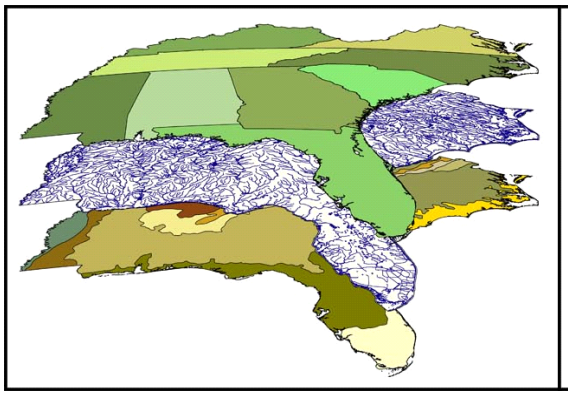


SOUTHEAST GAP ANALYSIS PROJECT

USGS gap BaSIC NARSAL

Species Modeling Report

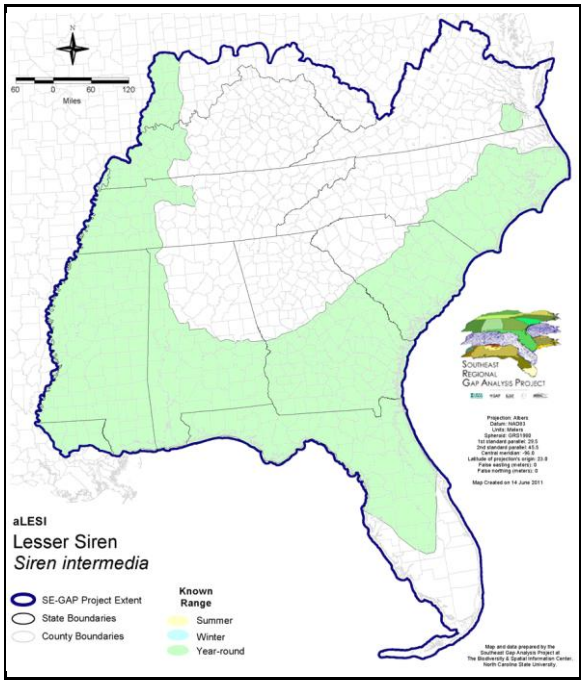
Lesser Siren

Siren intermedia

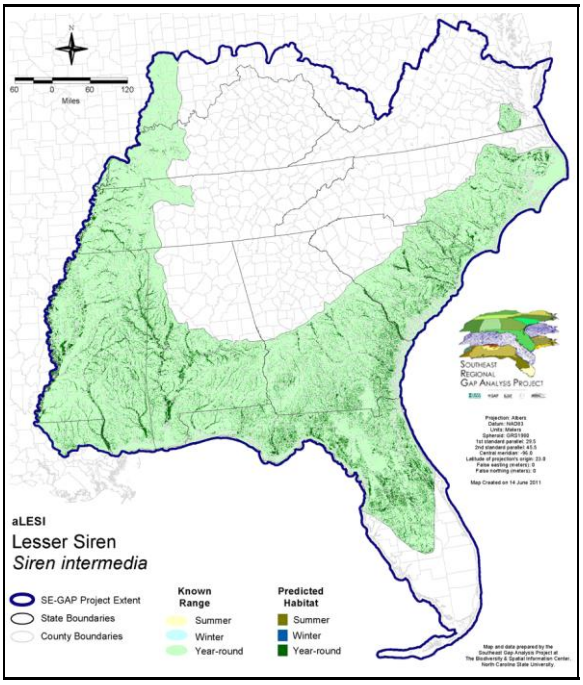
Taxa: Amphibian
Order: Caudata
Family: Sirenidae

SE-GAP Spp Code: **aLESI**
ITIS Species Code: 173736
NatureServe Element Code: AAAAG02010

KNOWN RANGE:



PREDICTED HABITAT:



Range Map Link: http://www.basic.ncsu.edu/segap/datazip/maps/SE_Range_aLESI.pdf
Predicted Habitat Map Link: http://www.basic.ncsu.edu/segap/datazip/maps/SE_Dist_aLESI.pdf
GAP Online Tool Link: http://www.gapserve.ncsu.edu/segap/segap/index2.php?species=aLESI
Data Download: http://www.basic.ncsu.edu/segap/datazip/region/vert/aLESI_se00.zip

PROTECTION STATUS:

Reported on March 14, 2011

Federal Status: ---

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

NS Global Rank: G5

NS State Rank: AL (S5), AR (S5), FL (SNR), GA (S5), IL (S4), IN (SNR), KY (S3S4), LA (S5), MI (SH), MO (S5), MS (S4?), NC (S3S4), OK (S2S3), SC (SNR), TN (S5), TX (S5), VA (S2S3)

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	29,154.3	< 1	4,691.9	< 1	0.0	0	0.0	0
Status 2	111,133.9	1	25,273.2	< 1	0.0	0	521.0	< 1
Status 3	638.1	< 1	202,552.3	2	2,099.2	< 1	86,832.5	1
Status 4	17.4	< 1	< 0.1	< 1	0.0	0	0.0	0
Total	140,943.7	2	232,517.4	3	2,099.2	< 1	87,353.6	1

	US Dept. of Energy		US Nat. Park Service		NOAA		Other Federal Lands	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	8,291.9	< 1	9.4	< 1	763.8	< 1
Status 2	0.0	0	1,848.9	< 1	2,733.8	< 1	0.0	0
Status 3	14,721.4	< 1	1,618.8	< 1	0.0	0	1,057.4	< 1
Status 4	0.0	0	0.0	0	0.0	0	0.0	0
Total	14,721.4	< 1	11,759.6	< 1	2,743.2	< 1	1,821.2	< 1

	Native Am. Reserv.		State Park/Hist. Park		State WMA/Gameland		State Forest	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	94.8	< 1	0.0	0	0.0	0
Status 2	0.0	0	613.7	< 1	243,063.2	3	0.0	0
Status 3	1,711.4	< 1	247,521.8	3	60,944.0	< 1	92,715.8	1
Status 4	0.0	0	< 0.1	< 1	6,503.8	< 1	4.5	< 1
Total	1,711.4	< 1	248,230.4	3	310,510.9	4	92,720.3	1

	State Coastal Reserve		ST Nat.Area/Preserve		Other State Lands		Private Cons. Easemt.	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	1,792.8	< 1	0.0	0	0.0	0
Status 2	6,126.0	< 1	25,171.3	< 1	0.0	0	470.4	< 1
Status 3	0.0	0	14,238.7	< 1	5,608.8	< 1	58,544.4	< 1
Status 4	0.0	0	0.0	0	702.7	< 1	0.0	0
Total	6,126.0	< 1	41,202.8	< 1	6,311.5	< 1	59,014.8	< 1

	Private Land - No Res.		Water		Overall Total	
	ha	%	ha	%	ha	%
Status 1	0.0	0	0.0	0	44,798.9	< 1
Status 2	0.0	0	0.0	0	416,955.4	5
Status 3	456.6	< 1	0.0	0	791,261.1	12
Status 4	6,969,640.2	82	21,751.5	< 1	7,005,106.6	83
Total	6,970,096.8	82	21,751.5	< 1	8,258,122.0	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: Lesser sirens inhabit a variety of permanent or semi-permanent habitats such as shallow water in swamps or weedy ponds, Carolina Bays, ditches, pools, lakes, marshes, and canals. They are sometimes found in rivers and streams (Bernard 1973). They occur in cypress and pinewoods (Bishop 1947 and Carr and Goin 1955). Lesser sirens require a microhabitat with bottom debris and aquatic vegetation. They withstand dry periods by burrowing into and encapsulating in mud. They are capable of limited overland movement between water bodies. In South Carolina, oviposition occurs during February-April. Fertilization is evidently is external (Sever et al. 1996, J. Morphol. 227:335-348). They lay a clutch averaging 200 eggs in winter (e.g., in Louisiana, Raymond 1991) or early spring in a small pocket or debris-covered cavity in bottom mud. The female guards the eggs. Sexually maturity is reached in 2 years. They are paedomorphic. Stacy Smith, 15April05

Hydrography Mask:

Freshwater Only

Slow Current Only

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

Utilizes open water features with buffers of 30m from and 30m 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
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	Florida Big Bend Fresh-Oligohaline Tidal Marsh
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 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 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 Florida Herbaceous Pondshore
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 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	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 Coastal Plain Blackwater River Floodplain Forest
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

CITATIONS:

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.

Bishop, S. C. 1947. Handbook of Salamanders: The Salamanders of the United States, of Canada, and of Lower California. Ithica, NY: Comstock Publishing Co..

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.

Carr, A. F., Jr., and C. J. Goin. 1955. A guide to the reptiles, amphibians and fresh-water fishes of Florida. Univ. Florida Press, Gainesville. 341pp.

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.

Flores Villela, O., and R. A. Brandon. 1992. SIREN LACERTINA (Amphibia:Caudata) in northeastern Mexico and southern Texas. Annals of Carnegie Museum 61(4):289-291.

Garrett, J. M., and D. G. Barker. 1987. A Field Guide to Reptiles and Amphibians of Texas. Texas Monthly Press, Austin, Texas. 225 pp.

Gehlbach, F. R., and S. E. Kennedy. 1978. Population ecology of a highly productive aquatic salamander (SIREN INTERMEDIA). Southwest. Nat. 23:423-430.

Johnson, T. R. 1977. The amphibians of Missouri. Univ. Kansas Mus. Nat. Hist., Pub. Ed. Ser. 6. ix + 134 pp.

Martof, B. S. 1973. Siren intermedia. Cat. Am. Amph. Rep.127.1-127.2.

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.

Raymond, L. R. 1991. Seasonal activity of SIREN INTERMEDIA in northwestern Louisiana (Amphibia:Sirenidae). Southwest. Nat. 36:144-147.

Sever, D. M., Rania, L. C., and J. D. Krenz. 1996. Reproduction of the salamander Siren intermedia Le Conte with especial reference to oviducal anatomy and evidence for sperm storage and internal fertilization. J. Morphol. 227:335--348.

Sugg, D. W., et al. 1988. Morphological variation in a population of the salamander, SIREN INTERMEDIA NETTINGI. J. Herpetol. 22:243-247.

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.