



SOUTHEAST GAP ANALYSIS PROJECT



Species Modeling Report

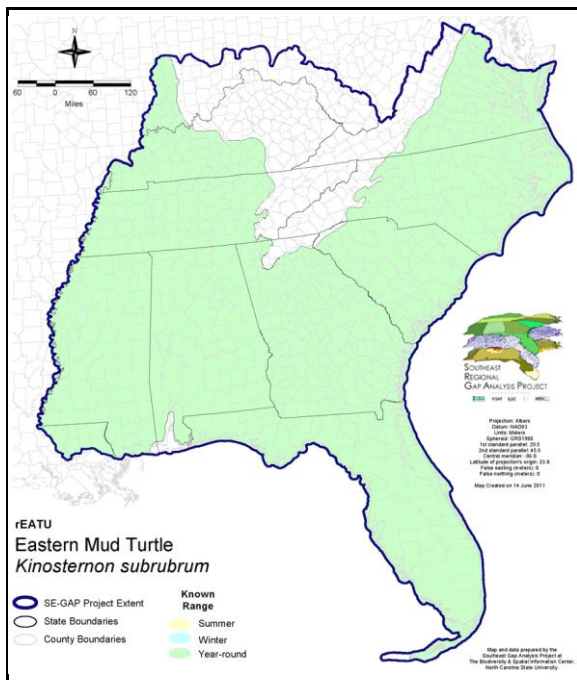
Eastern Mud Turtle

Kinosternon subrubrum

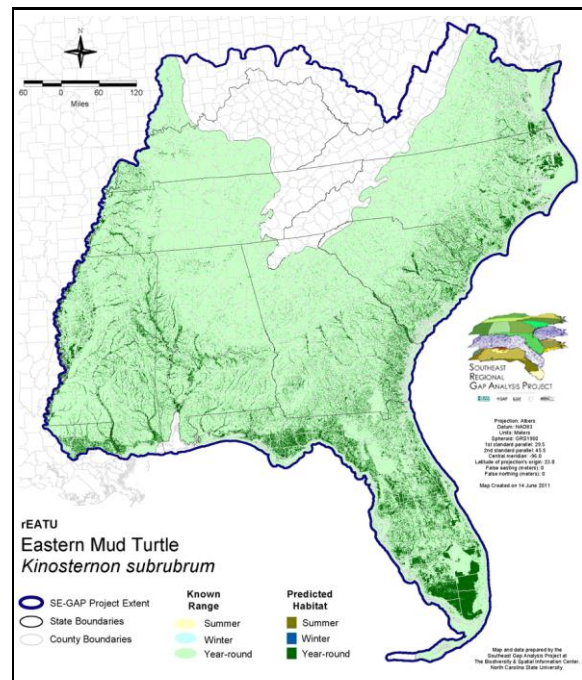
Taxa: Reptilian
 Order: Cryptodeira
 Family: Kinosternidae

SE-GAP Spp Code: **rEATU**
 ITIS Species Code: 173763
 NatureServe Element Code: ARAAE01050

KNOWN RANGE:



PREDICTED HABITAT:



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

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

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

Data Download: http://www.basic.ncsu.edu/segap/datazip/region/vert/rEATU_se00.zip

PROTECTION STATUS:

Reported on March 14, 2011

Federal Status: ---

State Status: KY (N), MS (Non-game species in need of management), NY (E)

NS Global Rank: G5

NS State Rank: AL (S5), AR (S5), DC (S4), DE (S5), FL (S5), GA (S5), IL (S3S4), IN (SNR), KY (S3S4), LA (S5), MD (S5), MO (SNR), MS (S5), NC (S5), NJ (SNR), NY (S1), OK (S4), PA (S1), SC (SNR), TN (S5), TX (S5), VA (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	89,984.3	< 1	5,580.5	< 1	0.0	0	0.0	0
Status 2	182,460.9	1	33,528.0	< 1	0.0	0	1,737.4	< 1
Status 3	1,273.8	< 1	344,125.5	3	5,509.9	< 1	171,468.1	1
Status 4	26.9	< 1	< 0.1	< 1	0.0	0	6.4	< 1
Total	273,745.9	2	383,234.1	3	5,509.9	< 1	173,211.8	1
	US Dept. of Energy		US Nat. Park Service		NOAA		Other Federal Lands	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	214,031.3	2	11.6	< 1	7,615.6	< 1
Status 2	0.0	0	3,320.5	< 1	4,241.9	< 1	9.2	< 1
Status 3	16,431.2	< 1	272,083.8	2	0.0	0	3,358.2	< 1
Status 4	0.0	0	0.0	0	0.0	0	0.0	0
Total	16,431.2	< 1	489,435.5	4	4,253.5	< 1	10,983.0	< 1
	Native Am. Reserv.		State Park/Hist. Park		State WMA/Gameland		State Forest	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	76.6	< 1	1.2	< 1	0.0	0
Status 2	0.0	0	750.5	< 1	655,658.8	5	23.7	< 1
Status 3	1,749.2	< 1	467,281.7	3	96,966.5	< 1	181,902.0	1
Status 4	0.0	0	< 0.1	< 1	9,067.4	< 1	5.2	< 1
Total	1,749.2	< 1	468,108.9	3	761,693.9	6	181,930.9	1
	State Coastal Reserve		ST Nat.Area/Preserve		Other State Lands		Private Cons. Easemt.	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	1,447.1	< 1	0.0	0	0.0	0
Status 2	11,842.0	< 1	42,993.8	< 1	2.3	< 1	1,927.7	< 1
Status 3	0.0	0	18,893.6	< 1	7,926.8	< 1	91,867.5	< 1
Status 4	0.0	0	0.0	0	869.4	< 1	0.0	0
Total	11,842.0	< 1	63,334.5	< 1	8,798.5	< 1	93,795.2	< 1
	Private Land - No Res.		Water		Overall Total			
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	0.0	0	318,748.2 2			
Status 2	0.0	0	0.0	0	938,496.5 7			
Status 3	458.3	< 1	1.1	< 1	1,681,297.2 15			
Status 4	10,297,364.3	75	46,396.6	< 1	10,362,776.9 76			
Total	10,297,822.6	75	46,397.7	< 1	13,301,318.9 100			

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: Uses a variety of aquatic habitats including ponds, lakes, creeks, swamps, freshwater and brackish marshes, ditches, and wet meadows and boggy areas, but avoids large, deep areas of water and fast waters.

They shelter in or among mud and coarse debris within riparian zones; also in recesses of shorelines, among logs in saturated riparian sites, or buried in slightly elevated ground near aquatic sites. During summer drying periods, it may estivate among mud and debris of ephemeral pond depressions rather than move to more permanent waters. The female selects a rather dry spot to lay the eggs. Sandy, loamy soils are preferred but piles of vegetable debris are also used (Ernst and Barbour 1972).

Eggs are laid in a nest dug in an open area in soft soil not far from water; also in and under vegetable and other debris and in muskrat tunnels (Ernst and Barbour 1972). Nests early as February in Louisiana, mid-March in Texas, later in north; may nest all year in Florida. Clutch size often 2-4; one clutch/year in southern Illinois, more than 1 in Texas, Arkansas (3), Louisiana, South Carolina (1-3, average 1.2 clutches/year). Eggs hatch in about 3-4 months in Arkansas and Florida, 11 weeks in Maryland. Sexually mature in 4-6 years (7-8 cm CL). In South Carolina, the mean proportion of adult females nesting in a given year was 0.51 (Frazer et al. 1991).

Directly quoted from state hab notes. Amy Silvano

Ecosystem Classifiers: Primarily aquatic so hydrology driver. Included bare soil & sand and unconsolidated shore for nesting and herbaceous vegetation for wandering. Amy Silvano 8jul05

Hydrography Mask:

Freshwater Only

Slow Current Only

Utilizes flowing water features with buffers of 500m from and 30m into selected water features.

Utilizes open water features with buffers of 500m from and 30m into selected water features.

Utilizes wet vegetation features with buffers of 60m from and unlimited into selected vegetation features.

Selected Map Units:

Functional Group	Map Unit Name
Anthropogenic	Bare Sand
Anthropogenic	Bare Soil
Beach	Unconsolidated Shore (Beach/Dune)
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 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	Florida Big Bend Salt-Brackish Tidal Marsh
Brackish Tidal Marsh & Wetland	Mississippi Sound Salt and Brackish Tidal Marsh
Brackish Tidal Marsh & Wetland	South Florida Everglades Sawgrass Marsh
Brackish Tidal Marsh & Wetland	South Florida Mangrove Swamp
Coastal Dune & Freshwater Wetland	Atlantic and Gulf Coastal Plain Interdunal Wetland
Freshwater Tidal Marsh & Wetland	Atlantic Coastal Plain Central Fresh-Oligohaline Tidal Marsh
Freshwater Tidal Marsh & Wetland	Atlantic Coastal Plain Embayed Region Tidal Freshwater Marsh
Freshwater Tidal Marsh & Wetland	Atlantic Coastal Plain Northern Fresh and Oligohaline Tidal Marsh
Freshwater Tidal Marsh & Wetland	Florida Big Bend Fresh-Oligohaline Tidal Marsh
Water	Open Water (Aquaculture)
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 Northern Wet Longleaf Pine Savanna and Flatwoods
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 Southern Wet Pine Savanna and Flatwoods
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 Florida Herbaceous Seep
Wetlands	Central Florida Pine Flatwoods
Wetlands	Central Interior Highlands and Appalachian Sinkhole and Depression Pond
Wetlands	East Gulf Coastal Plain Interior Shrub Bog
Wetlands	East Gulf Coastal Plain Jackson Plain Dry Flatwoods - Open Understory Modifier
Wetlands	East Gulf Coastal Plain Jackson Plain Dry Flatwoods - Scrub/Shrub Understory Modifier
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 Near-Coast Pine Flatwoods - Offsite Hardwood Modifier
Wetlands	East Gulf Coastal Plain Near-Coast Pine Flatwoods - Open Understory Modifier
Wetlands	East Gulf Coastal Plain Near-Coast Pine Flatwoods - Scrub/Shrub Understory 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	East Gulf Coastal Plain Southern Loblolly-Hardwood Flatwoods
Wetlands	East Gulf Coastal Plain Treeless Savanna and Wet Prairie
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 Bayhead Swamp
Wetlands	South Florida Cypress Dome
Wetlands	South Florida Dwarf Cypress Savanna
Wetlands	South Florida Freshwater Slough and Gator Hole
Wetlands	South Florida Hardwood Hammock
Wetlands	South Florida Pine Flatwoods

Wetlands	South Florida Pond-Apple/Popash Slough
Wetlands	South Florida Wet Marl Prairie
Wetlands	South Florida Willow Head
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	South-Central Interior/Upper Coastal Plain Wet Flatwoods
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: Burke, V. J., J. W. Gibbons, and J. L. Greene. 1994. Prolonged nesting forays by common mud turtles (*Kinosternon subrubrum*). *Am. Midl. Nat.* 131:190-195.

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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.