



SOUTHEAST GAP ANALYSIS PROJECT



Species Modeling Report

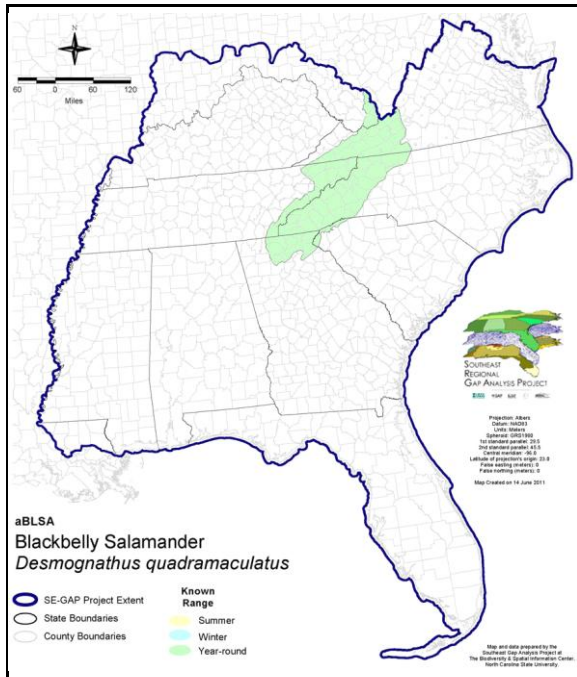
Blackbelly Salamander

Desmognathus quadramaculatus

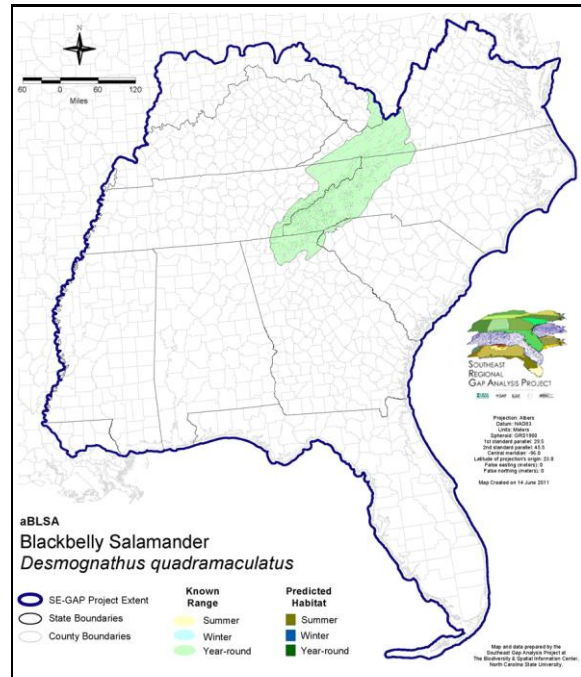
Taxa: Amphibian
 Order: Caudata
 Family: Plethodontidae

SE-GAP Spp Code: **aBLSA**
 ITIS Species Code: 173642
 NatureServe Element Code: AAAAD03080

KNOWN RANGE:



PREDICTED HABITAT:



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

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

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

Data Download: http://www.basic.ncsu.edu/segap/datazip/region/vert/aBLSA_se00.zip

PROTECTION STATUS:

Reported on March 14, 2011

Federal Status: ---

State Status: ---

NS Global Rank: G5

NS State Rank: GA (S5), NC (S5), SC (SNR), TN (S4), VA (S4), WV (S3)

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	0.0	0	2,467.8	< 1	0.0	0	0.0	0
Status 2	0.0	0	8,237.9	3	0.0	0	0.0	0
Status 3	0.0	0	57,272.0	22	0.6	< 1	1.0	< 1
Status 4	0.0	0	0.0	0	0.0	0	0.0	0
Total	0.0	0	67,977.6	26	0.6	< 1	1.0	< 1
	US Dept. of Energy		US Nat. Park Service		NOAA		Other Federal Lands	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	18,517.5	7	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	1,007.4	< 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	19,524.9	8	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	813.0	< 1	1,869.8	< 1	0.0	0
Status 3	1,295.2	< 1	1,708.0	< 1	888.8	< 1	234.2	< 1
Status 4	0.0	0	0.0	0	108.3	< 1	0.0	0
Total	1,295.2	< 1	2,521.0	< 1	2,866.8	1	234.2	< 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	302.2	< 1	0.0	0	0.0	0
Status 3	0.0	0	0.0	0	3.5	< 1	0.0	0
Status 4	0.0	0	0.0	0	4.5	< 1	0.0	0
Total	0.0	0	302.2	< 1	8.0	< 1	0.0	0
	Private Land - No Res.		Water		Overall Total			
	ha	%	ha	%	ha	%		
Status 1	0.0	0	0.0	0	20,985.3	8		
Status 2	0.0	0	0.0	0	11,222.8	4		
Status 3	0.0	0	0.0	0	62,410.6	47		
Status 4	104,472.0	41	4.9	< 1	104,697.9	41		
Total	104,472.0	41	4.9	< 1	199,316.6	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 Black-bellied salamander is found in the mountains and adjacent piedmont (Martof et al. 1980). It is found in or along the banks of rocky, swift-moving streams with cool, clear water, near waterfalls and seeps. Refuges are in rock crevices or in burrows (Camp and Lee 1996). Usually found at elevations greater than 500 meters, but sometimes is found at lower elevations when local conditions are suitable (Petranka 1998). Eggs are laid on undersides of rocks or on tree roots in streambed, apparently in headwater tributaries in North Carolina (Bruce 1985). Lays up to about 60 eggs in June-July, singly or in cluster. The female remains with eggs until hatching. In Virginia, aquatic larvae hatched in August-September, metamorphosed in 2 years; larval period was 3-4 years (sometimes 2 years) in North Carolina (Bruce 1985, Bruce 1988). In northeastern Georgia, hatching occurred in July, and the larval period lasted 3 or 4 years, depending on location (Austin and Camp 1992). In North Carolina, females require at least 7-8 years to reach sexual maturity, males at least 6 years (Bruce 1988; Castanet et al. 1996, *Herpetologica* 52:160-171). S. Smith 18Feb05

Elevation Mask: < 1676m

Hydrography Mask:

Freshwater Only

Fast Current Only

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

Selected Map Units:

Functional Group	Map Unit Name
Forest/Woodland	Appalachian Hemlock-Hardwood Forest
Forest/Woodland	Central and Southern Appalachian Northern Hardwood Forest
Forest/Woodland	Central Appalachian Oak and Pine 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 Piedmont Dry Oak-Heath Forest - Virginia/Pitch Pine Modifier
Forest/Woodland	Southern Piedmont Mesic Forest
Rock Outcrop	North-Central Appalachian Acidic Cliff and Talus
Rock Outcrop	Southern Appalachian Spray Cliff
Water	Open Water (Fresh)

- CITATIONS:** Austin, R. M., Jr., and C. D. Camp. 1992. Larval development of black-bellied salamanders, *DESMOGNATHUS QUADRAMACULATUS*, in northeastern Georgia. *Herpetologica* 48:313-317.
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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

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