



SOUTHEAST GAP ANALYSIS PROJECT



Species Modeling Report

Northern Water Snake

Nerodia sipedon

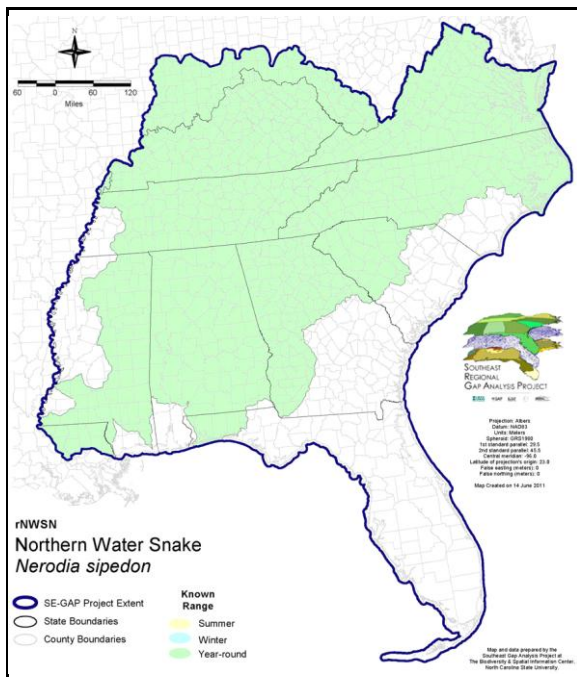
Taxa: Reptilian
Order: Squamata
Family: Colubridae

SE-GAP Spp Code: **rNWSN**

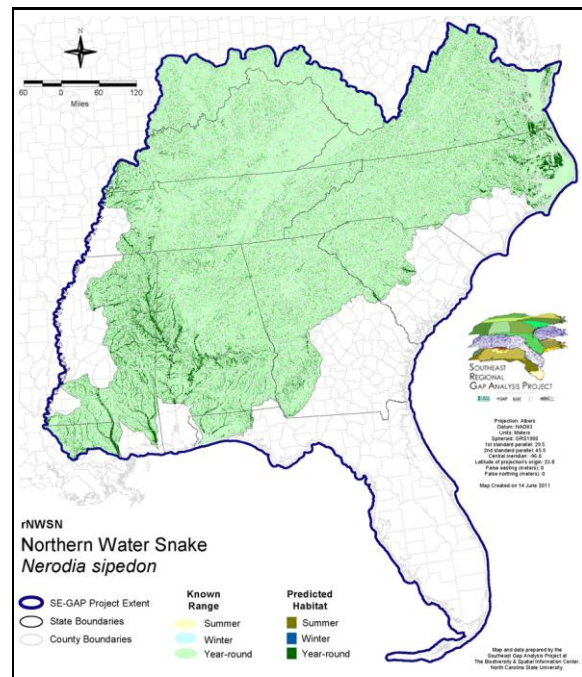
ITIS Species Code: 174251

NatureServe Element Code: ARADB22060

KNOWN RANGE:



PREDICTED HABITAT:



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

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

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

Data Download: http://www.basic.ncsu.edu/segap/datazip/region/vert/rNWSN_se00.zip

PROTECTION STATUS:

Reported on March 14, 2011

Federal Status: ---

State Status: KY (N), NE (NC), NJ (S), NY (GN), RI (Not Listed), QC (Susceptible)

NS Global Rank: G5

NS State Rank: AL (S5), AR (S5), CO (S4), CT (S5), DC (S4), DE (S5), FL (SNR), GA (S5), IA (S5), IL (SNR), IN (SNR), KS (S5), KY (S5), LA (S4), MA (S5), MD (S5), ME (S5), MI (S5), MN (SNR), MO (SNR), MS (S5), NC (S5), NE (S5), NH (S5), NJ (S5), NY (S5), OH (SNR), OK (S4), PA (S5), RI (S5), SC (SNR), SD (S1), TN (S5), TX (S1), VA (S5), VT (S3), WI (S5), WV (S5), ON (S5), QC (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	75,905.8	< 1	2,492.1	< 1	0.0	0	0.0	0
Status 2	122,278.0	1	26,166.1	< 1	0.0	0	2,146.1	< 1
Status 3	2,045.5	< 1	192,418.9	2	12,976.3	< 1	71,178.6	< 1
Status 4	28.5	< 1	0.0	0	0.0	0	20.1	< 1
Total	200,257.8	2	221,077.1	2	12,976.3	< 1	73,344.8	< 1
	US Dept. of Energy		US Nat. Park Service		NOAA		Other Federal Lands	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	27,400.8	< 1	309.2	< 1	0.0	0
Status 2	0.0	0	8,599.1	< 1	728.2	< 1	0.0	0
Status 3	7,338.3	< 1	9,832.0	< 1	0.0	0	379.7	< 1
Status 4	0.0	0	0.0	4	0.0	0	0.0	0
Total	7,338.3	< 1	45,832.3	< 1	1,037.4	< 1	379.7	< 1
	Native Am. Reserv.		State Park/Hist. Park		State WMA/Gameland		State Forest	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	154.0	< 1	3.2	< 1	0.0	0
Status 2	0.0	0	1,664.6	< 1	96,053.7	1	32.9	< 1
Status 3	4,211.1	< 1	46,234.7	< 1	94,307.0	1	10,883.3	< 1
Status 4	0.0	0	0.0	0	9,790.8	< 1	5.3	< 1
Total	4,211.1	< 1	48,053.3	< 1	200,154.6	2	10,921.5	< 1
	State Coastal Reserve		ST Nat.Area/Preserve		Other State Lands		Private Cons. Easemt.	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	1,617.8	< 1	0.0	0	0.0	0
Status 2	25,607.6	< 1	23,072.8	< 1	3.4	< 1	318.9	< 1
Status 3	0.0	0	1,332.5	< 1	719.2	< 1	2,987.5	< 1
Status 4	0.0	0	0.0	0	346.8	< 1	0.0	0
Total	25,607.6	< 1	26,023.1	< 1	1,069.4	< 1	3,306.3	< 1
	Private Land - No Res.		Water		Overall Total			
	ha	%	ha	%	ha	%		
Status 1	0.0	0	0.0	0	107,882.8	1		
Status 2	0.0	0	0.0	0	306,671.3	3		
Status 3	0.0	0	0.0	0	456,844.6	7		
Status 4	8,067,009.4	88	19,859.1	< 1	8,106,822.8	88		
Total	8,067,009.4	88	19,859.1	< 1	8,978,221.5	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: Northern water snakes can be found in any permanent aquatic environment. In general their habitat is considered sympatric to *N. faciata* (Dundee & Rossman 1989, Palmer & Braswell 1995) and will encompass a wide variety of habitats such as lakes, ponds, rivers, creeks, swamps and marshes (Mitchell 1994, Wilson 1995). However, unlike *N. faciata* the Northern water snake will also occur in or near salt and brackish waters (Palmer & Braswell 1995). Additionally, Northern water snakes seem to be partial to clear, cool, flowing streams, in portions of their range, especially the Coastal Plain, where *N. erythrogaster* outnumbers them in slower, sluggish waters (Mount 1975, Barbour 1971, Dundee & Rossman 1989). In a study in Indiana, Roe et al. (2003) identified this species as using upland habitats of oak/hickory hardwoods, old fields, shrub-scrub, and agricultural areas but only within 30m of wetlands. Amy Silvano 23Aug05

Ecosystem Classifiers: All wetlands (excluding flatwoods), AG, pasture, and Hardwood & Mixed Forests.
Amy Silvano 23Aug05

Hydrography Mask:

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

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

Utilizes wet vegetation features with buffers of 30m from and unlimited into selected vegetation features.

Selected Map Units:

Functional Group	Map Unit Name
Anthropogenic	Pasture/Hay
Anthropogenic	Row Crop
Brackish Tidal Marsh & Wetland	Atlantic Coastal Plain Central Salt and Brackish Tidal Marsh
Brackish Tidal Marsh & Wetland	Atlantic Coastal Plain Embayed Region Tidal Salt and Brackish Marsh
Brackish Tidal Marsh & Wetland	Atlantic Coastal Plain Indian River Lagoon Tidal Marsh
Brackish Tidal Marsh & Wetland	Atlantic Coastal Plain Northern Sea-Level Fen
Brackish Tidal Marsh & Wetland	Atlantic Coastal Plain Northern Tidal Salt Marsh
Brackish Tidal Marsh & Wetland	Atlantic Coastal Plain Northern Tidal Wooded Swamp
Brackish Tidal Marsh & Wetland	Atlantic Coastal Plain Southern Tidal Wooded Swamp
Brackish Tidal Marsh & Wetland	East Gulf Coastal Plain Tidal Wooded Swamp
Brackish Tidal Marsh & Wetland	Mississippi Sound Salt and Brackish Tidal Marsh
Coastal Dune & Freshwater Wetland	Atlantic and Gulf Coastal Plain Interdunal Wetland
Forest/Woodland	Allegheny-Cumberland Dry Oak Forest and Woodland
Forest/Woodland	Allegheny-Cumberland Dry Oak Forest and Woodland - Hardwood Modifier
Forest/Woodland	Atlantic Coastal Plain Dry and Dry-Mesic Oak Forest
Forest/Woodland	Atlantic Coastal Plain Fall-line Sandhills Longleaf Pine Woodland - Offsite Hardwood Modifier
Forest/Woodland	Atlantic Coastal Plain Northern Mixed Oak-Heath Forest
Forest/Woodland	Central Appalachian Oak and Pine Forest
Forest/Woodland	East Gulf Coastal Plain Interior Shortleaf Pine-Oak Forest - Hardwood Modifier
Forest/Woodland	East Gulf Coastal Plain Interior Shortleaf Pine-Oak Forest - Mixed Modifier
Forest/Woodland	East Gulf Coastal Plain Interior Upland Longleaf Pine Woodland - Offsite Hardwood Modifier
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 Plain Oak-Hickory Upland - Hardwood Modifier
Forest/Woodland	Northeastern Interior Dry Oak Forest - Mixed Modifier
Forest/Woodland	Northeastern Interior Dry Oak Forest-Hardwood Modifier
Forest/Woodland	Northern Atlantic Coastal Plain Dry Hardwood Forest
Forest/Woodland	Southern and Central Appalachian Oak Forest
Forest/Woodland	Southern and Central Appalachian Oak Forest - Xeric
Forest/Woodland	Southern Coastal Plain Dry Upland Hardwood 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-(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 Ridge and Valley Dry Calcareous Forest
Forest/Woodland	Southern Ridge and Valley Dry Calcareous Forest - Hardwood Modifier
Freshwater Tidal Marsh & Wetland	Atlantic Coastal Plain Central Fresh-Oligohaline Tidal Marsh
Freshwater Tidal Marsh & Wetland	Atlantic Coastal Plain Embayed Region Tidal Freshwater Marsh
Water	Open Water (Brackish/Salt)
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 Clay-Based Carolina Bay Forested Wetland
Wetlands	Atlantic Coastal Plain Clay-Based Carolina Bay Herbaceous Wetland
Wetlands	Atlantic Coastal Plain Depression Pondshore
Wetlands	Atlantic Coastal Plain Large Natural Lakeshore
Wetlands	Atlantic Coastal Plain Nonriverine Swamp and Wet Hardwood Forest - Taxodium/Nyssa Modifier
Wetlands	Atlantic Coastal Plain Nonriverine Swamp and Wet Hardwood Forest - Oak Dominated Modifier
Wetlands	Atlantic Coastal Plain Northern Basin Peat Swamp
Wetlands	Atlantic Coastal Plain Northern Basin Swamp and Wet Hardwood Forest
Wetlands	Atlantic Coastal Plain Northern Pondshore
Wetlands	Atlantic Coastal Plain Peatland Pocosin
Wetlands	Atlantic Coastal Plain Sandhill Seep
Wetlands	Atlantic Coastal Plain Small Blackwater River Floodplain Forest
Wetlands	Atlantic Coastal Plain Small Brownwater River Floodplain Forest
Wetlands	Atlantic Coastal Plain Streamhead Seepage Swamp, Pocosin, and Baygall
Wetlands	Atlantic Coastal Plain Xeric River Dune
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 Florida Herbaceous Pondshore
Wetlands	Central Interior Highlands and Appalachian Sinkhole and Depression Pond
Wetlands	Cumberland Riverscour
Wetlands	East Gulf Coastal Plain Interior Shrub Bog
Wetlands	East Gulf Coastal Plain Large River Floodplain Forest - Forest Modifier
Wetlands	East Gulf Coastal Plain Large River Floodplain Forest - Herbaceous Modifier
Wetlands	East Gulf Coastal Plain Northern Depression Pondshore
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 Depression Pondshore
Wetlands	Floridian Highlands Freshwater Marsh
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 Florida Hardwood Hammock
Wetlands	South-Central Interior Large Floodplain - Forest Modifier
Wetlands	South-Central Interior Large Floodplain - Herbaceous Modifier
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 Blackwater River Floodplain Forest
Wetlands	Southern Coastal Plain Herbaceous Seepage Bog
Wetlands	Southern Coastal Plain Hydric Hammock
Wetlands	Southern Coastal Plain Nonriverine Basin Swamp
Wetlands	Southern Coastal Plain Nonriverine Cypress Dome
Wetlands	Southern Coastal Plain Seepage Swamp and Baygall
Wetlands	Southern Coastal Plain Spring-run Stream Aquatic Vegetation
Wetlands	Southern Piedmont Large Floodplain Forest - Forest Modifier
Wetlands	Southern Piedmont Large Floodplain Forest - Herbaceous Modifier
Wetlands	Southern Piedmont Seepage Wetland
Wetlands	Southern Piedmont Small Floodplain and Riparian Forest
Wetlands	Southern Piedmont/Ridge and Valley Upland Depression Swamp
Wetlands	Unconsolidated Shore (Lake/River/Pond)
Wetlands	Western Highland Rim Seepage Fen

CITATIONS: Collins, J. T. 1982. Amphibians and reptiles in Kansas. Second edition. Univ. Kansas Mus. Nat. Hist., Pub. Ed. Ser. 8. xiii + 356 pp.

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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.