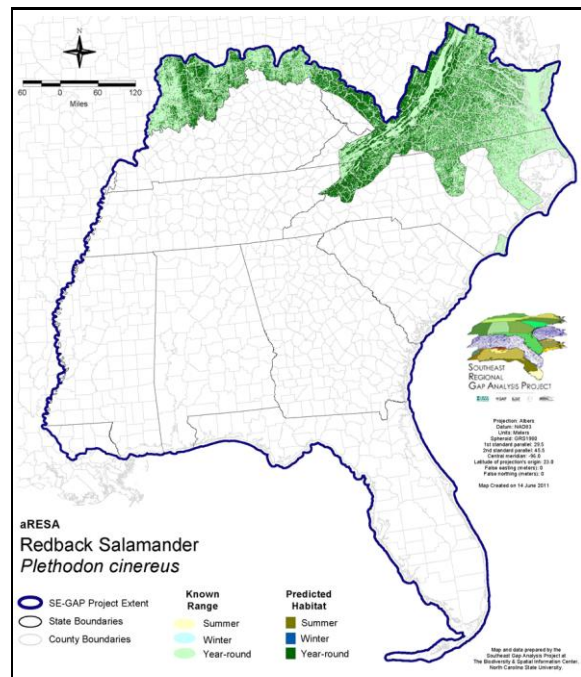
Taxa: Amphibian
 Order: Caudata
 Family: Plethodontidae

SE-GAP Spp Code: **aRESA**
 ITIS Species Code: 173649
 NatureServe Element Code: AAAAD12020

KNOWN RANGE:



PREDICTED HABITAT:



Range Map Link: http://www.basic.ncsu.edu/segap/datazip/maps/SE_Range_aRESA.pdf

Predicted Habitat Map Link: http://www.basic.ncsu.edu/segap/datazip/maps/SE_Dist_aRESA.pdf

GAP Online Tool Link: <http://www.gapservice.ncsu.edu/segap/segap/index2.php?species=aRESA>

Data Download: http://www.basic.ncsu.edu/segap/datazip/region/vert/aRESA_se00.zip

PROTECTION STATUS:

Reported on March 14, 2011

Federal Status: ---

State Status: KY (S), NJ (S), NY (GN), RI (Not Listed), QC (Non suivie)

NS Global Rank: G5

NS State Rank: CT (S5), DC (S5), DE (S5), IL (S4), IN (S4), KY (S3), MA (S5), MD (S5), ME (S5), MI (S5), MN (SNR), NC (S5), NH (S5), NJ (S5), NY (S5), OH (SNR), PA (S5), RI (S5), TN (S4), VA (S5), VT (S5), WI (S4), WV (S5), NB (S5), NS (S5), ON (S5), PE (S4), QC (S5)

SUMMARY OF PREDICTED HABITAT BY MANAGMENT AND GAP PROTECTION STATUS:

	US FWS		US Forest Service		Tenn. Valley Author.		US DOD/ACOE	
	ha	%	ha	%	ha	%	ha	%
Status 1	561.4	< 1	12,078.6	< 1	0.0	0	0.0	0
Status 2	798.8	< 1	180,232.0	3	0.0	0	2,430.5	< 1
Status 3	171.7	< 1	556,137.7	9	96.9	< 1	47,625.5	< 1
Status 4	35.3	< 1	0.0	0	0.0	0	9.4	< 1
Total	1,567.2	< 1	748,448.4	13	96.9	< 1	50,065.4	< 1
	US Dept. of Energy		US Nat. Park Service		NOAA		Other Federal Lands	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	76,059.5	1	0.0	0	0.0	0
Status 2	0.0	0	0.0	0	24.0	< 1	0.0	0
Status 3	0.0	0	34,795.0	< 1	0.0	0	6.0	< 1
Status 4	0.0	0	0.0	0	0.0	0	0.0	0
Total	0.0	0	110,854.4	2	24.0	< 1	6.0	< 1
	Native Am. Reserv.		State Park/Hist. Park		State WMA/Gameland		State Forest	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	0.0	0	0.0	0	0.0	0
Status 2	0.0	0	232.3	< 1	57,278.6	< 1	70.5	< 1
Status 3	0.0	0	25,077.9	< 1	13,731.1	< 1	15,095.3	< 1
Status 4	0.0	0	0.0	0	3,065.4	< 1	0.0	0
Total	0.0	0	25,310.2	< 1	74,075.1	1	15,165.8	< 1
	State Coastal Reserve		ST Nat.Area/Preserve		Other State Lands		Private Cons. Easemt.	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	0.0	0	0.0	0	0.0	0
Status 2	0.0	0	6,809.0	< 1	0.0	0	0.0	0
Status 3	0.0	0	0.0	0	0.0	0	790.3	< 1
Status 4	0.0	0	0.0	0	144.4	< 1	0.0	0
Total	0.0	0	6,809.0	< 1	144.4	< 1	790.3	< 1
	Private Land - No Res.		Water		Overall Total			
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	0.0	0	88,699.5 1			
Status 2	0.0	0	0.0	0	247,875.8 4			
Status 3	0.0	0	0.0	0	693,527.5 21			
Status 4	4,366,981.5	73	92.2	< 1	4,373,358.2 73			
Total	4,366,981.5	73	92.2	< 1	5,403,461.0 100			

GAP Status 1: An area having permanent protection from conversion of natural land cover and a mandated management plan in operation to maintain a natural state within which disturbance events (of natural type, frequency, and intensity) are allowed to proceed without interference or are mimicked through management.

GAP Status 2: An area having permanent protection from conversion of natural land cover and a mandated management plan in operation to maintain a primarily natural state, but which may receive use or management practices that degrade the quality of existing natural communities.

GAP Status 3: An area having permanent protection from conversion of natural land cover for the majority of the area, but subject to extractive uses of either a broad, low-intensity type or localized intense type. It also confers protection to federally listed endangered and threatened species throughout the area.

GAP Status 4: Lack of irrevocable easement or mandate to prevent conversion of natural habitat types to anthropogenic habitat types. Allows for intensive use throughout the tract. Also includes those tracts for which the existence of such restrictions or sufficient information to establish a higher status is unknown.

PREDICTED HABITAT MODEL(S):

Year-round Model:

Habitat Description: The Northern red-backed lives in well-shaded forest settings, with mesic, well-drained soils (Petranka 1998). It uses damp ground cover or microhabitat situations on the floor of conifer, deciduous or mixed forests (Petranka 1998). It avoids seeps, springs or other wet areas (Wilson 1995). It goes underground during freezing or hot, dry weather. In New York, it tended to be absent where soil pH was less than 3.8 and was much more abundant in beech forest than in hemlock forest (Wyman 1988, Wyman and Jancola 1992, Frisbie and Wyman 1992). Adult males exhibit courtship behavior annually in spring and fall and females apparently breed biennially. It lays a clutch of up to about 15 eggs in a cavity in log or stump or under rock or other object on ground, mostly in June or July. The female remains with eggs until hatching in 6-9 weeks (usually August or September) an additional individual (probably male) may occur with attending female (Friet 1995). The larval stage is passed in the egg. The female may attend the hatchlings for up to a few weeks after hatching. Sexual maturity reportedly occurs in about 2-3 years. Stacy Smith, 22April05

Selected Map Units:

Functional Group	Map Unit Name
Forest/Woodland	Allegheny-Cumberland Dry Oak Forest and Woodland
Forest/Woodland	Allegheny-Cumberland Dry Oak Forest and Woodland - Hardwood Modifier
Forest/Woodland	Appalachian Hemlock-Hardwood Forest
Forest/Woodland	Atlantic Coastal Plain Dry and Dry-Mesic Oak Forest
Forest/Woodland	Atlantic Coastal Plain Mesic Hardwood and Mixed Forest
Forest/Woodland	Atlantic Coastal Plain Northern Mixed Oak-Heath Forest
Forest/Woodland	Central and Southern Appalachian Montane Oak Forest
Forest/Woodland	Central and Southern Appalachian Northern Hardwood Forest
Forest/Woodland	Central and Southern Appalachian Spruce-Fir Forest
Forest/Woodland	Central Appalachian Oak and Pine Forest
Forest/Woodland	Northeastern Interior Dry Oak Forest - Mixed Modifier
Forest/Woodland	Northeastern Interior Dry Oak Forest-Hardwood Modifier
Forest/Woodland	South-Central Interior Mesophytic Forest
Forest/Woodland	Southern and Central Appalachian Cove Forest
Forest/Woodland	Southern and Central Appalachian Oak Forest
Forest/Woodland	Southern and Central Appalachian Oak Forest - Xeric
Forest/Woodland	Southern Interior Low Plateau Dry-Mesic Oak Forest
Forest/Woodland	Southern Interior Low Plateau Dry-Mesic Oak Forest - Evergreen Modifier
Forest/Woodland	Southern Piedmont Dry Oak-(Pine) Forest - Hardwood Modifier
Forest/Woodland	Southern Piedmont Dry Oak-(Pine) Forest - Mixed Modifier
Forest/Woodland	Southern Piedmont Dry Oak-Heath Forest - Hardwood Modifier
Forest/Woodland	Southern Piedmont Dry Oak-Heath Forest - Mixed Modifier
Forest/Woodland	Southern Piedmont Dry Oak-Heath Forest - Virginia/Pitch Pine Modifier
Forest/Woodland	Southern Piedmont Mesic Forest
Rock Outcrop	Central Interior Acidic Cliff and Talus
Rock Outcrop	Central Interior Calcareous Cliff and Talus
Rock Outcrop	North-Central Appalachian Circumneutral Cliff and Talus

- CITATIONS:** Behler, J. L., and F. W. King. 1979. The Audubon Society field guide to North American reptiles and amphibians. Alfred A. Knopf, New York. 719 pp.
- DeGraaf, R. M., and D. D. Rudis. 1983. Amphibians and reptiles of New England. Habitats and natural history. Univ. Massachusetts Press. vii + 83 pp.
- Friet, S. C. 1995. *Plethodon cinereus* (Eastern Red-backed Salamander). Nest Behavior. *Herpetol. Rev.* 26(4), 198-199.
- Frisbie, M. P., and R. L. Wyman. 1992. The effect of soil chemistry on sodium balance in the red-backed salamander; a comparison of two forest types. *J. Herpetol.* 26:434-442.
- Green, N. B., and T. K. Pauley. 1987. Amphibians and reptiles in West Virginia. University of Pittsburg Press, Pittsburg, Pennsylvania. xi + 241 pp.

- Martof, B. S., W. M. Palmer, J. R. Bailey, and J. R. Harrison, III. 1980. Amphibians and reptiles of the Carolinas and Virginia. University of North Carolina Press, Chapel Hill, North Carolina. 264 pp.
- Minton, S. A., Jr. 1972. Amphibians and reptiles of Indiana. Indiana Academy Science Monographs 3. v + 346 pp.
- Petranka, J. W. 1998. Salamanders of the United States and Canada. Washington DC: Smithsonian Inst. Press.
- Smith, P. W. 1963. PLETHODON CINEREUS. Cat. Am. Amph. Rep. 5.1-5.3.
- Vogt, R. G. 1981. Natural history of amphibians and reptiles of Wisconsin. Milwaukee Public Museum. 205 pp.
- Wilson, L. A. 1995. The Land Manager's Guide to the amphibians and reptiles of the South. Chapel Hill, NC: The Nature Conservancy.
- Wyman, R. L. 1988. Soil acidity and moisture and the distribution of amphibians in five forests of southcentral New York. Copeia 1988:394-399.
- Wyman, R. L., and J. Jancola. 1992. Degree and scale of terrestrial acidification and amphibian community structure. J. Herpetol. 26:392-401.

For more information:: SE-GAP Analysis Project / BaSIC
127 David Clark Labs
Dept. of Biology, NCSU
Raleigh, NC 27695-7617
(919) 513-2853
www.basic.ncsu.edu/segap

Compiled: 15 September 2011

This data was compiled and/or developed
by the Southeast GAP Analysis Project at
The Biodiversity and Spatial Information
Center, North Carolina State University.