

ReadMe - V_rodents_cameratraps_image_metadata_intensive_quadrats

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1 Protocol

Camera trapping of small mammals has been conducted using the COAT protocol 'protocol_camera_trapping_small_mammals_varanger'.

1.1 Spatial layout of sampling and changes in that.

Camera trapping of small rodents in meadow and heath habitats was started in summer 2020. All heath and meadow sites included in the currently active studydesign were equipped with a camera trap. That covers localities Komagdalen and Vestre Jakobselv.

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

1.2 Timing of sampling

The camera traps in heath habitat are deployed the whole year. They are checked and images are downloaded once a year, usually in July. The camera traps in meadow habitat are deployed in July and collected in early September. This is done to avoid camera damage due to spring flood. Camera boxes are deployed permanently, and thus meadow cameras are always in the same place at each meadow site.

2 Description of the dataset

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

- One file per year and locality with metadata for each image (`_komagdalen_2020.txt`)
- One coordinate file with coordinates of all sites (`_coordinates.txt`)
- One auxiliary file with additional information about the sites (`_aux.txt`)

2.1 V_rodents_cameratraps_image_metadata_intensive_quadrat.txt

These files contain metadata for each image such as trigger mode (motion sensor or time lapse) and temperature.

Example of the first rows of the metadata file:

```
sn_region sn_locality      sn_section sc_type_of_sites_ecological
1  varanger  komagdalen komagdalen_midtre      heath_far
2  varanger  komagdalen komagdalen_midtre      heath_far
3  varanger  komagdalen komagdalen_midtre      heath_far
      sn_site      t_date      t_time      v_image_name
1 ko_km_hf_a 2020-09-03 17:55:24 ko_km_hf_a_2020-09-03_0001.JPG
2 ko_km_hf_a 2020-09-03 17:55:25 ko_km_hf_a_2020-09-03_0002.JPG
3 ko_km_hf_a 2020-09-03 20:00:00 ko_km_hf_a_2020-09-03_0003.JPG
      v_image_name_original v_trigger_mode v_sequence v_event v_temperature
1          RCNX0001.JPG   motion_sensor          1          1          15
2          RCNX0002.JPG   motion_sensor          2          1          15
3          RCNX0003.JPG    time_lapse          0          1          10
      v_comment
1          NA
2          NA
3          NA
```

Description of the columns included in the metadata file:

Column name	Description	Possible values
sn_region	Study region	varanger
sn_locality	Locality (within region)	komagdalen, vestre_jakobselv
sn_section	Section (within locality)	komagdalen_midtre, komagdalen_ovre, sandfjorddalen, bearalveaijohka, torvhaugdalen
sc_type_of_sites_ecological	Habitat type	heath_far, heath_near, meadow
sn_site	Unique Site ID	e.g. ko_km_hf_a, ko_km_hf_e, ko_km_hn_e, ko_km_m_d, ko_ko_hf_e
t_date	Date when the image was taken	YYYY-MM-DD
t_time	Time when the image was taken	HH:MM:SS
v_image_name	Image name	e.g. ko_km_hf_a_2020-09-03_0001.JPG, ko_ko_hf_a_2020-12-28_0002.JPG
v_image_name_original	Original image given by the camera	e.g. RCNX0001.JPG, RCNX0020.JPG
v_trigger_mode	Motion sensor or timelapse image	motion_sensor, time_lapse
v_sequence	0 = timelapse, 1 = motion sensor image 1, 2 = motion sensor image 2 ...	1, 2, 0
v_event	Unique number for each timelapse and motion sensor trigger event	[numeric]
v_temperature	Temperature in the camera box in °C	[numeric]
v_comment	Comments	[character]

2.2 V_rodents_cameratraps_image_metadata_intensive_quadrats_coordinates.txt

This file contains the coordinates of all camera sites included in the study design. 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
16 ko_ko_hn_a 29.94898 70.32916 1056664 7871442
18 ko_ko_hn_c 29.97894 70.33058 1057721 7871871
20 ko_ko_hn_e 30.00741 70.32603 1058887 7871640
```

2.3 V_rodents_cameratraps_image_metadata_intensive_quadrats_aux.txt

This file contains further information about the dataset such as old site names 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_midtre ko_km_hf_a      <NA>      2020
2  varanger    komagdalen komagdalen_midtre ko_km_hf_b      <NA>      2020
3  varanger    komagdalen komagdalen_midtre ko_km_hf_c      <NA>      2020
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 Related datasets

3.1 V_rodents_cameratraps_image_classification_intensive_quadrats

This dataset contain presence (1) or absence (0) of small mammal species on the images.

3.2 V_rodents_cameratraps_annual_metadata_intensive_quadrats

This datasets contains information of the annual visits of the camera sites when the cameras are checked and images are downloaded such as the serial number of the camera and whether the camera was functioning.

4 Data processing

1. Metadata is extracted from the images and the images are renamed with a name consisting of the site-ID, the date when the image was taken and a number (e.g. ko_ga_sn_1_2020-01-01_0001.JPG)
2. The data files are formatted according to the requirements of the COAT data portal

All data processing is performed in R.