ReadMe - V_rodents_cameratraps_image_metadata_lemming_blocks

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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 Komagdalen was started in summer 2015. A pilot study was conducted from summer 2014 to 2015 and the data is available in dataset 'V_rodents_cameratraps_pilot'.

Some camera traps have been moved in 2016 and 2018. In 2018, cameras have been set up in a second locality (Vestre Jakobselv).

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

1.2 Timing of sampling

The camera traps are deployed the whole year and the images are downloaded once a year, usually in July. Therefore, the data files contain data from July to July. For example, the file for 2020 contains data from July 2019 to July 2020

2 Description of the dataset

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

- One file per year and locality with metadata for each image (`_komagdalen_2016.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_lemming_blocks.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    sn_site
1  varanger  komagdalen     gargas               hummock_mire ko_ga_hu_1
2  varanger  komagdalen     gargas               hummock_mire ko_ga_hu_1
3  varanger  komagdalen     gargas               hummock_mire ko_ga_hu_1
      t_date   t_time                   v_image_name
1 2015-08-24 08:52:04 ko_ga_hu_1_2015-08-24_0001.JPG
2 2015-08-24 08:52:05 ko_ga_hu_1_2015-08-24_0002.JPG
3 2015-08-24 08:53:05 ko_ga_hu_1_2015-08-24_0003.JPG
         v_image_name_original v_trigger_mode v_sequence v_event v_temperature
1 2015-08-24 08-52-04 M 1_2.JPG  motion_sensor          1       1          17.8
2 2015-08-24 08-52-05 M 2_2.JPG  motion_sensor          2       1          17.8
3 2015-08-24 08-53-05 M 1_2.JPG  motion_sensor          1       2          17.8
  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)	gargas, hubejohka, kjoltindan, ryggfjellet, gaasevannan, reinhaugen, skoarrajohka, tranemyra
sc_type_of_sites_ecological	Habitat type	hummock_mire, snowbed
sn_site	Unique Site ID	e.g. ko_ga_hu_1, ko_ga_sn_1, ko_hu_hu_3, ko_hu_sn_3, ko_kj_sn_23
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_ga_hu_1_2015-08-24_0001.JPG, ko_hu_sn_1_2015-09-05_0004.JPG
v_image_name_original	Original image given by the camera	e.g. 2015-08-24 08-52-04 M 1_2.JPG, 2015-08-24 10-17-31 M 2_2.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, 3, 4, 5
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_lemming_blocks_coordinates.txt

This file contains the coordinates of all camera 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  ko_ga_hu_1 29.90737 70.34465 1054721 7872741
2 ko_ga_hu_1b 29.90745 70.34474 1054721 7872751
3  ko_ga_sn_1 29.92304 70.36851 1054643 7875475
```

2.3 V_rodents_cameratraps_image_metadata_lemming_blocks_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 sc_type_of_sites_ecological     sn_site
1  varanger  komagdalen     gargas                hummock_mire  ko_ga_hu_1
2  varanger  komagdalen     gargas                hummock_mire ko_ga_hu_1b
3  varanger  komagdalen     gargas                     snowbed  ko_ga_sn_1
  sn_site_old date_first  date_last
1        GNY1 2015-08-24 2016-07-04
2   GNY1-2016 2016-07-04       <NA>
3       GNY10 2015-08-26 2016-07-04
                                                                    v_comment
1                                                                        <NA>
2                                                                        <NA>
3 no rockfield but hummocks that make alot of microtopography in the snowbed.
```

* year_last is NA if the site is still included in the study design

3 Related datasets

3.1 V_rodents_cameratraps_image_classification_lemming_blocks

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

3.2 V_rodents_cameratraps_annual_metadata_visits

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.

3.3 V_rodents_cameratraps_manual_image_classification_lemming_blocks

This dataset contains manual classification for all images from Komagdalen between summer 2015 and summer 2018. In this period, all images were annotated manually. The manual classifications in the dataset 'V_rodents_cameratraps_manual_image_classification_lemming_blocks' differ slightly from the manual classifications included in the dataset 'V_rodents_cameratraps_image_classification_lemming_blocks' because different persons annotated the images.

3.4 V_rodents_cameratraps_pilot

This dataset contains data from a pilot study performed in Komagdalen in 2014 and 2015.

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.