



SOUTHEAST GAP ANALYSIS PROJECT



Species Modeling Report

Cinereus Shrew

Sorex cinereus

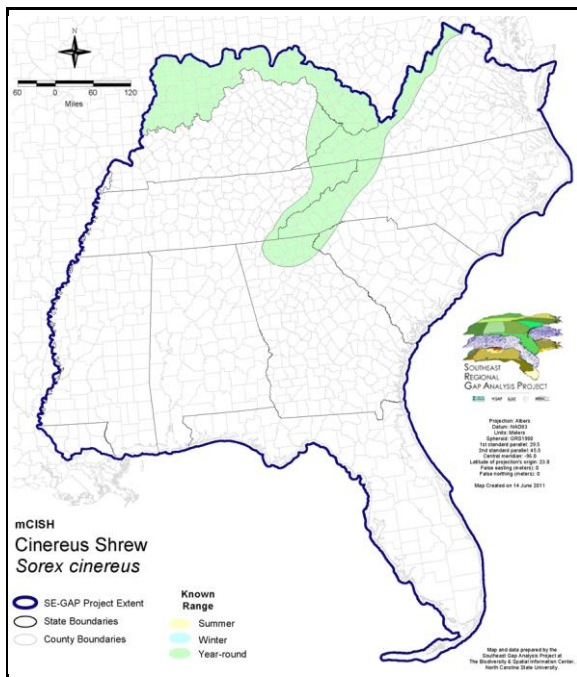
Taxa: Mammalian
Order: Soricomorpha
Family: Soricidae

SE-GAP Spp Code: **mCISH**

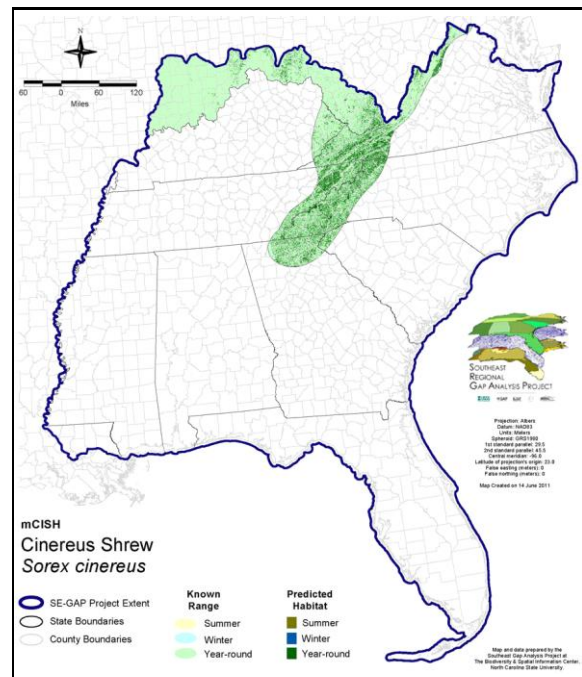
ITIS Species Code: 179929

NatureServe Element Code: AMABA01010

KNOWN RANGE:



PREDICTED HABITAT:



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

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

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

Data Download: http://www.basic.ncsu.edu/segap/datazip/region/vert/mCISH_se00.zip

PROTECTION STATUS:

Reported on March 14, 2011

Federal Status: ---

State Status: KY (S), NJ (S), NY (U), RI (Not Listed), TN (D), UT (None), BC (4 (2005)), QC (Non suivie)

NS Global Rank: G5

NS State Rank: AK (S5), CO (S5), CT (S5), DE (S5), GA (S2S3), IA (SNR), ID (S5), IL (S5), IN (S4), KY (S3), MA (S5), MD (S5), ME (S5), MI (S5), MN (S5), MT (S5), NC (S4), ND (SNR), NH (S5), NJ (S4), NM (S2), NY (S5), OH (S5), PA (S5), RI (S5), SC (SNR), SD (S5), TN (S4), UT (S3?), VA (S5), VT (S5), WA (S4S5), WI (S5), WV (S5), WY (S5), AB (S5), BC (S5), LB (S5), MB (S5), NB (S5), NF (SNA), NS (S5), NT (SNR), NU (SNR), ON (S5), PE (S5), QC (S5), SK (S5), YT (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	0.0	0	7,889.8	< 1	0.0	0	0.0	0
Status 2	0.0	0	42,561.6	2	0.0	0	0.0	0
Status 3	0.0	0	269,202.7	11	2,908.0	< 1	719.1	< 1
Status 4	30.2	< 1	0.0	0	0.0	0	0.0	0
Total	30.2	< 1	319,654.1	13	2,908.0	< 1	719.1	< 1
	US Dept. of Energy		US Nat. Park Service		NOAA		Other Federal Lands	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	76,539.0	3	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	8,267.1	< 1	0.0	0	0.0	0
Status 4	0.0	0	0.0	0	0.0	0	0.0	0
Total	0.0	0	84,806.1	3	0.0	0	0.0	0
	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	2,427.5	< 1	10,871.5	< 1	0.0	0
Status 3	4,808.5	< 1	6,772.9	< 1	2,822.9	< 1	1,928.8	< 1
Status 4	0.0	0	0.0	0	0.0	0	0.0	0
Total	4,808.5	< 1	9,200.3	< 1	13,694.4	< 1	1,928.8	< 1
	State Coastal Reserve		ST Nat.Area/Preserve		Other State Lands		Private Cons. Easemt.	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	338.1	< 1	0.0	0	0.0	0
Status 2	0.0	0	1,719.4	< 1	1.4	< 1	0.0	0
Status 3	0.0	0	0.0	0	31.6	< 1	0.0	0
Status 4	0.0	0	0.0	0	93.3	< 1	0.0	0
Total	0.0	0	2,057.5	< 1	126.4	< 1	0.0	0
	Private Land - No Res.		Water		Overall Total			
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	0.0	0	84,766.9 3			
Status 2	0.0	0	0.0	0	57,581.4 2			
Status 3	0.0	0	0.0	0	297,461.6 23			
Status 4	1,727,609.9	71	541.3	< 1	1,728,244.5 71			
Total	1,727,609.9	71	541.3	< 1	2,168,054.4 100			

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: Cinereus shrews are known to occur in a variety of habitats from pastures and old fields to dense forest, excluding areas with very little or no vegetation. They use a greater variety of habitats than any other Sorex and typically are the most abundant Sorex in moist deciduous, coniferous, or mixed forests (Webster et al. 1985). They prefer moist areas with a cover of leaf litter, mossy rocks and logs. This species will also use sphagnum bogs, swamps, and meadows. In Nova Scotia, diet indicated that much foraging was done among wrack on beaches (Stewart et al. 1989). Home Ranges do not exceed 1/4 acre (Brown 1997). Their nest sites are typically in shallow burrows or above ground in logs and stumps. The breeding season may last from March through September (Stewart et al. 1989). There are usually two to three litters. Gestation lasts 18 days and litter size is 2-10 (average around 7). Young are weaned in 3 weeks and are sexually mature in 20-26 weeks. Stacy Smith, 12June05

Elevation Mask: > 274m and < 2500m

Selected Map Units:

Functional Group	Map Unit Name
Anthropogenic	Deciduous Plantations
Anthropogenic	Evergreen Plantations
Anthropogenic	Pasture/Hay
Anthropogenic	Successional Grassland/Herbaceous
Anthropogenic	Successional Grassland/Herbaceous (Other)
Anthropogenic	Successional Grassland/Herbaceous (Utility Swath)
Anthropogenic	Successional Shrub/Scrub (Clear Cut)
Anthropogenic	Successional Shrub/Scrub (Other)
Anthropogenic	Successional Shrub/Scrub (Utility Swath)
Bald	Central Appalachian Montane Rocky Bald - Herbaceous Modifier
Bald	Central Appalachian Montane Rocky Bald - Shrub Modifier
Bald	Southern Appalachian Grass and Shrub Bald - Herbaceous Modifier
Bald	Southern Appalachian Grass and Shrub Bald - Shrub Modifier
Forest/Woodland	Appalachian Hemlock-Hardwood Forest
Forest/Woodland	Central and Southern Appalachian Montane Oak Forest
Forest/Woodland	Central and Southern Appalachian Northern Hardwood Forest
Forest/Woodland	Central and Southern Appalachian Spruce-Fir Forest
Forest/Woodland	East Gulf Coastal Plain Northern Dry Upland Hardwood Forest - Offsite Pine Modifier
Forest/Woodland	Southern and Central Appalachian Cove Forest
Forest/Woodland	Southern Appalachian Montane Pine Forest and Woodland
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	North-Central Appalachian Acidic Swamp
Wetlands	North-Central Appalachian Seepage Fen
Wetlands	Southern and Central Appalachian Bog and Fen
Wetlands	Southern Appalachian Seepage Wetland

- CITATIONS:** Armstrong, D. M. 1987. Rocky Mountain mammals. Revised edition. Colorado Associated Univ. Press, Boulder. x + 223 pp.
- Baker, Rollin H. 1983. Michigan mammals. Michigan State University Press. 642 pp.
- Banfield, A.W.F. 1974. The mammals of Canada. University of Toronto Press, Toronto.
- Bellocq, M. I., J. F. Bendell, and B. I. Cadogan. 1992. Effects of the insecticide BACILLUS THURINGIENSIS on SOREX CINEREUS (masked shrew) populations, diet, and prey selection in a jack pine plantation in northern Ontario. Can. J. Zool. 70:505-510.
- Brown, L. N. 1997. A guide to the mammals of the southeastern United States. University of Tennessee Press, Knoxville. xiv + 236 pp.

- Buckner, C.H. 1966. Populations and ecological relationships of shrews in tamarack bogs of southeastern Manitoba. *Jour. Mamm.* 47(2):181-194.
- Churchfield, S. 1992. *The Natural History of Shrews*. Cornell University Press, Ithaca, New York. 192 pp.
- Forsyth, D.J. 1976. A field study of growth and development of nestling masked shrews (*Sorex cinereus*). *J. Mammalogy*, 57(4):708-721.
- Frey, J. K. 1992. Response of a mammalian faunal element to climatic changes. *J. Mamm.* 73:43-50.
- George, S. B. 1988. Systematics, historical biogeography, and evolution of the genus SOREX. *J. Mammalogy* 69:443-461.
- Godin, A.J. 1977. *Wild Mammals of New England*. Johns Hopkins University Press, Baltimore. 304 pp.
- Gould, E., N.C. Negus, and A. Novick. 1964. Evidence for echolocation in shrews. *J. Exp. Zool.* 156:19-38.
- Hall, E. R. 1981. *The Mammals of North America*. Second edition. 2 Volumes. John Wiley and Sons, New York, New York. 1181 p.
- Hamilton, William J., Jr., and John O. Whitaker, Jr. 1979. *Mammals of the eastern United States*. Cornell Univ. Press, Ithaca, New York. 346 pp.
- Jackson, H. H. T. 1928. A taxonomic review of the American long-tailed shrews (genera SOREX and MICROSOREX). *North American Fauna* 51:1-238.
- Lee, D. S., L. B. Funderburg Jr., and M. K. Clark. 1982. A distributional survey of North Carolina mammals. *Occasional Papers of the North Carolina Biological Survey*, No. 1982-10. North Carolina State. Mus. Nat. Hist., Raleigh, North Carolina. 72 pp.
- Schwartz, Charles W., and Elizabeth R. Schwartz. 1981. *The wild mammals of Missouri*. University of Missouri Press, Columbia. 356 pp.
- Stewart, D. T., A. J. Baker, and S. P. Hindocha. 1993. Genetic differentiation and population structure in SOREX HAYDENI and S. CINEREUS. *J. Mamm.* 74:21-32.
- Stewart, D. T., and A. J. Baker. 1992. Genetic differentiation and biogeography of the masked shrew in Atlantic Canada. *Can. J. Zool.* 70:106-114.
- Stewart, D. T., T. B. Herman, and T. Teferi. 1989. Littoral feeding in a high-density insular population of SOREX CINEREUS. *Can. J. Zool.* 67:2074-2077.
- van Zyll de Jong, C. G. 1983. *Handbook of Canadian Mammals*. 1. Marsupials and insectivores. *Nat. Mus. Canada*, Ottawa. 212 pp.
- van Zyll de Jong, C. G., and G. L. Kirkland, Jr. 1989. A morphometric analysis of the SOREX CINEREUS group in central and eastern North America. *J. Mamm.* 70:110-122.
- Volobouev, V. T., and C. G. van Zyll de Jong. 1994. Chromosome banding analysis of two shrews of the CINEREUS group: SOREX HAYDENI and SOREX CINEREUS (Insectivora, Soricidae). *Can. J. Zool.* 72:958-964.
- Webster, W. D., J. F. Parnell and W. C. Biggs Jr. 1985. *Mammals of the Carolinas, Virginia, and Maryland*. The University of North Carolina Press, Chapel Hill, NC.
- Whitaker, J.O. Jr. and W.J. Hamilton, Jr. 1998. *Mammals of the eastern United States*. Cornell Univ. Press, Ithaca, New York. 583 pp.
- Wrigley, R.F., J.E. DuBois, and H.W. Copland. 1979. Habitat, abundance and distribution of six species of shrews in Manitoba. *J. Mamm.* 60:505-520.

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.