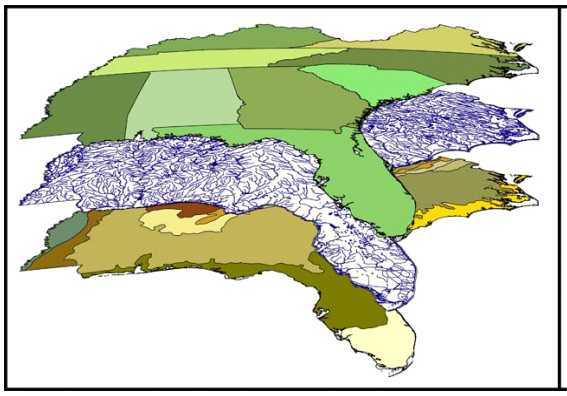


SOUTHEAST GAP ANALYSIS PROJECT

USGS gap BaSIC NARSAL

Species Modeling Report

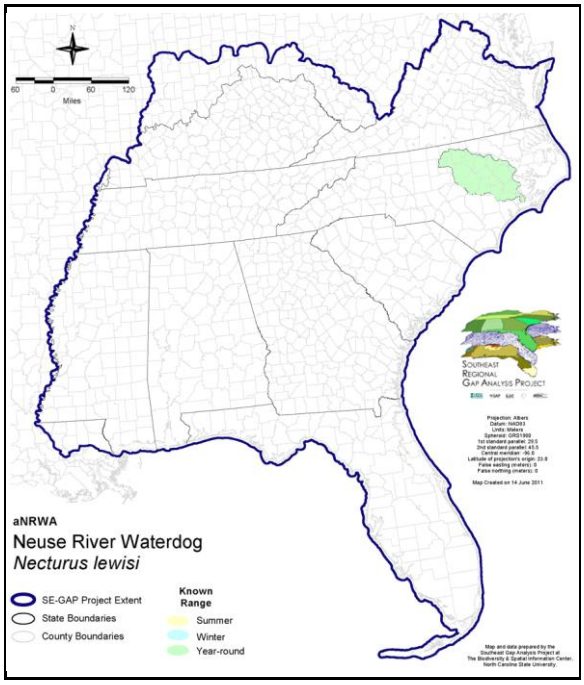
Neuse River Waterdog

Necturus lewisi

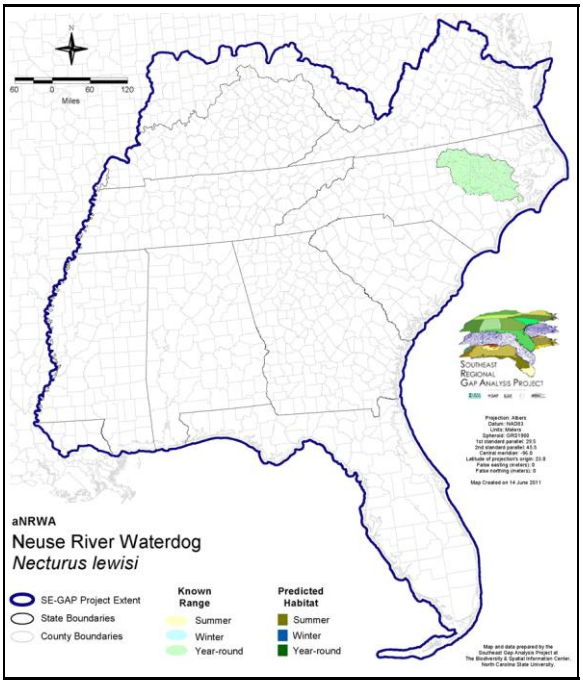
Taxa: Amphibian
Order: Caudata
Family: Proteidae

SE-GAP Spp Code: **aNRWA**
ITIS Species Code: 173627
NatureServe Element Code: AAAAE01030

KNOWN RANGE:



PREDICTED HABITAT:



Range Map Link: http://www.basic.ncsu.edu/segap/datazip/maps/SE_Range_aNRWA.pdf
Predicted Habitat Map Link: http://www.basic.ncsu.edu/segap/datazip/maps/SE_Dist_aNRWA.pdf
GAP Online Tool Link: http://www.gapserve.ncsu.edu/segap/segap/index2.php?species=aNRWA
Data Download: http://www.basic.ncsu.edu/segap/datazip/region/vert/aNRWA_se00.zip

PROTECTION STATUS:

Reported on March 14, 2011

Federal Status: ---
State Status: NC (SC)
NS Global Rank: G3
NS State Rank: NC (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	0.0	0	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	87.2	< 1	0.0	0	50.0	< 1
Status 4	0.0	0	0.0	0	0.0	0	0.0	0
Total	0.0	0	87.2	< 1	0.0	0	50.0	< 1

	US Dept. of Energy		US Nat. Park Service		NOAA		Other Federal Lands	
	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	0.0	0	0.0	0
Status 3	0.0	0	0.0	0	0.0	0	0.4	< 1
Status 4	0.0	0	0.0	0	0.0	0	0.0	0
Total	0.0	0	0.0	0	0.0	0	0.4	< 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	0.0	0	152.6	< 1	0.0	0
Status 3	0.0	0	146.9	< 1	645.1	1	2.2	< 1
Status 4	0.0	0	0.0	0	0.0	0	0.0	0
Total	0.0	0	146.9	< 1	797.8	2	2.2	< 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	5.2	< 1	0.0	0	0.0	0
Status 3	0.0	0	0.0	0	0.0	0	0.0	0
Status 4	0.0	0	0.0	0	0.0	0	0.0	0
Total	0.0	0	5.2	< 1	0.0	0	0.0	0

	Private Land - No Res.		Water		Overall Total	
	ha	%	ha	%	ha	%
Status 1	0.0	0	0.0	0	0.0	0
Status 2	0.0	0	0.0	0	157.9	< 1
Status 3	0.0	0	0.0	0	931.8	2
Status 4	48,072.5	97	137.3	< 1	48,209.8	98
Total	48,072.5	97	137.3	< 1	49,299.4	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 Neuse River waterdog is endemic to North Carolina. Martof et al. (1980) states, 'It inhabits the main streams and larger tributaries of the Neuse and Tar rivers from well above tidewater into the lower piedmont.' In the Piedmont and along fall line it inhabits moderate to swift flowing streams. In the coastal plain it is found in or near the main stream of the Neuse and Tar rivers and their major tributaries. Quiet, backwaters and floodplain swampy areas with large amounts of leaf litter covering the substrate have been identified by some as the principal habitat of this species (Martof et al. 1980, Wilson 1995). However, others identify main channels of moderately sized streams with hard-clay substrate as the waterdog's primary dwelling place (Petranka 1998). From the studies leading to these differing observations, it is clear that the entire body of water is utilized, perhaps in support of different eco-biological functions. They require relatively high oxygen levels and water quality (Ashton 1990). Eggs are attached to the undersides of objects in water. Much or their habitat has been lost due to rapid and large-scale development and construction impoundments. Eggs are probably laid in the spring and hatch in June-July. Paedomorphic, sexual maturity attained in about 6 years. S. Smith 18Feb05

Hydrography Mask:

Freshwater Only

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

Selected Map Units:

Functional Group	Map Unit Name
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 Small Blackwater River Floodplain Forest
Wetlands	Atlantic Coastal Plain Small Brownwater River Floodplain Forest
Wetlands	Southern Piedmont Large Floodplain Forest - Forest Modifier
Wetlands	Southern Piedmont Large Floodplain Forest - Herbaceous Modifier
Wetlands	Southern Piedmont Small Floodplain and Riparian Forest

CITATIONS:

Ashton, R. E., Jr. 1990. NECTURUS LEWISI. Cat. Am. Amph. Rept. 456.1-456.2.

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.

Bury, R. B., C. K. Dodd, Jr., and G. M. Fellers. 1980. Conservation of the Amphibia of the United States:a review. U.S. Fish and Wildlife Service, Washington, D.C., Resource Publication 134. 34 pp.

Guttman, S. I., et al. 1990. An electrophoretic analysis of NECTURUS from the southeastern United States. J. Herpetol. 24:163-175.

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.

Maxson, L. R., P. E. Moler, and B. W. Mansell. 1988. Albumin evolution in salamanders of the genus NECTURUS. J. Herpetol. 22:231-235.

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

Wilson, L. A. 1995. The Land Manager's Guide to the amphibians and reptiles of the South. Chapel Hill, NC: The Nature Conservancy.

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.