Workflow Documentation for Nature Index 2025 Indicators

Indicator(s): *wild reindeer*

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Underlying data & knowledge base

Indicator based on:

☒Monitoring data   ☒Model predictions   ☐Expert judgement

Resources:

Description	Type	Link/storage location
NI_villrein.Rmd	Code	https://github.com/1BartPeeters/NI_indicator_wildReindeer
Stammeregnskap for Naturindeks (.xlsx)	Data file	https://github.com/1BartPeeters/NI_indicator_wildReindeer/blob/main/data_NI/Stammeregnskap%20for%20Naturindeks25_BBH_20250316.xlsx
Reindeer area sf polygons (.gpkg)	Data file	https://github.com/1BartPeeters/NI_indicator_wildReindeer/blob/main/data_NI/reindeer_areas_inc_subdivision.gpkg
IMPM model output data for NI (.Rdata/.txt)	Data files	https://github.com/1BartPeeters/NI_indicator_wildReindeer/tree/main/data_NI
Carrying capacity (K) estimates and predictions (.txt/.Rdata)	Data files	https://github.com/1BartPeeters/NI_indicator_wildReindeer/tree/main/data_NI

reindeer_totalHarvest_data_1991-2024.csv	Data file	https://github.com/1BartPeeters/NI_indicator_wildReindeer/tree/main/data_NI

Description of workflow steps

Step	Summary
1	Process Integrated multi-population model (IMPM) outputs
2	Estimate carrying capacity using a Ricker model for populations from IMPM, using harvest-adjusted growth rates
3	Predict carrying capacities (with uncertainties) for other reindeer are areas using a log-log linear regression model of K on area size
4	Estimate annual reindeer abundance for other areas (not in IMPM) using minimum counts adjusted for mean detectability with uncertainty
5	Impute missing reindeer abundance estimates for benchmark years (1990, 2000, 2010, 2014, 2019, 2024)
6	Calculate reindeer density (per km2)
7	Upload to NI database

Additional remarks

Complete workflow, R code and data files are available on
https://github.com/1BartPeeters/NI_indicator_wildReindeer