

Data and R-scripts for: “Misreading or living in denial? Reindeer overstocking and long-term effects on vegetation: an experimental approach”

SND-ID: 2024-610. **Version:** 1. **DOI:** <https://doi.org/10.5878/tkv6-jp59>

Download data

AnalysesExperiment_DensAverage5yr/Analyses/Biomass/Biomass_AnnualMeans.tiff (194.12 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Biomass/Biomass_AnnualPred.tiff (209.36 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Biomass/Biomass_InitialDiag.tiff (2.75 MB)
AnalysesExperiment_DensAverage5yr/Analyses/Biomass/Biomass_InitialPred.tiff (258.38 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Biomass/Biomass_InitialSummary.txt (4.05 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Biomass/Biomass_ModelDiag.tiff (3.1 MB)
AnalysesExperiment_DensAverage5yr/Analyses/Biomass/Biomass_Summary.txt (22.62 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Biomass/ModelPred_Biomass.tiff (656.17 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Cover/Cover_AnnualMeans.tiff (207.49 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Cover/Cover_AnnualPred.tiff (211.19 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Cover/Cover_InitialDiag.tiff (2.54 MB)
AnalysesExperiment_DensAverage5yr/Analyses/Cover/Cover_InitialPred.tiff (253.45 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Cover/Cover_InitialSummary.txt (4.05 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Cover/Cover_ModelDiag.tiff (2.86 MB)
AnalysesExperiment_DensAverage5yr/Analyses/Cover/Cover_Summary.txt (21.27 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Cover/ModelPred_Cover.tiff (991.94 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Height/Height_AnnualMeans.tiff (181.51 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Height/Height_AnnualPred.tiff (198.14 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Height/Height_InitialDiag.tiff (2.07 MB)
AnalysesExperiment_DensAverage5yr/Analyses/Height/Height_InitialPred.tiff (250.22 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Height/Height_InitialSummary.txt (4.8 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Height/Height_ModelDiag.tiff (2.96 MB)
AnalysesExperiment_DensAverage5yr/Analyses/Height/Height_Summary.txt (23.65 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Height/ModelPred_Height.tiff (629.3 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Summary.xlsx (44.54 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Volume/ModelPred_Volume.tiff (646.78 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Volume/Volume_AnnualMeans.tiff (182.97 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Volume/Volume_AnnualPred.tiff (207.7 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Volume/Volume_InitialDiag.tiff (2.75 MB)
AnalysesExperiment_DensAverage5yr/Analyses/Volume/Volume_InitialPred.tiff (258.23 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Volume/Volume_InitialSummary.txt (4.07 KB)
AnalysesExperiment_DensAverage5yr/Analyses/Volume/Volume_ModelDiag.tiff (3.1 MB)
AnalysesExperiment_DensAverage5yr/Analyses/Volume/Volume_Summary.txt (22.26 KB)

AnalysesExperiment_DensAverage5yr/CorrScatterPredictors.tiff (511.93 KB)
AnalysesExperiment_DensAverage5yr/CorrScatterPredictorsInitiation.tiff (510.82 KB)
AnalysesExperiment_DensAverage5yr/CorrScatterResponses.tiff (544.88 KB)
AnalysesExperiment_DensAverage5yr/Density_ModelDiag.tiff (2.81 MB)
AnalysesExperiment_DensAverage5yr/Density_Pred.tiff (183.2 KB)
AnalysesExperiment_DensAverage5yr/DensitySummary.txt (3.37 KB)
AnalysesExperiment_DensAverage5yr/pca.plot.tiff (460.53 KB)
AnalysesExperiment_DensAverage5yr/SessionInfo.txt (2.45 KB)
AnalysesExperiment.R (90.44 KB)
AreaBuffer.GeoJSON (6.14 KB)
dataManip_DensAverage5yr/dataManip.RDATA (22.69 KB)
dataManip_DensAverage5yr/dataManip.xlsx (72.28 KB)
HelperFunctions.R (12.52 KB)

Associated documentation

README.txt (9.14 KB)

Download all files

2024-610-1.zip (~32.86 MB)

Citation

Bårdsen, B.-J., Tømmervik, H., Næss, M. W., & Bjerke, J. W. (2025) Data and R-scripts for: “Misreading or living in denial? Reindeer overstocking and long-term effects on vegetation: an experimental approach” (Version 1) [Data set]. Norwegian Institute for Nature Research - NINA. Available at: <https://doi.org/10.5878/tkv6-jp59>

Alternative title

Reindeer-lichen dynamics in Finnmark, Norway

Creator/Principal investigator(s)

[Bård-Jørgen Bårdsen](#) - Norwegian Institute for Nature Research (NINA), Arctic Ecology Department, Fram Centre, N-9296 Tromsø, Norway

[Hans Tømmervik](#) - Norwegian Institute for Nature Research (NINA), Arctic Ecology Department, Fram Centre, N-9296 Tromsø, Norway

[Marius Warg Næss](#) - Norwegian Institute for Cultural Heritage Research (NIKU), High North Department, Fram Centre, N-9296 Tromsø, Norway

[Jarle Werner Bjerke](#) - Norwegian Institute for Nature Research (NINA), Arctic Ecology Department, Fram Centre, N-9296 Tromsø, Norway

Research principal

[Norwegian Institute for Nature Research - NINA](#) - Arctic Ecology Department

Description

Our study assessed ground-lichen responses, measured at plots of ca. one m² in size, to reindeer

grazing pressure. Our study area is ca. 14 000 km² in size and is in Finnmark, Northern Norway. The study was initiated in 1998, and the same plots were re-visited in 2005, 2010, 2013, and 2018. This study is part of a long-term monitoring program of the lichen pastures in Norway. The data sets include information about ground-lichen biomass (g per m²), volume (L per m²), cover (%), and height (mm), which were our responses. The key predictors consisted of experimental manipulation, reindeer density (individuals per km²), initial conditions (i.e., the observed values for a given response in 1998), and habitat (Forest- and leeward-heath vs. exposed ridges mountain heaths). The experimental manipulation allowed us to compare plots exposed to grazing and trampling by reindeer and other larger herbivores (control) to fenced (treatment) areas. In addition, we included several spatial and temporal variables acting as potential random effects in our mixed effects models: district, transect, block and year (we provide additional information about the data and the analyses in the published article).

Data contains personal data

No

Language

[English](#)

Time period(s) investigated

1998 - 2018

Data format / data structure

[Numeric](#)

[Text](#)

Species and taxons

[Cladonia arbuscula](#)

[Cladonia stellaris](#)

[Stereocaulon paschale](#)

[Cetraria islandica](#)

[Rangifer tarandus](#)

[Cladonia rangiferina](#)

[Cladonia mitis](#)

[Nephromopsis nivalis \(L.\) divakar, a. crespo & lumbsch](#)

[Cladonia arbuscula subsp. mitis](#)

Data collection 1

- Mode of collection: Field/Intervention experiment
- Description of the mode of collection: Details are provided in Bårdsen et al. (2025, Ecosphere)
- Data collector: Norwegian Institute for Nature Research

Data collection 2

- Mode of collection: Field observation
- Description of the mode of collection: Details are provided in Bårdsen et al. (2025, Ecosphere)
- Data collector: Norwegian Institute for Nature Research

Geographic spread

Geographic location: [Norway](#)

Geographic description: Finnmark, Northern Norway (the polygon on the map shows the convex hull for the positions of our field sites with an added buffer of 10 km)

Responsible department/unit

Arctic Ecology Department

Funding 1

- Funding agency: The Norwegian Agriculture Agency's Reindeer Division

Funding 2

- Funding agency: The European Union's Horizon 2020 Research and Innovations Programme
- Funding agency's reference number: 869471
- Project name on the application: Drivers and Feedbacks of Changes in Arctic Terrestrial Biodiversity (CHARTER)

Funding 3

- Funding agency: The European Research Council Consolidator Grant
- Funding agency's reference number: 101043382
- Project name on the application: COMPLEXITY

Research area

[Biological sciences](#) (Standard för svensk indelning av forskningsämnen 2011)

[Botany](#) (Standard för svensk indelning av forskningsämnen 2011)

[Ecology](#) (Standard för svensk indelning av forskningsämnen 2011)

[Environmental sciences related to agriculture and land-use](#) (Standard för svensk indelning av forskningsämnen 2011)

[Biota](#) (INSPIRE topic categories)

[Environment](#) (INSPIRE topic categories)

Keywords

[Overgrazing](#), [Density dependence](#), [Reindeer](#), [Lichens](#), [Grazing intensity](#), [Semi-domestic reindeer](#), [Environmental unpredictability](#), [Spatiotemporal variability](#), [Equilibrium vs. non-equilibrium](#), [Negative density dependence](#)

Publications

Bårdsen, B.-J., Tømmervik, H., Næss, M. W., & Bjerke, J. W. (2025). Misreading or living in denial? Reindeer overstocking and long-term effects on vegetation – an experimental approach. *Ecosphere*.

Polygon (Lon/Lat)

22.773753, 68.633555

23.27803, 68.613445

23.284748, 68.613201

24.752954, 68.560717

24.765512, 68.560332

24.778107, 68.560182

24.790707, 68.560269
24.803278, 68.560592
24.815788, 68.56115
24.828203, 68.561942
24.840491, 68.562967
24.852619, 68.56422
24.864557, 68.5657
24.876272, 68.567401
24.887734, 68.56932
24.898913, 68.571451
24.909779, 68.57379
24.920304, 68.576329
24.93046, 68.579062
24.940219, 68.581983
24.949557, 68.585082
24.958449, 68.588353
25.682561, 68.863649
25.691229, 68.867056
25.6994, 68.870619
25.707053, 68.87433
25.714167, 68.878177
25.720722, 68.882152
25.726701, 68.886244
25.732088, 68.890441
25.736869, 68.894733
25.741029, 68.899108
25.744559, 68.903554
25.747447, 68.908061
25.749686, 68.912614
25.75127, 68.917204
25.752193, 68.921817
25.752454, 68.92644
25.749674, 69.107948
25.749626, 69.109281
25.734501, 69.373839
25.734493, 69.373962
25.723161, 69.557938
25.722883, 69.560602
25.710074, 69.647337
25.709018, 69.652044

25.70725, 69.656725
25.704774, 69.661367
25.701596, 69.665957
25.697726, 69.670482
25.693172, 69.67493
25.687949, 69.679288
25.682069, 69.683544
25.675548, 69.687686
25.668406, 69.691703
25.660661, 69.695583
25.652334, 69.699315
25.64345, 69.702889
25.634032, 69.706295
25.624106, 69.709524
25.613701, 69.712565
25.602845, 69.715412
25.591568, 69.718055
25.579903, 69.720487
25.567882, 69.722702
23.975277, 69.98707
23.962592, 69.988955
23.949632, 69.990606
23.936432, 69.99202
23.923032, 69.993191
23.909468, 69.994117
23.895779, 69.994796
23.882004, 69.995224
23.868181, 69.995402
23.85435, 69.995328
23.84055, 69.995003
23.826821, 69.994427
23.8132, 69.993603
23.799727, 69.992532
23.78644, 69.991218
23.773376, 69.989664
23.760572, 69.987875
23.748065, 69.985855
22.985329, 69.851599
22.974005, 69.849442
22.963008, 69.847093

22.952367, 69.844557
22.942107, 69.841842
22.932255, 69.838953
22.922835, 69.835897
22.913871, 69.832684
22.905383, 69.82932
22.190345, 69.525322
22.182084, 69.521539
22.174411, 69.517606
22.167348, 69.513537
22.160916, 69.509341
22.155131, 69.505032
22.15001, 69.50062
22.145568, 69.49612
22.141815, 69.491543
22.138764, 69.486902
22.13642, 69.482211
22.134792, 69.477483
22.133882, 69.472731
22.133694, 69.46797
22.134227, 69.463211
22.218088, 69.008499
22.218941, 69.004906
22.297063, 68.736282
22.298703, 68.731716
22.300987, 68.727188
22.303907, 68.722708
22.307455, 68.718288
22.311622, 68.71394
22.316397, 68.709676
22.321767, 68.705506
22.327717, 68.701442
22.334231, 68.697494
22.341291, 68.693672
22.34888, 68.689988
22.356977, 68.686449
22.36556, 68.683066
22.374607, 68.679848
22.384094, 68.676802
22.393995, 68.673938

22.404285, 68.671261
22.414937, 68.66878
22.425923, 68.666501
22.437214, 68.664429
22.44878, 68.662571
22.460591, 68.66093
22.472616, 68.659512
22.484824, 68.65832
22.74081, 68.635649
22.751701, 68.63477
22.76269, 68.634072
22.773753, 68.633555

Accessibility level

Access to data through SND
Data are freely accessible

Use of data

[Things to consider when using data shared through SND](#)

License

[Public Domain Mark 1.0](#)

Versions

Version 1. 2025-01-16

Contacts for questions about the data

Hans Tømmervik

Hans.Tommervik@nina.no

Bård-Jørgen Bårdsen

bjb@nina.no

Download metadata

[DataCite](#)

[DDI 2.5](#)

[DDI 3.3](#)

[DCAT-AP-SE 2.0](#)

[JSON-LD](#)

[PDF](#)

[Citation \(CSL\)](#)

[File overview \(CSV\)](#)

Published: 2025-01-16