ReadMe - V_rodents_snaptrapping_trapstatus_intensive

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1 Protocol

Snap trapping of small rodents has been conducted using the small quadrat method following the COAT protocol 'protocol_snap_trapping_of_rodents'.

1.1 Timing of sampling and changes in that

The trapping is conducted over two trapnights (i.e. two checks) twice a year (spring and fall).

Spring-trapping is conducted in early July (02.07.-04.07.) and fall-trapping in early September (02.09.-04.09.) with some exceptions. Trapping during the summer at Sandfjorddalen is usually done the three days preceding other trapping, due to logistic reasons.

Summer trapping in 2017 was done in mid-July 14.07.-16.07, due to late snowmelt.

1.2 Spatial layout of sampling and changes in that

The trapping is conducted at two watershed areas (Komagdalen and Vestre Jakobselv). Within these, three (Komagdalen) or two (Vestre Jakobselv) spatially separate sections were included in the design, either as sections of river valley/ separate river valleys. The sections were some kilometers from the nearest neighbouring section.

In each section, sampling quadrats are placed as pairs including a quadrat in each of the two habitat types: "thicket" (i.e. meadow and thicket mosaics in riparian habitats, the sampling quadrats being in the meadow habitat with one edge aligned with a thicket edge) and "heath" (i.e. dwarf shrub heath).
Between one and five quadrat pairs per section were included in the design.

In 2017, three additional sites (ko_ko_m_new1, ko_sa_m_new1 and ko_sa_m_new2) were included in the study design because the regular sites were inaccessible due to late snowmelt.

In 2020, some of the heath sites were moved.

More detailed information about which sites were included in the study design can be found in the auxialiary file 'V_rodents_snaptrapping_trapstatus_intensive_aux.txt'.

2 Description of the dataset

The dataset includes three different types of files and all files are saved as ;-separated txt-files:

- One data file per year (`_YEAR.txt`)
- One coordinate file with coordinates of all sites (`_coordinates.txt`)
- One auxiliary file with information about which sites are included in the study design (`_aux.txt`)

2.1 V_rodents_snaptrapping_trapstatus_intensive_YEAR.txt

These files contain the number of closed and missing traps per site.

Example of the first rows of the data files:

```
  sn_region sn_locality        sn_section    sn_site
1  varanger  komagdalen    komagdalen_ovre  ko_ko_m_a
2  varanger  komagdalen komagdalen_midtre  ko_km_hn_a
3  varanger  komagdalen     sandfjorddalen  ko_sa_hn_b
  sc_type_of_sites_ecological    t_date t_season t_session v_trap_status
1                      meadow 2017-09-01     fall         1        closed
2                   heath_near 2017-07-15   spring         1        closed
3                   heath_near 2017-07-15   spring         1        closed
  v_abundance v_observer v_comment
1           1       <NA>      <NA>
2           1       <NA>      <NA>
3           1       <NA>      <NA>
```

Description of the columns included in the data files:

Column name	Description	Possible values
sn_region	Study region	varanger
sn_locality	Locality (within region)	komagdalen, vestre_jakobselv
sn_section	Section (within locality)	komagdalen_ovre, komagdalen_midtre, sandfjorddalen, torvhaugdalen, bearalveaijohka
sn_site	Unique Site ID	e.g. ko_ko_m_a, ko_ko_m_e, ko_sa_hn_f, ko_sa_m_new2, vj_to_hn_c, ko_ko_m_c, vj_to_m_b, vj_be_hn_b, ko_sa_hn_d, ko_km_hn_c
sc_type_of_sites_ecological	Habitat type	meadow, heath_near
t_date	Sampling date	YYYY-MM-DD
t_season	Sampling season	fall, spring
t_session	Trapping night	1, 2
v_trap_status	Status of the trap	closed, missing
v_abundance	Number of traps	[numeric]
v_observer	Initials of observer	e.g. es (Eeva Soininen)
v_comment	Comments	[character]

2.2 V_rodents_snaptrapping_trapstatus_intensive_coordinates.txt

This file contains the coordinates of all sites included in the study desgin. Coordinates are given in decimal degrees and UTM 33 (WGS 84).

Example of the first rows of coordinate files:

```
    sn_site     e_dd     n_dd  e_utm33 n_utm33
1 if_ea_hn_a 27.36533 70.40762 959977.6 7858316
2  if_ea_m_a 27.36179 70.40552 959895.0 7858059
3 if_ea_hn_b 27.34243 70.42363 958774.6 7859895
```

2.3 V_rodents_snaptrapping_trapstatus_intensive_aux.txt

This file contains further information about the dataset such as old site names (for example used in raw data files before 2019) and the years when sites were first included in the study design and when sites were excluded from the study design.

Example of the first rows of auxiliary files:

```
  sn_region sn_locality        sn_section    sn_site sn_site_old year_first
1  varanger  komagdalen komagdalen_mitdre ko_km_hn_a       koh2a       2017
2  varanger  komagdalen komagdalen_mitdre ko_km_hn_b       koh2b       2017
3  varanger  komagdalen komagdalen_mitdre ko_km_hn_c       koh2c       2017
  year_last v_comment
1        NA        NA
2        NA        NA
3        NA        NA
```
* year_last is NA if the site is still included in the study design

3 Data cleaning and formatting

Rawdata from 2017 and 2018 has been cleaned and formatted according to the requirements of the COAT dataportal by Eeva Soininen and Hanna Boehner.

From 2019 onwards, rawdata is cleaned and formatted in two steps.

1. Data cleaning: Rawdata (individual data and trapping dates) are entered in excel-templates and are quality checked using the script `01_check_raw_data_snap_trapping_intesive_COAT.R` . The script checks that all entries are correct (e.g. site_id, species names), possible errors are corrected in the script and the cleaned data is saved as a txt-file.

In particular the script checks for:

- Correct spelling of all variables.
- **t_date:** Correct format (yyyy-mm-dd), dates in other formats are reformatted.
- **v_embryos** and **v_weight:** Outliers in number of embryos and weight.
- **v_observer:** Correct format (initials and lowercase letters), observer is reformatted e.g. if full names were used.
- **v_comment:** Correct spelling and format (lowercase letters and english). Comments are edited or translated if necessary.

- Matching number of observations in the different columns.

- The columns are renamed according to the the requirements of the COAT dataportal.

All corrections that go beyond simple typing mistakes and lead to differences between rawdata and cleaned data are double-checked in the fieldbooks and a comment is added.

2. Data formatting: The script
`02_produce_reformatted_snap_trapping_data_files_individual_plotbased_trapstatus_COAT.R` is used to produce the three datasets that are derived from snaptrapping data. The files will be formatted according to the requirements of the COAT data portal, will be saved as ;-separated txt-files and will be uploaded to the COAT data portal:

- `V_rodents_snaptrapping_individuals_intensive_YEAR.txt`

- `V_rodents_snaptrapping_abundance_intensive_YEAR.txt`

- `V_rodents_snaptrapping_trapstatus_intensive_YEAR.txt`