

## README FILE FOR “TOPERAS: Molehill counts in Montaña Palentina (Spain)”

### GENERAL INFORMATION

1. Title of Dataset:

TOPERAS: Molehill counts in Montaña Palentina (Spain).

2. Authors:

Jacinto Román, Fernando Jubete, Eloy Revilla, Juan Carlos Rivilla, Francisco Palomares, Fermín Urra, Javier Calzada, Miguel Delibes

3. Date of data collection:

start=2016-09-30; end=2023-09-28

4. Date of data publication on repository: 2024-01-09

5. Geographic location of data collection <latitude, longitude, or city/region, Country, continent as appropriate>:

Montaña Palentina Natural Park, Palencia, Spain; lat min=42.91, lat max=43.04 ; long min=-4.55, long max=-4.41

6. Information about funding sources that supported the collection of the data (including research project reference/acronym):

This study was partially supported by a contract of collaboration between Fundación Reina Sofia and CSIC, M.Torres Diseños Industriales SAU and Jaguar Land Rover España.

7. Recommended citation for this dataset:

Román, Jacinto; Jubete, Fernando; Revilla, Eloy; Rivilla, Juan C.; Palomares, Francisco; Urra, Fermín; Calzada, Javier; Delibes, M.; 2024; TOPERAS: Molehill counts in Montaña Palentina (Spain) [Dataset]; DIGITAL.CSIC; <https://doi.org/10.20350/digitalCSIC/16069>

### SHARING/ACCESS/CONTEXT INFORMATION

1. Usage Licenses/restrictions placed on the data (please indicate if different data files have different usage license):

Creative Commons Attribution Non Commercial (CC-BY-NC 4.0) License

2. Links to publications/other research outputs that cite the data: N/A

3. Links to publications/other research outputs that use the data:

Ruiz-Villar H, Urra F, Jubete J, Morales-González A, Adrados B, Revilla E, Rivilla JC, Román J, Seijas J, López-Bao JV, Palomares F (2023) Presence of pastoral fields in mountain landscapes influences prey consumption by European wildcats. *Journal of Zoology*, 319: 63-75.  
<https://doi.org/10.1111/jzo.13027>

Román J, Urra F, Jubete F, Revilla E, Palomares F (2017) Definiendo el hábitat de la rata topera (*Arvicola scherman*) en la Cordillera Cantábrica. XIII Congreso de la Sociedad Española para la Conservación y Estudio de los Mamíferos. Guadalajara. (Oral).  
[https://secem.es/sites/default/files/2023-04/2017.%20Libro%20Res%C3%BAmenes%20Guadalajara\\_compressed.pdf](https://secem.es/sites/default/files/2023-04/2017.%20Libro%20Res%C3%BAmenes%20Guadalajara_compressed.pdf)

4. Links to other publicly accessible locations of the data: N/A

5. Links/relationships to ancillary data sets: N/A

6. Was data derived from another source? If so, please add link where such work is located:  
N/A

## **DATA & FILE OVERVIEW**

1. File List:

1\_location\_table\_TOPERAS.xlsx

2\_event\_table\_TOPERAS.xlsx

3\_molehills\_count\_table\_TOPERAS.xlsx

4\_cattle\_horse\_dung\_count\_table\_TOPERAS.xlsx

2. Relationship between files, if important:

1\_location\_table\_TOPERAS.xlsx: This file contains the information about the location of the fixed sampling points. It is related to the other three by means of the variable locationID.

2\_event\_table\_TOPERAS.xlsx: Each visit to each location is considered an event. This file is related to the following files through the eventID variable.

3. Additional related data collected that was not included in the current data package: N/A

4. Are there multiple versions of the dataset? If so, please indicate where they are located: NO

## METHODOLOGICAL INFORMATION

1. Description of methods used for collection/generation of data:

The purpose of the sampling was to obtain an index of montane water vole (*Arvicola amphibius cantabriae*) abundance. For this purpose, 278 fixed sampling points (locationID) were chosen in the study area, resampling them every year. The points are located in Meadows and grasslands. The selection was random, using QGIS, with two constraints: they had to be more than 100 m away from each other and that they were less than 500 m from the road. From the year 2023 onwards, 25 other points within forest habitats were selected with the same characteristics.

At each points, a 100 m transect was made, parallel to the riverbeds, to maintain constant soil and moisture conditions. Each transect was divided into 20 segments, 5 m long by 5 m wide (2.5 m on each side of the line of advance), and the presence/absence of signs in each segment was noted. In this way, an abundance index was obtained, ranging from 0 (no signs found) to 20 (signs present in all segments). This value correlates with the abundance of the species (Giraudoux et al. 1995). Sampling was repeated annually in late September/early October.

Although the target species to be counted was the montane water vole, the presence of Lusitanian pine vole (*Microtus lusitanicus*), Iberian mole (*Talpa occidentalis*), cattle and horse was also noted. The molehills of the wild species were differentiated by their characteristics of size, shape, entrance and disposition (Miñarro et al. 2012). For domestic species, the presence/absence of dung in each section was noted.

### References

Miñarro, M., Montiel, C., & Dapena, E. (2012). Vole pests in apple orchards: Use of presence signs to estimate the abundance of *Arvicola terrestris cantabriae* and *Microtus lusitanicus*. *Journal of Pest Science*, 85, 477–488.

Giraudoux, P., Pradier, B., Delattre, P., Deblay, S., Salvi, D., & Defaut, R. (1995). Estimation of water vole abundance by using surface indices. *Acta Theriol. (Warsz.)*, 40, 77–96.

Miñarro M. (2019). Rata topera *Arvicola scherman* (Shaw, 1801). Guía virtual de los indicios de los mamíferos de la Península Ibérica, Islas Baleares y Canarias. Sociedad Española para la Conservación y Estudio de los Mamíferos (SECEM)

2. Methods for processing the data: N/A

3. Instrument- or software-specific information needed to interpret/reproduce the data, please indicate their location: N/A

4. Standards and calibration information, if appropriate: N/A

5. Environmental/experimental conditions: N/A

6. Describe any quality-assurance procedures performed on the data: N/A

7. People involved with sample collection, processing, analysis and/or submission, please specify using CREDIT roles <https://casrai.org/credit/>:

Jacinto Román: Conceptualization, Data curation, Investigation, Methodology, dataCollector, Writing – original draft, Writing – review & editing

Fernando Jubete: Conceptualization, Methodology, dataCollector

Eloy Revilla: Conceptualization, Methodology, dataCollector, Funding acquisition

Juan Carlos Rivilla: dataCollector

Francisco Palomares: Conceptualization, Investigation, Methodology, dataCollector, Writing – review & editing, Funding acquisition, Project administration

Fermín Urra: Conceptualization, Methodology, Funding acquisition, dataCollector

Javier Calzada: dataCollector

Miguel Delibes: dataCollector

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**DATA-SPECIFIC INFORMATION:**

1. Number of variables:

1\_location\_table\_TOPERAS.xlsx: 15

2\_event\_table\_TOPERAS.xlsx: 8

3\_molehills\_count\_table\_TOPERAS.xlsx: 20

4\_cow\_horse\_dung\_count\_table\_TOPERAS.xlsx: 20

## 2. Number of cases/rows:

1\_location\_table\_TOPERAS.xlsx: 303

2\_event\_table\_TOPERAS.xlsx: 2249

3\_molehills\_count\_table\_TOPERAS.xlsx: 6747

4\_cow\_horse\_dung\_count\_table\_TOPERAS.xlsx: 4498

## 3. Variable List:

1\_location\_table\_TOPERAS.xlsx: type, language, institutionCode, collectionCode, locationID, decimalLongitude, decimalLatitude, verbatimElevationInMeters, geodeticDatum, continent, country, countryCode, province, habitatType, locationRemarks

2\_event\_table\_TOPERAS.xlsx: eventID, locationID, eventType, eventDate, samplingProtocol, mowed\_this\_year, shrub\_occurrence, eventRemarks

3\_molehills\_count\_table\_TOPERAS.xlsx: recordNumber, eventID, locationID, identifiedBy, scientificName, scientificNameAuthorship, kingdom, phylum, class, order, family, genus, specificEpithet, taxonRank, vernacularName, eventDate, year, occurrenceStatus, molehills\_count, recordRemarks

4\_cow\_horse\_dung\_count\_table\_TOPERAS.xlsx: recordNumber, eventID, locationID, identifiedBy, scientificName, scientificNameAuthorship, kingdom, phylum, class, order, family, genus, specificEpithet, taxonRank, vernacularName, eventDate, year, occurrenceStatus, dung\_count, recordRemarks

## 4. Missing data codes:

No data

## 5. Specialized formats or other abbreviations used: N/A

## 6. Dictionaries/codebooks used: N/A

## 7. Controlled vocabularies/ontologies used: N/A