



# SOUTHEAST GAP ANALYSIS PROJECT



## Species Modeling Report

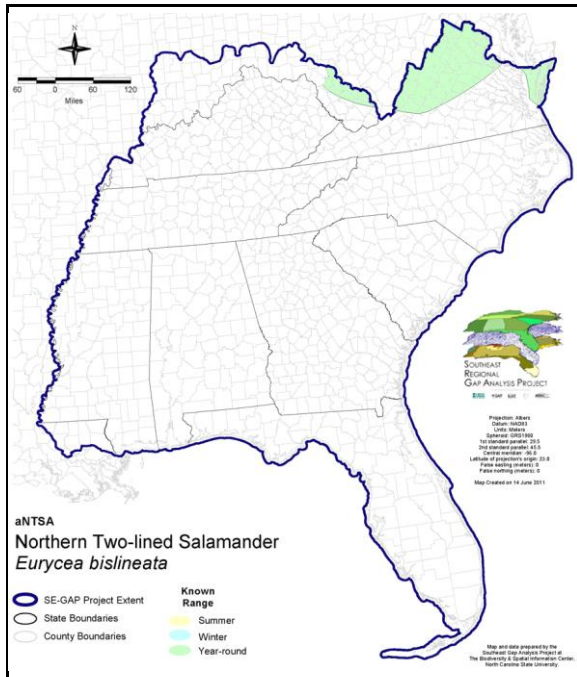
### Northern Two-lined Salamander

*Eurycea bislineata*

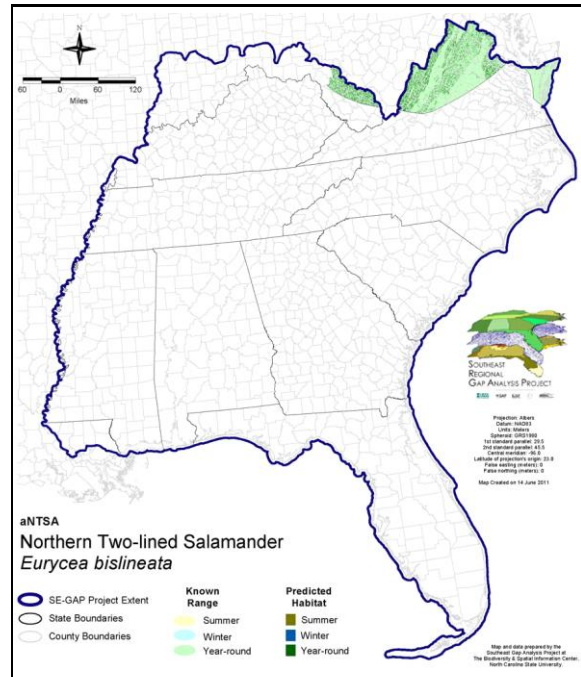
Taxa: Amphibian  
 Order: Caudata  
 Family: Plethodontidae

SE-GAP Spp Code: **aNTSA**  
 ITIS Species Code: 173685  
 NatureServe Element Code: AAAAD05010

#### KNOWN RANGE:



#### PREDICTED HABITAT:



Range Map Link: [http://www.basic.ncsu.edu/segap/datazip/maps/SE\\_Range\\_aNTSA.pdf](http://www.basic.ncsu.edu/segap/datazip/maps/SE_Range_aNTSA.pdf)

Predicted Habitat Map Link: [http://www.basic.ncsu.edu/segap/datazip/maps/SE\\_Dist\\_aNTSA.pdf](http://www.basic.ncsu.edu/segap/datazip/maps/SE_Dist_aNTSA.pdf)

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

Data Download: [http://www.basic.ncsu.edu/segap/datazip/region/vert/aNTSA\\_se00.zip](http://www.basic.ncsu.edu/segap/datazip/region/vert/aNTSA_se00.zip)

#### PROTECTION STATUS:

Reported on March 14, 2011

Federal Status: ---

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

NS Global Rank: G5

NS State Rank: CT (S5), DC (S5), DE (S5), MA (S5), MD (S5), ME (S5), MI (SNA), NH (S5), NJ (S5), NY (S5), OH (SNR), PA (S5), RI (S5), VA (S5), VT (S5), WV (S5), LB (S5), NB (S5), ON (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 | 126.5                  | < 1 | 155.7                 | < 1 | 0.0                  | 0   | 0.0                   | 0   |
| Status 2 | 380.5                  | < 1 | 32,070.0              | 5   | 0.0                  | 0   | 302.0                 | < 1 |
| Status 3 | 69.5                   | < 1 | 86,124.2              | 14  | 0.0                  | 0   | 10,998.5              | 2   |
| Status 4 | 0.0                    | 0   | 0.0                   | 0   | 0.0                  | 0   | 9.3                   | < 1 |
| Total    | 576.5                  | < 1 | 118,349.8             | 19  | 0.0                  | 0   | 11,309.9              | 2   |
|          | US Dept. of Energy     |     | US Nat. Park Service  |     | NOAA                 |     | Other Federal Lands   |     |
|          | ha                     | %   | ha                    | %   | ha                   | %   | ha                    | %   |
| Status 1 | 0.0                    | 0   | 16,902.0              | 3   | 0.0                  | 0   | 0.0                   | 0   |
| Status 2 | 0.0                    | 0   | 0.0                   | 0   | 0.0                  | 0   | 0.0                   | 0   |
| Status 3 | 0.0                    | 0   | 1,888.5               | < 1 | 0.0                  | 0   | 0.0                   | 0   |
| Status 4 | 0.0                    | 0   | 0.0                   | 0   | 0.0                  | 0   | 0.0                   | 0   |
| Total    | 0.0                    | 0   | 18,790.5              | 3   | 0.0                  | 0   | 0.0                   | 0   |
|          | 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   | 0.0                   | 0   | 7,919.7              | 1   | 0.0                   | 0   |
| Status 3 | 0.0                    | 0   | 1,703.2               | < 1 | 0.0                  | 0   | 167.2                 | < 1 |
| Status 4 | 0.0                    | 0   | 0.0                   | 0   | 0.0                  | 0   | 0.0                   | 0   |
| Total    | 0.0                    | 0   | 1,703.2               | < 1 | 7,919.7              | 1   | 167.2                 | < 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   | 562.3                 | < 1 | 0.0                  | 0   | 0.0                   | 0   |
| Status 3 | 0.0                    | 0   | 0.0                   | 0   | 0.0                  | 0   | 9.9                   | < 1 |
| Status 4 | 0.0                    | 0   | 0.0                   | 0   | 33.8                 | < 1 | 0.0                   | 0   |
| Total    | 0.0                    | 0   | 562.3                 | < 1 | 33.8                 | < 1 | 9.9                   | < 1 |
|          | Private Land - No Res. |     | Water                 |     | Overall Total        |     |                       |     |
|          | ha                     | %   | ha                    | %   | ha                   | %   | ha                    | %   |
| Status 1 | 0.0                    | 0   | 0.0                   | 0   | 17,184.2 3           |     |                       |     |
| Status 2 | 0.0                    | 0   | 0.0                   | 0   | 41,234.6 7           |     |                       |     |
| Status 3 | 0.0                    | 0   | 0.0                   | 0   | 100,960.9 30         |     |                       |     |
| Status 4 | 375,941.9              | 60  | 73.0                  | < 1 | 376,058.0 61         |     |                       |     |
| Total    | 375,941.9              | 60  | 73.0                  | < 1 | 535,437.6 100        |     |                       |     |

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 Two-lined Salamander is typically associated with rocky brooks, springs, and seepages. Adults hide under objects in or near water. Adults may disperse into wooded terrestrial habitats in wet warm weather. In New York, they are rarely found on soils of low pH (Wyman 1988, Wyman and Jancola 1992). Eggs are typically are laid on underside of submerged rocks, logs, or aquatic plants from April-June (Johnson and Goldberg 1975). The female remains with the eggs for an incubation period of about 30 days. The larvae metamorphose in 2-3 years (Wilder 1924). Most individuals are sexually mature during the second fall after metamorphosis in New York (Stewart 1956). Bahret (1996) found eggs in a lake at depths of 9.0-13.5 m, on the topmost leaves of water moss, far from shore and from surface drainage inlets. Stacy Smith, 15April05

Elevation Mask: < 2000m

Hydrography Mask:

Freshwater Only

Utilizes flowing water features with buffers of 120m from and 30m into selected water features.

Utilizes open water features with buffers of 120m from and 120m into selected water features.

Utilizes wet vegetation features with buffer of unlimited into selected vegetation features.

### Selected Map Units:

| Functional Group | Map Unit Name  |
|------------------|--|
| Anthropogenic    | Low Intensity Developed  |
| 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 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-Heath Forest - Virginia/Pitch Pine Modifier            |
| Water            | Open Water (Fresh)   |
| Wetlands         | Atlantic Coastal Plain Blackwater Stream Floodplain Forest - Forest Modifier     |
| Wetlands         | Atlantic Coastal Plain Blackwater Stream Floodplain Forest - Herbaceous Modifier |
| Wetlands         | Atlantic Coastal Plain Brownwater Stream Floodplain Forest                       |
| Wetlands         | Atlantic Coastal Plain Depression Pondshore                                      |
| Wetlands         | Atlantic Coastal Plain Large Natural Lakeshore                                   |
| Wetlands         | Atlantic Coastal Plain Northern Pondshore  |
| Wetlands         | Atlantic Coastal Plain Small Blackwater River Floodplain Forest                  |
| Wetlands         | Central Appalachian Floodplain - Forest Modifier                                 |
| Wetlands         | Central Appalachian Floodplain - Herbaceous Modifier                             |
| Wetlands         | Central Appalachian Riparian - Forest Modifier                                   |
| Wetlands         | Central Appalachian Riparian - Herbaceous Modifier                               |
| Wetlands         | Central Interior Highlands and Appalachian Sinkhole and Depression Pond          |
| Wetlands         | South-Central Interior Large Floodplain - Forest Modifier                        |
| Wetlands         | South-Central Interior Large Floodplain - Herbaceous Modifier                    |

- CITATIONS:** Bahret, R. 1996. Ecology of lake dwelling EURYCEA BISLINEATA in the Shawangunk Mountains, New York. *Journal of Herpetology* 30:399-401.
- Johnson, J. E., and A. S. Goldberg. 1975. Movement of larval two-lined salamanders (EURYCEA BISLINEATA) in the Mill River, Massachusetts. *Copeia* 1975:588-589.
- Sever, D.M. 1999. *Eurycea bislineata*. *Catalogue of American Amphibians and Reptiles*. 683:1-5.
- Stewart, M. M. 1956. Certain aspects of the natural history and development of the northern two-lined salamander, EURYCEA B. BISLINEATA (Green), in the Ithaca, New York region. Ph.D. diss., Cornell Univ.
- Wilder, I. W. 1924. The relation of growth to metamorphosis in EURYCEA BISLINEATA. *J. Exp. Zool.* 40:1-112.
- 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.

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