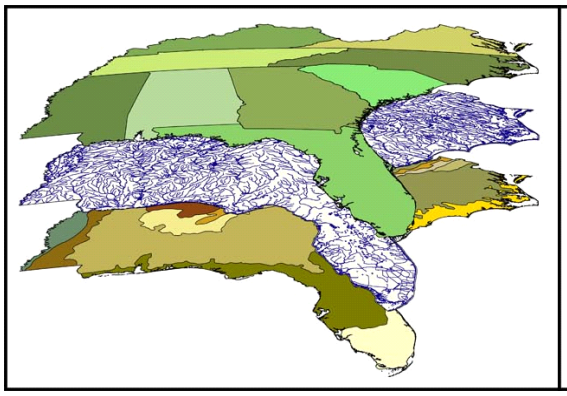


SOUTHEAST GAP ANALYSIS PROJECT

Species Modeling Report

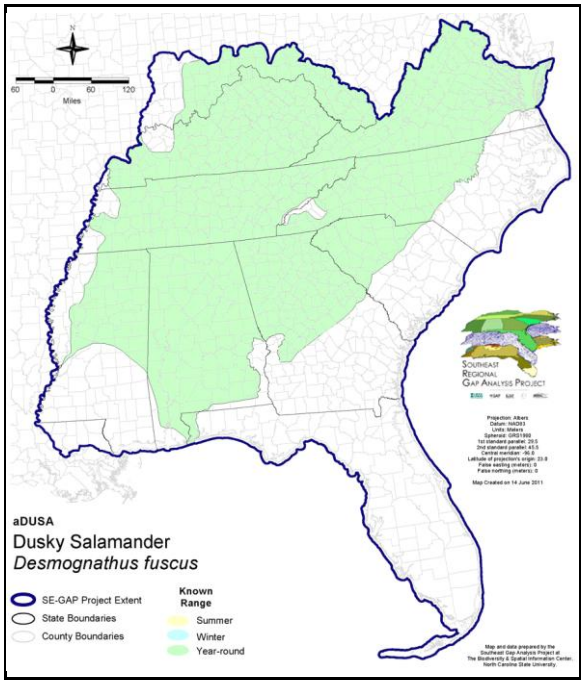
Dusky Salamander

Desmognathus fuscus

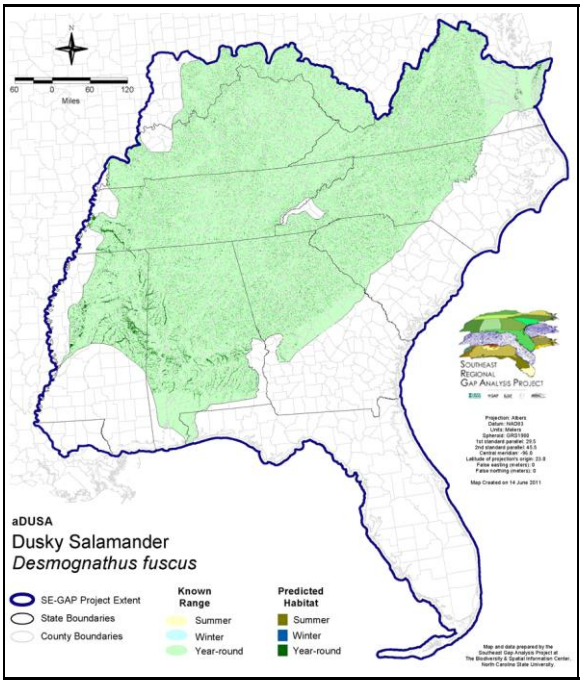
Taxa: Amphibian
Order:
Family:

SE-GAP Spp Code: **aDUSA**
ITIS Species Code: 173633
NatureServe Element Code: AAAAD03040

KNOWN RANGE:



PREDICTED HABITAT:



Range Map Link: http://www.basic.ncsu.edu/segap/datazip/maps/SE_Range_aDUSA.pdf
Predicted Habitat Map Link: http://www.basic.ncsu.edu/segap/datazip/maps/SE_Dist_aDUSA.pdf
GAP Online Tool Link: http://www.gapserve.ncsu.edu/segap/segap/index2.php?species=aDUSA
Data Download: http://www.basic.ncsu.edu/segap/datazip/region/vert/aDUSA_se00.zip

PROTECTION STATUS:

Reported on March 14, 2011

Federal Status: ---
State Status: ---
NS Global Rank: ---
NS State Rank: ---

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	5,656.8	< 1	2,469.2	< 1	0.0	0	0.0	0
Status 2	31,693.0	< 1	36,333.3	< 1	0.0	0	861.5	< 1
Status 3	207.7	< 1	199,664.2	4	6,751.8	< 1	24,714.6	< 1
Status 4	6.4	< 1	0.0	0	0.0	0	1.6	< 1
Total	37,563.8	< 1	238,466.7	5	6,751.8	< 1	25,577.7	< 1

	US Dept. of Energy		US Nat. Park Service		NOAA		Other Federal Lands	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	15,270.5	< 1	0.0	0	0.0	0
Status 2	0.0	0	796.1	< 1	0.0	0	0.0	0
Status 3	1,194.8	< 1	11,809.5	< 1	0.0	0	44.0	< 1
Status 4	0.0	0	0.0	0	0.0	0	0.0	0
Total	1,194.8	< 1	27,876.1	< 1	0.0	0	44.0	< 1

	Native Am. Reserv.		State Park/Hist. Park		State WMA/Gameland		State Forest	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	124.5	< 1	4.1	< 1	0.0	0
Status 2	0.0	0	2,074.9	< 1	48,467.6	< 1	77.4	< 1
Status 3	1,983.1	< 1	12,371.4	< 1	31,808.8	< 1	4,614.6	< 1
Status 4	0.0	0	0.0	0	8,489.4	< 1	0.0	0
Total	1,983.1	< 1	14,570.7	< 1	88,770.0	2	4,692.0	< 1

	State Coastal Reserve		ST Nat.Area/Preserve		Other State Lands		Private Cons. Easemt.	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	2,209.7	< 1	0.0	0	0.0	0
Status 2	0.0	0	7,864.3	< 1	2.8	< 1	187.0	< 1
Status 3	0.0	0	665.7	< 1	263.5	< 1	2,144.9	< 1
Status 4	0.0	0	0.0	0	283.4	< 1	0.0	0
Total	0.0	0	10,739.7	< 1	549.7	< 1	2,331.9	< 1

	Private Land - No Res.		Water		Overall Total	
	ha	%	ha	%	ha	%
Status 1	0.0	0	0.0	0	25,734.8	< 1
Status 2	0.0	0	0.0	0	128,357.7	2
Status 3	0.0	0	0.0	0	298,238.7	10
Status 4	4,536,703.3	87	4,263.7	< 1	4,558,230.8	87
Total	4,536,703.3	87	4,263.7	< 1	5,010,562.0	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: Occurs in a variety of aquatics or semiaquatic, forested habitats throughout much of the eastern US including swamps, bottomland hardwoods, seepage areas and the edges of springs and small rocky or muddy streams (Mount 1975) and in burrows [especially crayfish] (Ashton 1975). At lower elevations individuals are often abundant in or about seeps, or along margins of small streams with rocks, logs, mosses, and other cover. In mountainous regions, D. fuscus are often found several meters from the waters edge. D. fuscus is generally rare above 1200m in elevation (Petranka). Courtship may occur both in fall and spring. Oviposition peaks in July in many areas. Clutch size often 10-30. Eggs attended by female. Larvae hatch in 5-9 weeks (Tennessee, Kentucky, Ohio) or 10-13 weeks (Ohio), metamorphose 6-13 months later (in June or July in Ohio). Sexually mature in 2-3 years. The larval stage is aquatic. S. Smith 18Feb05

Elevation Mask: < 1200m

Hydrography Mask:

Freshwater Only

Utilizes flowing water features with buffers of 30m from and 30m 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	Central and Southern Appalachian Montane Oak Forest
Forest/Woodland	Central Appalachian Oak and Pine Forest
Forest/Woodland	East Gulf Coastal Plain Limestone Forest
Forest/Woodland	East Gulf Coastal Plain Northern Dry Upland Hardwood Forest
Forest/Woodland	East Gulf Coastal Plain Northern Loess Bluff Forest
Forest/Woodland	East Gulf Coastal Plain Northern Loess Plain Oak-Hickory Upland - Hardwood Modifier
Forest/Woodland	East Gulf Coastal Plain Northern Loess Plain Oak-Hickory Upland - Juniper Modifier
Forest/Woodland	East Gulf Coastal Plain Northern Mesic Hardwood Forest
Forest/Woodland	East Gulf Coastal Plain Southern Loess Bluff Forest
Forest/Woodland	East Gulf Coastal Plain Southern Mesic Slope Forest
Forest/Woodland	Nashville Basin Limestone Glade
Forest/Woodland	Northeastern Interior Dry Oak Forest - Mixed Modifier
Forest/Woodland	Northeastern Interior Dry Oak Forest - Virginia/Pitch Pine Modifier
Forest/Woodland	Northeastern Interior Dry Oak Forest-Hardwood Modifier
Forest/Woodland	Ridge and Valley Calcareous Valley Bottom Glade and Woodland
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 - Loblolly Pine 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
Forest/Woodland	Southern Piedmont Northern Triassic Basin Dry Forest
Forest/Woodland	Southern Ridge and Valley Dry Calcareous Forest
Forest/Woodland	Southern Ridge and Valley Dry Calcareous Forest - Hardwood Modifier

Water	Open Water (Fresh)
Wetlands	Atlantic Coastal Plain Clay-Based Carolina Bay Forested Wetland
Wetlands	Atlantic Coastal Plain Northern Basin Swamp and Wet Hardwood Forest
Wetlands	Atlantic Coastal Plain Streamhead Seepage Swamp, Pocosin, and Baygall
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	East Gulf Coastal Plain Interior Shrub Bog
Wetlands	East Gulf Coastal Plain Near-Coast Pine Flatwoods - Offsite Hardwood Modifier
Wetlands	East Gulf Coastal Plain Northern Seepage Swamp
Wetlands	East Gulf Coastal Plain Small Stream and River Floodplain Forest
Wetlands	East Gulf Coastal Plain Southern Loblolly-Hardwood Flatwoods
Wetlands	Lower Mississippi River Bottomland and Floodplain Forest
Wetlands	Lower Mississippi River Bottomland Depressions - Forest Modifier
Wetlands	Lower Mississippi River Bottomland Depressions - Herbaceous Modifier
Wetlands	Mississippi River Low Floodplain (Bottomland) Forest
Wetlands	Mississippi River Riparian Forest
Wetlands	North-Central Appalachian Acidic Swamp
Wetlands	North-Central Appalachian Seepage Fen
Wetlands	North-Central Interior and Appalachian Rich Swamp
Wetlands	South-Central Interior Small Stream and Riparian
Wetlands	Southern and Central Appalachian Bog and Fen
Wetlands	Southern Appalachian Seepage Wetland
Wetlands	Southern Coastal Plain Herbaceous Seepage Bog
Wetlands	Southern Coastal Plain Nonriverine Basin Swamp
Wetlands	Southern Coastal Plain Seepage Swamp and Baygall
Wetlands	Southern Piedmont Seepage Wetland
Wetlands	Southern Piedmont Small Floodplain and Riparian Forest
Wetlands	Southern Piedmont/Ridge and Valley Upland Depression Swamp
Wetlands	Western Highland Rim Seepage Fen

CITATIONS:

Ashton, Ray E. Jr. 1975. A study of movement, home range, and winter behavior of Desmognathus fuscus (Rafinesque). Journal of Herpetology. 9(1):85-91.

Barbour, R. W. 1971. Amphibians and reptiles of Kentucky. Univ. Press of Kentucky, Lexington. x + 334 pp.

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.

Conant, R. 1975. A Field Guide to Reptiles and Amphibians of Eastern and Central North America. Second Edition. Houghton Mifflin Company, Boston, Massachusetts. xvii + 429 pp.

Conant, R. and J. T. Collins. 1991. A field guide to reptiles and amphibians:eastern and central North America. Third edition. Houghton Mifflin Co., Boston, Massachusetts. 450 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.

Folkerts, G. W. 1968. The genus DESMOGNATHUS Baird (Amphibia:Plethodontidae) in Alabama. Ph.D. diss., Auburn Univ., Auburn, Alabama. 129 pp.

Green, N. B., and T. K. Pauley. 1987. Amphibians and reptiles in West Virginia. University of Pittsburg Press, Pittsburg, Pennsylvania. xi + 241 pp.

Hom, C. L. 1987. Reproductive ecology of female dusky salamanders, DESMOGNATHUS FUSCUS (Plethodontidae), in the southern Appalachians. Copeia 1987:768-777.

Hom, C. L. 1988. Cover object choice by female dusky salamanders, DESMOGNATHUS FUSCUS. J. Herpetol. 22:247-249.

Kamstra, J. 1991. Rediscovery of the northern dusky salamander, DESMOGNATHUS F. FUSCUS, in Ontario. Can. Field-Nat. 105:561-563.

Karlin, A. A., and S. I. Guttman. 1986. Systematics and geographic isozyme variation in the plethodontid salamander DESMOGNATHUS FUSCUS (Rafinesque). Herpetologica 42:282-301.

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.

Means, D. B., and A. A. Karlin. 1989. A new species of DESMOGNATHUS from the eastern Gulf Coastal Plain. Herpetologica 45:37-46.

Minton, S. A., Jr. 1972. Amphibians and reptiles of Indiana. Indiana Academy Science Monographs 3. v + 346 pp.

Mount, R. H. 1975. The Reptiles and Amphibians of Alabama. Auburn University Agricultural Experiment Station, Auburn, Alabama. vii + 347 pp.

Petranka, J. W. 1998. Salamanders of the United States and Canada. Washington DC: Smithsonian Inst. Press.

Redmond, W. H., and A. F. Scott. 1996. Atlas of amphibians in Tennessee. The Center for Field Biology, Austin Peay State University, Miscellaneous Publication Number 12. v + 94 pp.

Tilley, S. G. 1988. Hybridization between two species of DESMOGNATHUS (Amphibia:Caudata:Plethodontidae) in the Great Smoky Mountains. Herpetol. Monogr. 2:27-39.

Wyman, R. L. 1988. Soil acidity and moisture and the distribution of amphibians in five forests of southcentral New York. Copeia 1988:394-399.

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.