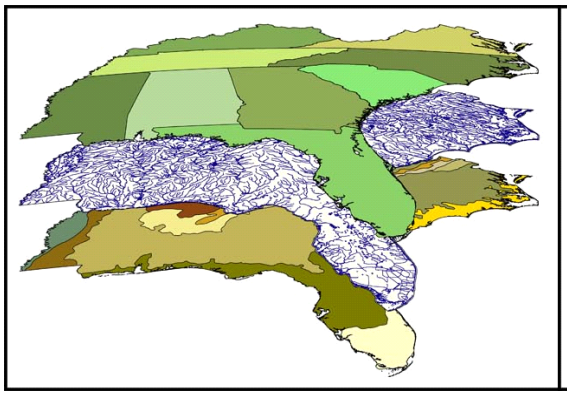


SOUTHEAST GAP ANALYSIS PROJECT

USGS | gap | BaSIC | NARSAL

Species Modeling Report

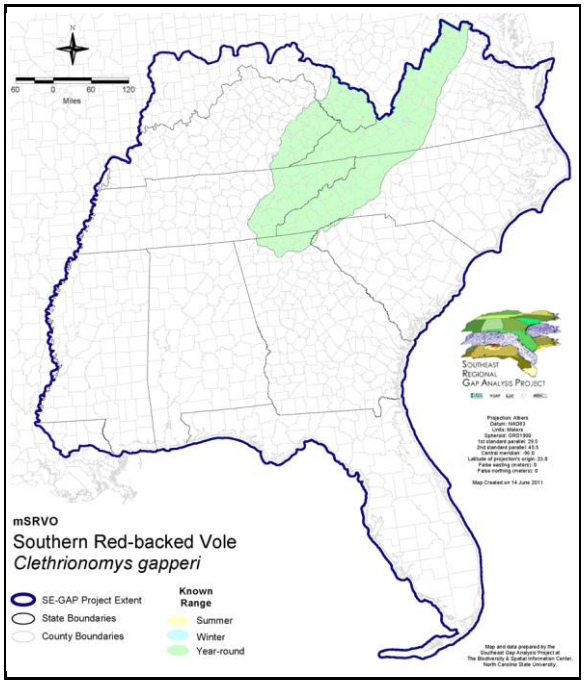
Southern Red-backed Vole

Clethrionomys gapperi

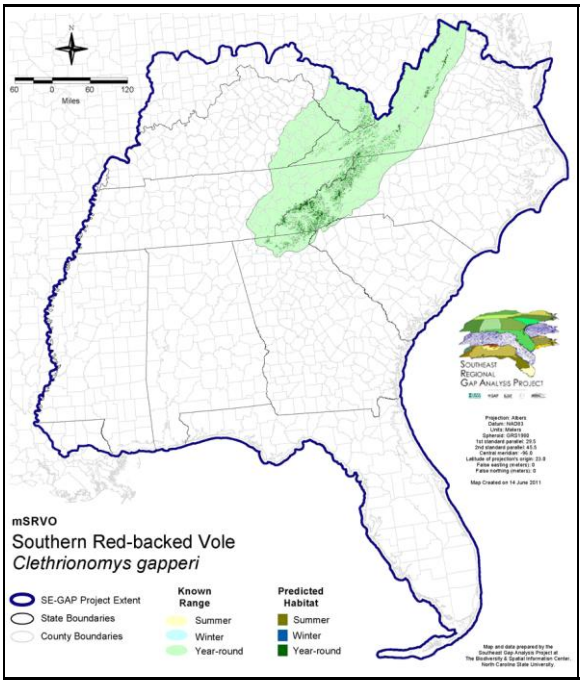
Taxa: Mammalian
Order: Rodentia
Family: Cricetidae

SE-GAP Spp Code: **mSRVO**
ITIS Species Code: 180294
NatureServe Element Code: AMAFF09020

KNOWN RANGE:



PREDICTED HABITAT:



Range Map Link: http://www.basic.ncsu.edu/segap/datazip/maps/SE_Range_mSRVO.pdf
Predicted Habitat Map Link: http://www.basic.ncsu.edu/segap/datazip/maps/SE_Dist_mSRVO.pdf
GAP Online Tool Link: http://www.gapserve.ncsu.edu/segap/segap/index2.php?species=mSRVO
Data Download: http://www.basic.ncsu.edu/segap/datazip/region/vert/mSRVO_se00.zip

PROTECTION STATUS:

Reported on March 14, 2011

Federal Status: ---

State Status: IA (E), KY (N), NJ (S), NY (U), OH (SC), RI (Not Listed), UT (None), BC (4 (2005)), QC (Non suivie), SK (NIAC)

NS Global Rank: G5

NS State Rank: AK (S4), AZ (S3), CO (S5), CT (S5), GA (S3S4), IA (S2), ID (S5), KY (S3), MA (S5), MD (S5), ME (S5), MI (S5), MN (SNR), MT (S4), NC (S4), ND (SNR), NH (S5), NJ (S4), NM (S3), NY (S5), OH (SH), OR (S4?), PA (S5), RI (S4), SC (S2S3), SD (S4), TN (S4), UT (S2S3), VA (S5), VT (S5), WA (S5), WI (S5), WV (S4), 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 (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	0.0	0	6,640.6	< 1	0.0	0	0.0	0
Status 2	0.0	0	42,034.8	4	0.0	0	0.0	0
Status 3	0.0	0	205,353.0	21	0.0	0	0.0	0
Status 4	0.0	0	0.0	0	0.0	0	0.0	0
Total	0.0	0	254,028.3	26	0.0	0	0.0	0

	US Dept. of Energy		US Nat. Park Service		NOAA		Other Federal Lands	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	87,422.9	9	0.0	0	0.0	0
Status 2	0.0	0	548.2	< 1	0.0	0	0.0	0
Status 3	0.0	0	10,425.4	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	98,396.5	10	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	923.7	< 1	7,970.8	< 1	0.0	0
Status 3	3,760.9	< 1	3,872.4	< 1	1,678.9	< 1	1,780.3	< 1
Status 4	0.0	0	0.0	0	8.6	< 1	0.0	0
Total	3,760.9	< 1	4,796.1	< 1	9,658.2	< 1	1,780.3	< 1

	State Coastal Reserve		ST Nat.Area/Preserve		Other State Lands		Private Cons. Easemt.	
	ha	%	ha	%	ha	%	ha	%
Status 1	0.0	0	334.7	< 1	0.0	0	0.0	0
Status 2	0.0	0	1,348.5	< 1	0.0	0	0.0	0
Status 3	0.0	0	0.0	0	25.6	< 1	0.0	0
Status 4	0.0	0	0.0	0	13.1	< 1	0.0	0
Total	0.0	0	1,683.2	< 1	38.6	< 1	0.0	0

	Private Land - No Res.		Water		Overall Total	
	ha	%	ha	%	ha	%
Status 1	0.0	0	0.0	0	94,398.1	10
Status 2	0.0	0	0.0	0	52,825.9	5
Status 3	0.0	0	0.0	0	226,896.5	45
Status 4	389,158.9	40	3.6	< 1	389,192.7	40
Total	389,158.9	40	3.6	< 1	763,313.1	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: This species is quite abundant in cool, moist montane forests of the southern Appalachians, typically at elevations above 3400ft (Linzey and Linzey 1971).
High elevation montane boreal forests of coniferous spruce and fir trees and the ecotone areas where these boreal forests mix with northern hardwood (birch, beech and maple trees) forests are the haunts of this species (Whitaker and Hamilton 1998). Upper-mid elevation hemlock forests and bogs, where sphagnum moss dominates as ground cover, are also used to a great extent (Brown 1997, Whitaker and Hamilton 1998). Moss-covered rocky or heavy log-fall areas, or damp slopes, densely shaded with evergreen shrubs (rhododendron) within these forest types appear to contain the highest population densities. They are also found in grassy woodlands and grassy mountain meadows and heath balds (Linzey and Linzey 1971, Webster et al. 1985). At lower-mid mountain elevations, some bogs and other cool wet forested situations, such as rich cove forests and densely vegetated creeks, are occasionally used as well (Linzey and Linzey 1971, Lee et al. 1982). It has also been reported in cut areas with brush piles and debris (Whitaker and Hamilton 1998). They construct nests of grass, leaves and moss in shallow burrows or rock crevices (Lowman 1975).

Quoted from NC habitat notes - K. Cook 5-30-05

Customized Model: Evergreen and deciduous plantations should be selected only for the landforms. Ignore landforms for other habitat types.

Elevation Mask: > 670m and < 2500m

Selected Map Units:

Functional Group	Map Unit Name
Anthropogenic	Deciduous Plantations
Anthropogenic	Evergreen Plantations
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
Forest/Woodland	Southern Piedmont Mesic Forest
Wetlands	Central Appalachian Floodplain - Forest Modifier
Wetlands	Central Appalachian Riparian - Forest Modifier
Wetlands	Central Interior Highlands and Appalachian Sinkhole and Depression Pond
Wetlands	Cumberland Riverscour
Wetlands	North-Central Appalachian Seepage Fen
Wetlands	South-Central Interior Small Stream and Riparian
Wetlands	Southern and Central Appalachian Bog and Fen
Wetlands	Southern Appalachian Seepage Wetland
Wetlands	Southern Piedmont Seepage Wetland
Wetlands	Southern Piedmont Small Floodplain and Riparian Forest

CITATIONS:

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.

Blair, W.F. 1941. Same data on home ranges and general life history of the short-tailed shrew, redbacked mouse and wood-land jumping mouse in northern Michigan. Am. Midl. Nat. 25(3):681-685.

Brown, L. N. 1997. A guide to the mammals of the southeastern United States. University of Tennessee Press, Knoxville. xiv + 236 pp.

Butsch, R.S. 1954. The life history and ecology of the red-backed vole Clethrionyms gapperi Vigors in Minnesota. Univ. Michigan, unpubl. Ph.D. dissertation, 161 pp.

Godin, A.J. 1977. Wild Mammals of New England. Johns Hopkins University Press, Baltimore. 304 pp.

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.

Jones, J. K., Jr., et al. 1992. Revised checklist of North American mammals north of Mexico, 1991. Occas. Pap. Mus., Texas Tech Univ. (146):1-23.

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.

Linzey, Alicia V., & Donald W. Linzey. 1971. Mammals of the Great Smoky Mountains National Park. The University of Tennessee Press, Knoxville, Tennessee. 114 p.

Lowman, G. E. 1975. A survey of endangered, threatened, rare, status-undetermined, peripheral, unique mammals of thes.e. National Forests and Grasslands. USDA Forest Service Contract 38-2601. 121 pp.

Maser, C., and Z. Maser. 1988. Mycophagy of red-backed voles, CLETHRIONOMYS CALIFORNICUS and C. GAPPERI. Great Basin Nat. 48:269-273.

Merritt, J.F. 1981. Clethrionomys gapperi. Am. Soc. Mamm.,Mammalian Species No. 146. 9 pp.

Merritt, J.F. and J.M. Merritt. 1978. Population ecology and energy relationships of Clethrionomys gapperi in a Colorado subalpine forest. J. Mamm. 59(3):576-598.

Nordyke, K. A., and S. W. Buskirk. 1991. Southern red-backed vole, CLETHRIONOMYS GAPPERI, populations in relation to stand succession and old-growth character in the central Rocky Mountains. Can. Field-Nat. 105:330-334.

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.

Wilson, D. E., and D. M. Reeder (editors). 1993. Mammal Species of the World:a Taxonomic and Geographic Reference. Second Edition. Smithsonian Institution Press, Washington, DC. xviii + 1206 pp.

Yahner, R. H. 1992. Dynamics of a small mammal community in a fragmented forest. Am. Midl. Nat. 127:381-391.

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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.