

Rød-Eriksen, L., Skrutvold, J., Herfindal, I., Jensen, H., Eide, N. E. Highways associated with expansion of boreal scavengers into alpine areas. *Journal of Applied Ecology*.

## METADATA

### File list:

- Snowtracking.csv
- Nestpredation.csv
- Cameratrap\*\_\*.csv
  - \* carcass.csv
  - \* corvids.csv
  - \* date.csv
  - \* sitecovs.csv
  - \* snowage.csv
  - \* snowdepth.csv
  - \* tempday.csv
  - \* tempnight.csv
  - \* yearly sitecovs.csv

### File descriptions:

- **Snowtracking.csv:** Snow tracking data for red fox and arctic fox along transects in proximity to highways in three montane areas in Fennoscandia. The data set contains 432 rows, one row for each 1 km transect (24) within each study area (3) and year (3) for each main species (2). The data set contains the following parameters:

Name	Data type	Description
ObsID	Numeric	Unique identifier for each transect/area/year/species
Area	Categorical	Study area
Year	Categorical	Study year
SiteID	Categorical	Identifier for each transect within each study area (sampling site)
CamTrap	Binary	If a camera was placed on the transect (1) or not (0)
Occasion	Numeric	Tracking occasion included in analysis (1 = prior to camera trapping, 2 = during camera trapping)
CamTrapPres	Binary	Whether a camera trap was active at the transect during snow tracking (1) or not (0)
Tracks	Numeric	Main response variable. The number of identified tracks of red fox or arctic fox per transect.
Species	Categorical	RF = red fox, AF = arctic fox
SnowAge	Numeric	The number of days since last snowfall. Note that < 24 hours = 0.
DistRoad	Numeric	The distance from the transect to the nearest highway (0-3 km)
Elev	Numeric	The overall elevation (m.a.s.l.) of the transect
ForLine	Numeric	The overall elevation (m.a.s.l.) of the forest line in proximity to this transect
RelDistForLine	Numeric	An index indicating the relative elevational distance from the current transect to the forest line (Elev divided by ForLine)

Cabins1500	Numeric	The number of cabins within a 1500-meter radius of each transect
RodCat		The rodent phase (i.e. Increase, Peak, Crash, Low) of the study area within study year
Items	Numeric	The number of edible items of anthropogenic origin identified along the road verges (potential subsidies). Only 2016.
ItemWgt	Numeric	The potential total weight of identified edible items based on their original weight in grams. Only 2016.
ItemWgtAvg	Numeric	The average potential weight of each identified edible item. Only for 2016.
VPD	Numeric	Vehicles Per Day for each study area. Only 2016

- **Nestpredation.csv:** Nest predation data along transects in proximity to highways in three montane areas in Fennoscandia. The data set contains 1080 rows, one row for each nest (5) for each transect (24) within each study area (3) and year (3). The data set contains the following parameters:

Name	Data type	Description
ObsID	Numeric	A unique identifier for each nest / transect / area / year
Year	Categorical	Represents each study year
Area	Categorical	Represents each study area
LocID	Categorical	Identifier for each transect within each area and year
NestID	Categorical	Identifier for each nest within each transect and area
DistRoad	Numeric	The distance from the nest to the nearest highway
Elev	Numeric	The elevation (meters above sea level) for each nest
ForLine	Numeric	The overall elevation (m.a.s.l.) of the forest line in proximity to this transect
RelDistForLine	Numeric	An index indicating the relative elevational distance from the current nest to the forest line (Elev divided by ForLine)
Cabins1500	Numeric	The number of cabins within a 1500-meter radius of each transect
RodPhase	Categorical	The rodent phase (i.e. Increase, Peak, Crash, Low) of the study area within study year
Predation	Binary	If the nest was depredated (1) or not (0)

- **Cameratraps\_\*.csv:** Data included in multi-season occupancy models based on camera trap data on corvids along transects in proximity to highways in three montane areas in Fennoscandia:
  - \* **corvids.csv:** daily detection/non-detection data (1 = detection, 0 = non-detection) of corvids from baited camera traps. Each row corresponds to a camera trap site. The first column is the associated study area, whereas the second column is a unique camera trap site identifier where the last digit indicates the distance to the nearest highway (in km). The remaining columns

(42) are the daily detections/non-detections for the first 14 days of camera trapping in 2016, 2017 and 2018, respectively. Blank cells (NA) indicate an inactive camera.

- \* **sitecovs.csv**: site-specific covariates, including study area ('Area'), a unique camera trap location ID ('SiteID'), the distance from the camera trap to the nearest highway ('DistRoad'), camera trap location elevation ('Elev'), the overall elevation of the forest line in proximity to the camera trap ('ForLine'), the relative distance of the camera trap location to the forest line ('Elev' / 'ForLine'), and the number of cabins within a 1500 meter radius of the camera trap location ('Cabins1500').
- \* **yearlysitecovs.csv**: site-specific covariates which vary between primary temporal periods (here: study years). Includes the rodent phase ('low', 'increase', 'peak', 'crash') for each study area and year.
- \* Observation covariates which vary between sampling occasions (here: camera trap days). One file per covariate, which share an identical layout with the daily detection/non-detection data for corvids (i.e. each column corresponds to one day during a 14-day trapping period for 2016, 2017 and 2018, for a total of 42 days).
  - **carcass.csv**: indicates the daily status of the camera trap bait (Pres = present and available, Abs = absent/consumed, UA = unavailable due to snow cover)
  - **date.csv**: the date of the camera trapping, used to investigate whether variation in times of camera trapping may influence species detections.
  - **snowage.csv**: the number of days since last snowfall, which may affect detection probability.
  - **snowdepth.csv**: the daily snow depth in meters.
  - **tempday.csv**: daytime temperatures averaged over photos during daylight hours, i.e. when cameras were not utilizing IR flash.
  - **tempnight.csv**: nighttime temperatures averaged over photos during the night, i.e. when cameras were utilizing IR flash.

## Data sources

- Elevation was extracted from a Digital Terrain Model with 10 x 10 meter pixel resolution («Height DTM 10»), retrieved from publicly available data for Norway at <https://www.geonorge.no/>.
- Forest line elevation was extracted from the DTM10 in intersect with forested areas extracted from a vector based Area Resource map with 50 x 50 meter pixel resolution (AR50), retrieved from publicly available data for Norway at <https://nibio.no/en>.
- The number of cabins were extracted from a vector based N50 Map (50 x 50 meter pixel resolution), publicly available from <https://www.geonorge.no/>. The map layer "N50\_BygningerOgAnlegg\_posisjon" (N50 Buildings and Installations) was filtered by category "bygninger" (buildings) with codes 161, 162 and 163 (representing secondary homes and cabins).