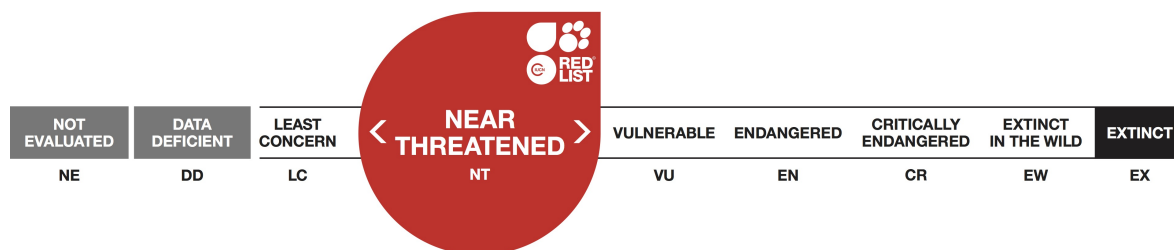


## *Microtus cabrerae*, Cabrera's Vole

Assessment by: Fernandes, M., Pita, R. & Mira, A.



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**Citation:** Fernandes, M., Pita, R. & Mira, A. 2019. *Microtus cabrerae*. The IUCN Red List of Threatened Species 2019: e.T13418A90931498. <http://dx.doi.org/10.2305/IUCN.UK.2019-1.RLTS.T13418A90931498.en>

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## Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Rodentia	Cricetidae

**Taxon Name:** *Microtus cabrerae* Thomas, 1906

### Common Name(s):

- English: Cabrera's Vole
- French: Campagnol De Cabrera
- Spanish: Topillo De Cabrera

### Taxonomic Notes:

Its phylogenetic position was studied by Jaarola *et al.* (2004). It is the sole extant representative of the subgenus *Iberomys*, which has been suggested to be a separate genus from *Microtus* (Cuenca-Bescós *et al.* 2014).

## Assessment Information

**Red List Category & Criteria:** Near Threatened [ver 3.1](#)

**Year Published:** 2019

**Date Assessed:** April 4, 2016

### Justification:

This species has an area of occupancy that is small and potentially in decline (Pita *et al.* 2014). The area of occupancy is likely to be close to the 2,000 km<sup>2</sup> threshold for Vulnerable under criterion B2 and therefore the species is assessed as Near Threatened.

### Previously Published Red List Assessments

2008 – Near Threatened (NT)

<http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T13418A3915236.en>

1996 – Lower Risk/near threatened (LR/nt)

## Geographic Range

### Range Description:

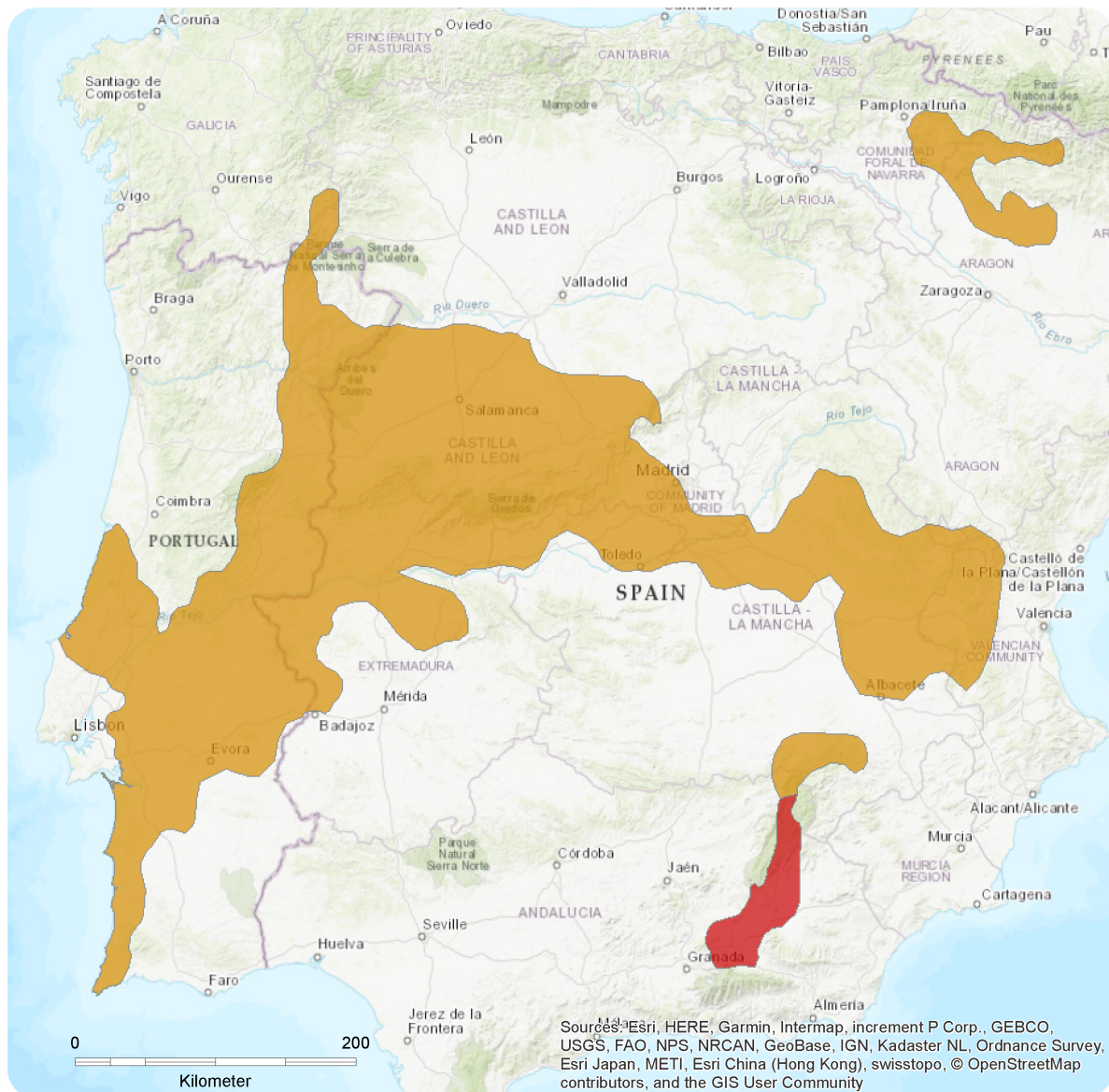
*Microtus cabrerae* is endemic to the Iberian peninsula (Portugal and Spain), where it has a fragmented range (Palomo 1999, Shenbrot and Krasnov 2005). It occurs from 0 to 1,500 m, although it is most common below 1,200 m (Palomo *et al.* 2007, Mira *et al.* 2008, Pita *et al.* 2014). Four main population nuclei have been identified by Garrido-Garcia *et al.* (2013).

### Country Occurrence:

**Native:** Portugal; Spain

# Distribution Map

*Microtus cabreræ*



## Range

- Extant (resident)
- Extinct

## Compiled by:

IUCN (International Union for Conservation of Nature)



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.



## Population

Populations are typically patchily distributed, and subpopulations are mostly small, isolated, and subject to major inter-annual fluctuations (Palomo *et al.* 2007, Pita *et al.* 2007). These subpopulations are usually inhabited by only a few individuals, often an adult couple and its offspring. Population densities are moderate by comparison with other arvicoline rodents, varying between 17 and 250 individuals per hectare (Landette-Castillejos *et al.* 2000, Fernandez-Salvador *et al.* 2005), but typically below *ca* 100 individuals per hectare (e.g., Fernandez-Salvador *et al.* 2005, Pita *et al.* 2014). Subfossil remains have been found outside the species' current distribution, suggesting a range contraction (Palomo 1999, Garrido-García and Soriguer-Escofet 2012, Laplana and Sevilla 2013), and it is considered that the species occupies a relict distribution (Palomo *et al.* 2007). Ecological niche models show that there is likely to be a future decrease in the species' range (Mestre *et al.* 2015).

**Current Population Trend:** Decreasing

## Habitat and Ecology (see Appendix for additional information)

It occurs in pastures, fields and open clearings in woodland, tending to prefer damper areas than the common vole. It is often found in proximity to water, such as near small streams and ponds (Palomo 1999, Pita *et al.* 2007), agricultural field margins, and on road verges (Santos *et al.* 2006, Pita *et al.* 2006). Wet meadows and perennial grassland communities are the most favourable microhabitats for this species (Santos *et al.* 2006), where areas with shallow flooding, abundant grass cover and high rush cover are preferred (Luque-Larena and López 2007, Pita *et al.* 2011).

**Systems:** Terrestrial

## Threats (see Appendix for additional information)

Climate change and habitat fragmentation through agricultural intensification, including overgrazing, have presumably contributed to population declines and range contractions over the last few decades (Palomo 1999, Garrido-García and Soriguer-Escofet 2012, Pita *et al.* 2014). There is increased pressure on streams and other wetland areas the species occurs in.

## Conservation Actions (see Appendix for additional information)

The species occurs in protected areas in both Portugal and Spain. It is protected under the Bern Convention (Appendix II) and the EU Habitats and Species Directive (Annex II and Annex IV). It is classified as “Vulnerable” in the Spanish Red Book of Terrestrial Mammals (Palomo *et al.* 2007), and in the Portuguese Red Book of Terrestrial Vertebrates (Cabral *et al.* 2005).

## Credits

**Assessor(s):** Fernandes, M., Pita, R. & Mira, A.

**Reviewer(s):** Amori, G.

**Facilitator(s) and  
Compiler(s):** Kennerley, R.

## Bibliography

- Cabral, M.J., Almeida, J., Almeida, P.R., Dellinger, T., Ferrand de Almeida, N., Oliveira, M. E., Palmeirim, J.M., Queiroz, A.I., Rogado, L. and Santos-Reis, M. (eds). 2005. *Livro Vermelho dos Vertebrados de Portugal*. Instituto da Conservação da Natureza, Lisboa.
- Garrido-García, J.A. and Soriguer-Escofet, R.C. 2012. Cabrera's vole *Microtus cabreræ* Thomas, 1906 and the subgenus *Iberomys* during the Quaternary: evolutionary implications and conservation. *Geobios* 45: 437-444.
- Garrido-García, J., Rosário, I., Gisbert, J., García-Perea, R., Cordero, A., López-Alabau, A., Mathias, M., Mira, A., Pita, R., Santos, S., Sendra-Pérez, I., Vicente, V., and Soriguer, R. 2013. Revisión a nivel ibérico de la distribución del topillo de Cabrera o iberón, *Iberomys cabreræ* (Thomas, 1906). *Galemys, Spanish Journal of Mammalogy* 25: 35-49.
- IUCN. 2019. The IUCN Red List of Threatened Species. Version 2019-1. Available at: [www.iucnredlist.org](http://www.iucnredlist.org). (Accessed: 21 March 2019).
- Jaarola, M., Martínková, N., Gündüz, Ü., Brunhoff, C., Zima, J., Nadachowski, A., Amori, G., Bulatova, N. S., Chondropoulos, B., Fraguadakis-Tsolis, S., González-Esteban, J., López-Fuster, M. J., Kandaurov, A. S., Kefelioglu, H., da Luz Mathias, M., Villatei, I. and Searle, J. B. 2004. Molecular phylogeny of the speciose vole genus *Microtus* (Arvicolinae, Rodentia) inferred from mitochondrial DNA sequences. *Molecular Phylogenetics and Evolution* 33: 647-663.
- Laplana, C., and Sevilla, P. 2013. Documenting the biogeographic history of *Microtus cabreræ* through its fossil record. *Mammal Review* 43: 309-322.
- Luque-Larena, J.J. and López, P. 2007. Microhabitat use by wild-ranging Cabrera voles *Microtus cabreræ* as revealed by live trapping. *European Journal of Wildlife Research* 53: 221-225.
- Mestre, F., Pita, R., Paupério, J., Martins, F.M.S., Alves, P.C., Mira, A., and Beja, P. 2015. Combining distribution modelling and non-invasive genetics to improve range shift forecasting. *Ecological Modelling* 297: 171-179.
- Mira, A., Marques C.C., Santos, S.M., Rosário, I., and Mathias, M.L. 2008. Environmental determinants of the distribution of the Cabrera vole (*Microtus cabreræ*) in Portugal: implications for conservation. *Mammalian Biology* 74: 102-110.
- Palomo, L. J. 1999. *Microtus cabreræ*. In: A. J. Mitchell-Jones, G. Amori, W. Bogdanowicz, B. Kryštufek, P. J. H. Reijnders, F. Spitzenberger, M. Stubbe, J. B. M. Thissen, V. Vohralík and J. Zima (eds), *The Atlas of European Mammals*, Academic Press, London, UK.
- Palomo, L.J., Gisbert, J., and Blanco J.C. 2007. Atlas y Libro rojo de los mamíferos terrestres de España. Dirección General para la Biodiversidad, Sociedad Española para la Conservación y Estudio de los Mamíferos - Asociación Española para la Conservación y el Estudio de los Murciélagos, Madrid, Spain.
- Pita, R., Beja, P. and Mira, A. 2007. Spatial population structure of the Cabrera vole in Mediterranean farmland: The relative role of patch and matrix effects. *Biological Conservation* 134: 383-392.
- Pita, R., Mira, A. and Beja, P. 2006. Conserving the Cabrera vole, *Microtus cabreræ*, in intensively used Mediterranean landscapes. *Agriculture, Ecosystems and Environment* 115: 1-5.
- Pita, R., Mira, A., and Beja, P. 2011. Assessing habitat differentiation between coexisting species: the role of spatial scale. *Acta Oecologica* 37: 124-132.
- Pita, R., Mira, A., and Beja, P. 2014. *Microtus cabreræ* (Rodentia: Cricetidae) . *Mammalian Species* 46:

48-70.

Santos, S., Simões, M. P., Mathias, M. L. and Mira, A. 2006. Vegetation analysis in colonies of an endangered rodent, the Cabrera vole (*Microtus cabrerae*), in southern Portugal. *Ecological research* 21: 197-207.

Shenbrot, G.I. and Krasnov, B.R. 2005. *An Atlas of the Geographic Distribution of the Arvicoline Rodents of the World (Rodentia, Muridae: Arvicolinae)*. Pensoft Publishers, Sofia.

## Citation

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# Appendix

## Habitats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Habitat	Season	Suitability	Major Importance?
1. Forest -> 1.4. Forest - Temperate	-	Marginal	-
4. Grassland -> 4.4. Grassland - Temperate	-	Suitable	-
5. Wetlands (inland) -> 5.8. Wetlands (inland) - Seasonal/Intermittent Freshwater Marshes/Pools (under 8ha)	-	Suitable	-
14. Artificial/Terrestrial -> 14.2. Artificial/Terrestrial - Pastureland	-	Suitable	-

## Threats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Threat	Timing	Scope	Severity	Impact Score
1. Residential & commercial development -> 1.1. Housing & urban areas	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
11. Climate change & severe weather -> 11.1. Habitat shifting & alteration	Ongoing	-	-	-
11. Climate change & severe weather -> 11.2. Droughts	Ongoing	-	-	-
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.3. Agro-industry farming	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.3. Agro-industry grazing, ranching or farming	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
7. Natural system modifications -> 7.2. Dams & water management/use -> 7.2.8. Abstraction of ground water (unknown use)	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation		
8. Invasive and other problematic species, genes & diseases -> 8.2. Problematic native species/diseases -> 8.2.2. Named species ( <i>Arvicola sapidus</i> )	Ongoing	-	-	-
	Stresses:	2. Species Stresses -> 2.3. Indirect species effects -> 2.3.2. Competition		



## Conservation Actions in Place

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

<b>Conservation Actions in Place</b>
In-Place Land/Water Protection and Management
Conservation sites identified: Yes, over entire range

## Conservation Actions Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

<b>Conservation Actions Needed</b>
1. Land/water protection -> 1.1. Site/area protection

## Research Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

<b>Research Needed</b>
3. Monitoring -> 3.1. Population trends

## Additional Data Fields

<b>Distribution</b>
Estimated extent of occurrence (EOO) (km <sup>2</sup> ): 394730
Lower elevation limit (m): 0
Upper elevation limit (m): 1500
<b>Population</b>
Population severely fragmented: Unknown



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