Using the Norwegian Nature Index as a biodiversity account





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NINA
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The Norwegian Nature Index





The Norwegian Nature Index

- State of biodiversity as an aggregated index
  - Population levels of species, species groups and, a few, indirect indicators (total: 261)





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  - Population levels of species, species groups and, a few, indirect indicators (total: 261)
- Representative selection of native species/indicators for seven main ecosystems
  - Ocean waters, Coastal waters, Freshwater, Wetland, Woodland, Mountain, Open lowland





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  - Population levels of species, species groups and, a few, indirect indicators (total: 261)
- Representative selection of native species/indicators for seven main ecosystems
  - Ocean waters, Coastal waters, Freshwater, Wetland, Woodland, Mountain, Open lowland
- Defined reference conditions for all ecosystems
  - Theoretical intact nature, with negligible human impact* and given climate and species assemblages in the climate normal period (1961 – 1990)





* For semi-natural ecosystems: ecosystems under good appropriate management, with negligible other human impact

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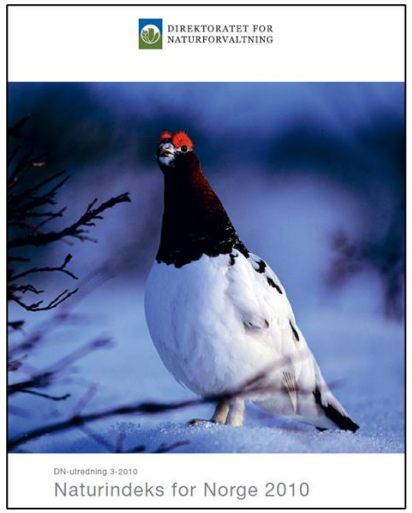
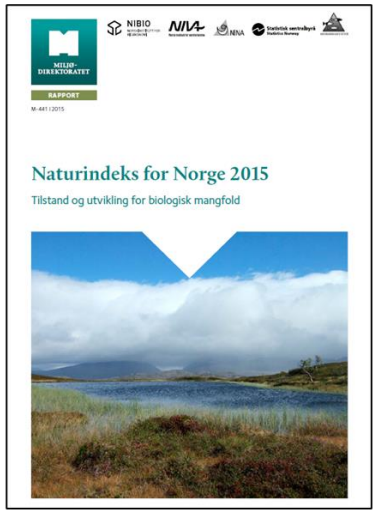
The Norwegian Nature Index

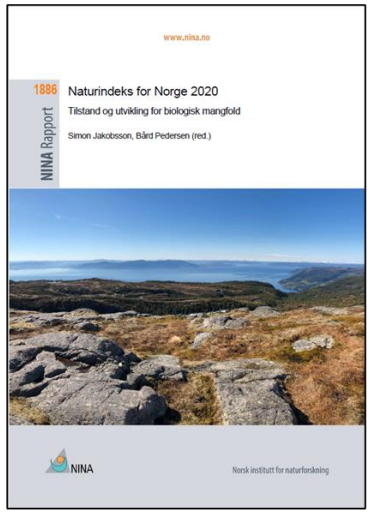
- Involves a large number of experts across ecosystems
- Updated every fifth year; includes updated calculations back in time
  - ‘best available knowledge’
- So far presented in 2010, 2015 and 2020



2010



2015



2020

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Method

Method

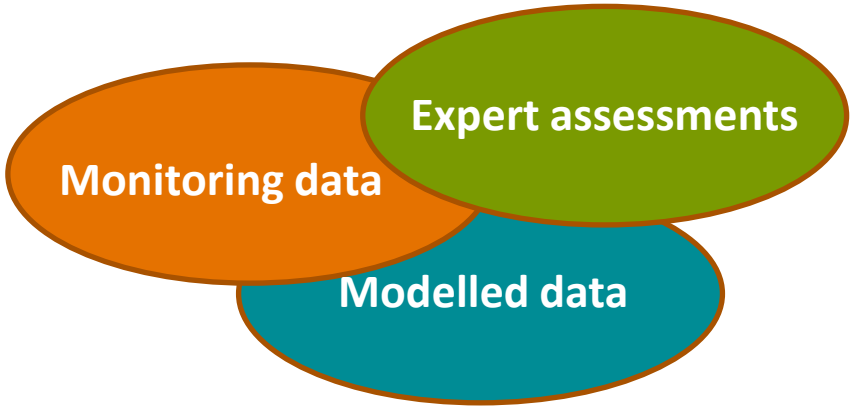


Photo: Simon Jakobsson


Photo: Børre K. Dervo


Photo: Jan Ove Gjershaug

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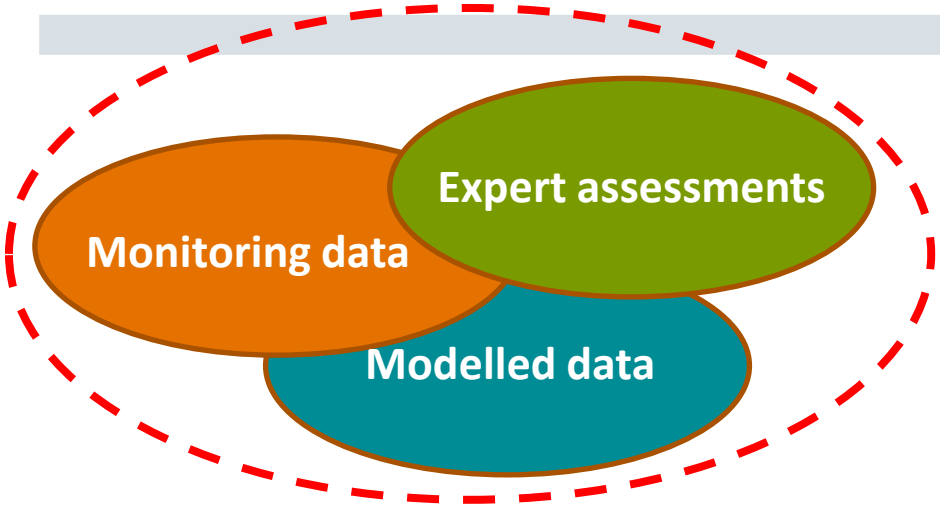


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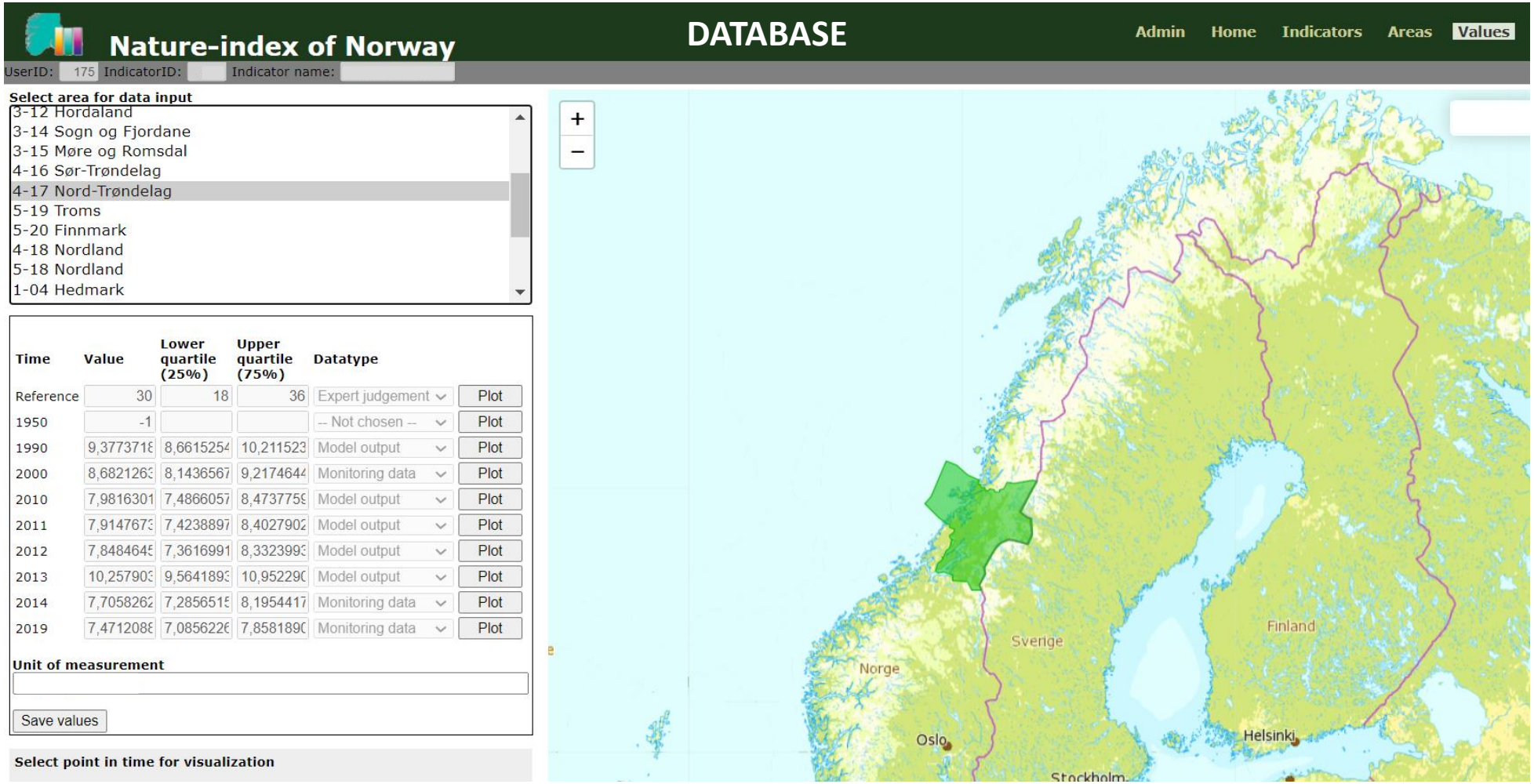
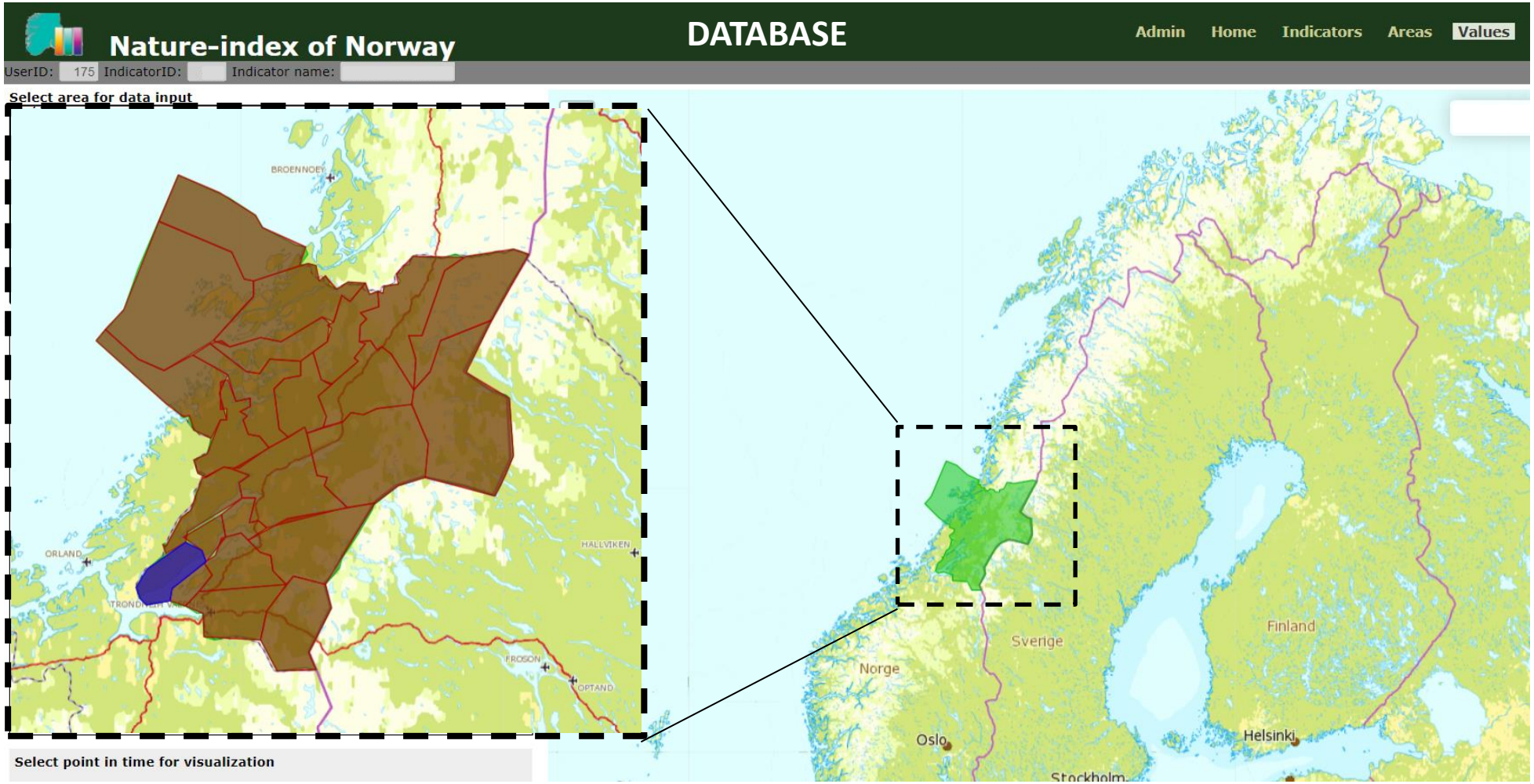

Nature-index of Norway
DATABASE
Admin
Home
Indicators
Areas
Values
UserID: 175 IndicatorID: Indicator name:
Select area for data input
3-12 Hordaland
3-14 Sogn og Fjordane
3-15 Møre og Romsdal
4-16 Sør-Trøndelag
4-17 Nord-Trøndelag
5-19 Troms
5-20 Finnmark
4-18 Nordland
5-18 Nordland
1-04 Hedmark
Time
Value
Lower quartile (25%)
Upper quartile (75%)
Datatype
Reference 30 18 36 Expert judgement Plot
1950 -1 -- Not chosen -- Plot
1990 9,3773718 8,6615254 10,211523 Model output Plot
2000 8,6821263 8,1436567 9,2174644 Monitoring data Plot
2010 7,9816301 7,4866057 8,473775 Model output Plot
2011 7,9147673 7,4238897 8,4027902 Model output Plot
2012 7,8484645 7,3616991 8,3323993 Model output Plot
2013 10,257903 9,5641893 10,95229 Model output Plot
2014 7,7058262 7,2856515 8,1954417 Monitoring data Plot
2019 7,4712088 7,0856226 7,8581890 Monitoring data Plot
Unit of measurement
Save values
Select point in time for visualization
Sverige
Finland
Norge
Oslo
Helsinki
Stockholm

Method


Nature-index of Norway
DATABASE
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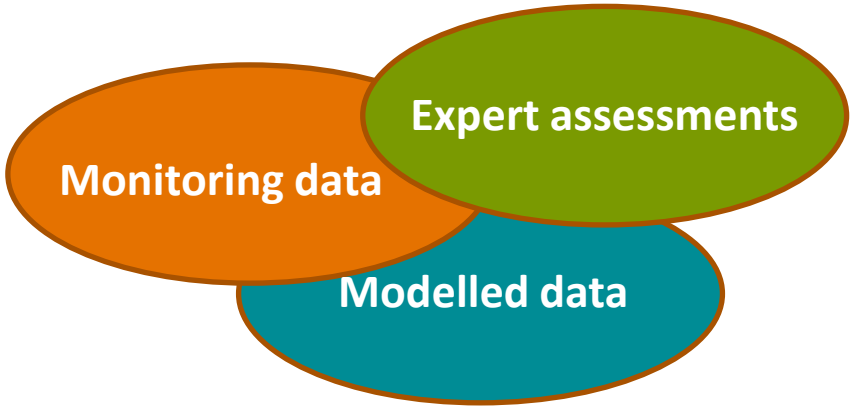
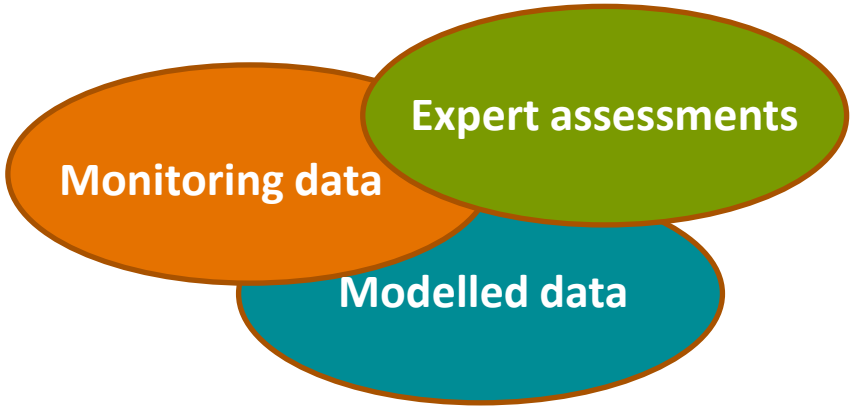


- Scaling
  - 1 = Reference condition *intact nature* (truncated values)
  - 0 = 'Absence' (degraded ecosystem)

Method



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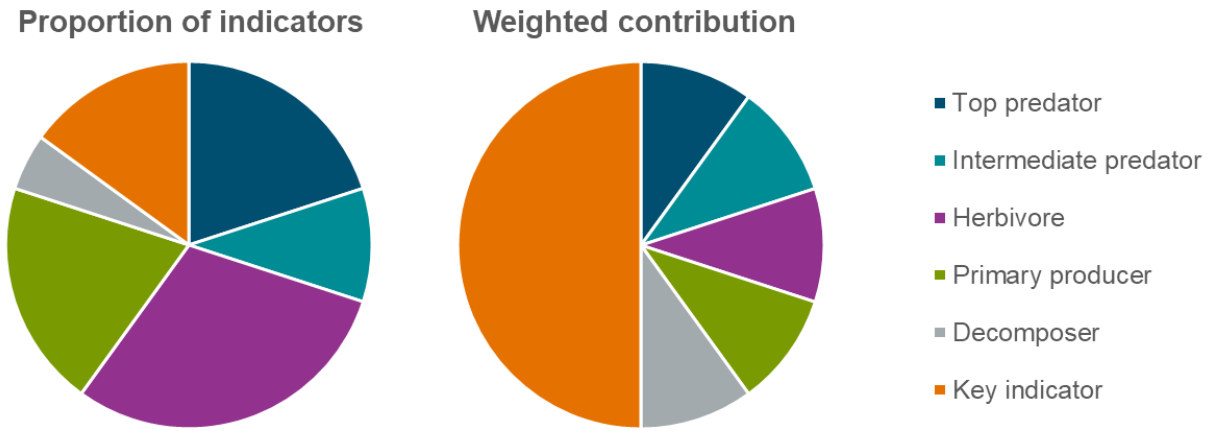
  - Functional groups



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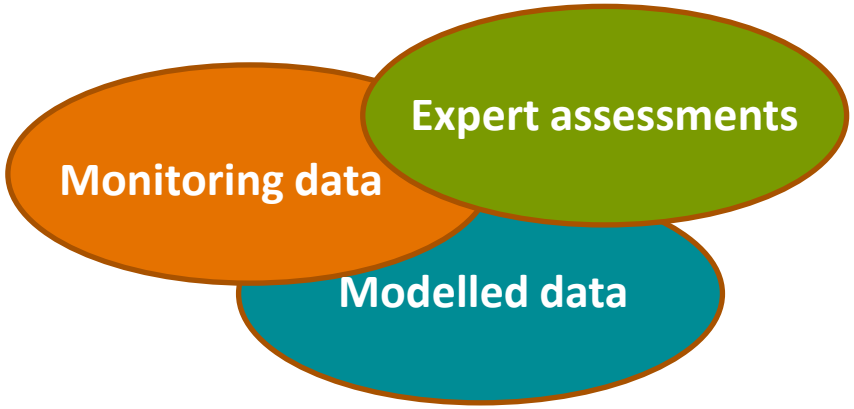

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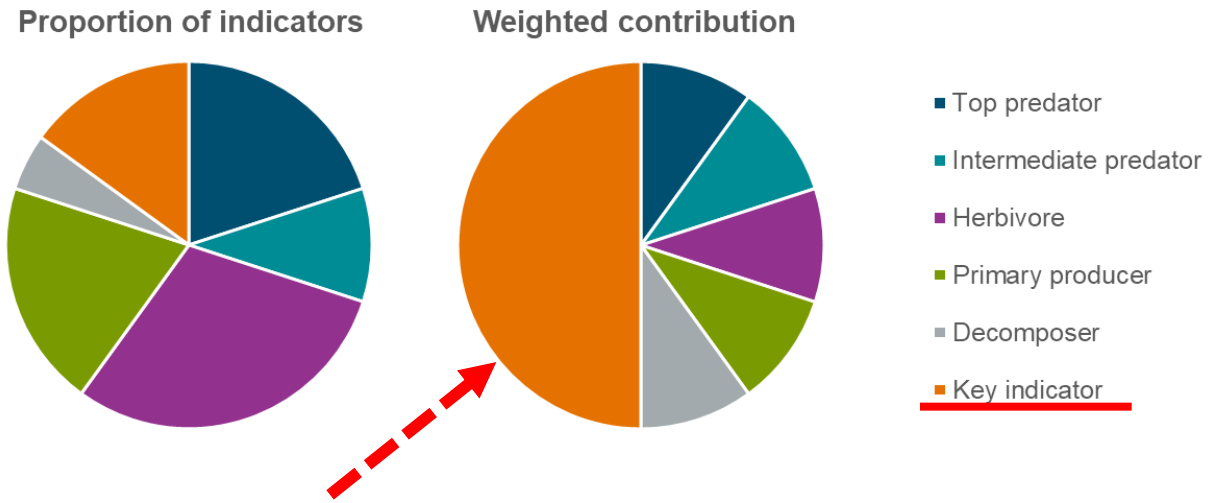

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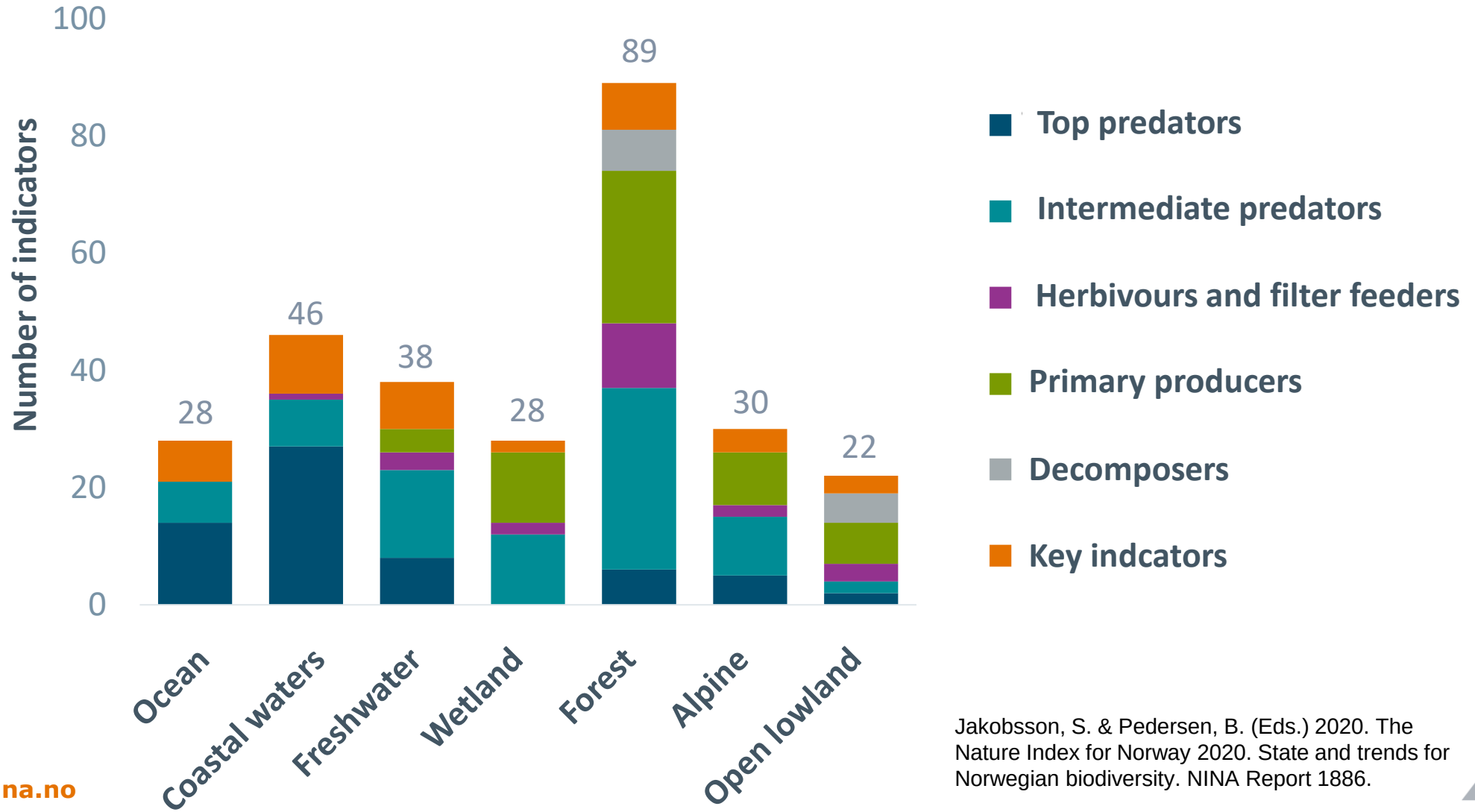

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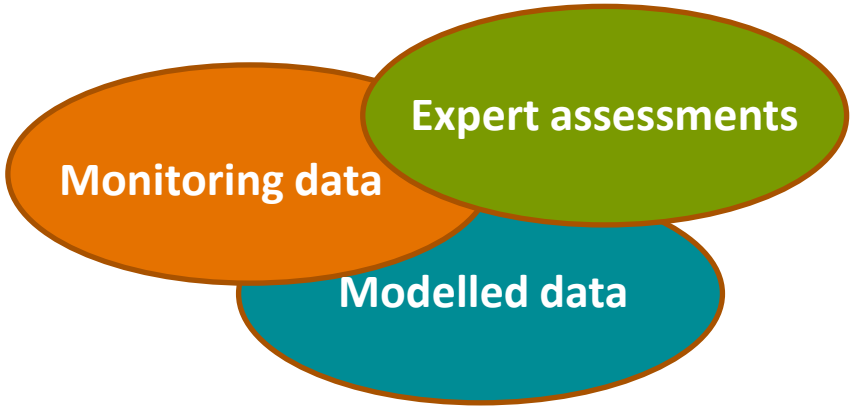

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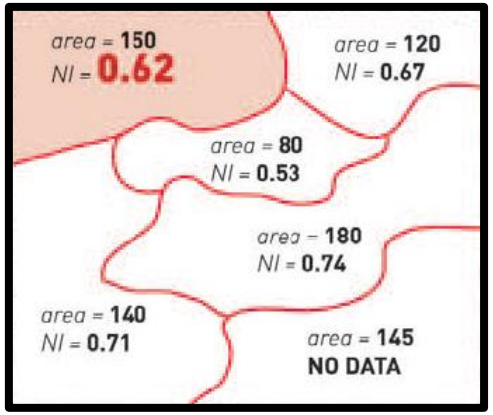
- Aggregation weighting
  - Functional groups
  - Area
    - data coverage
    - area of spatial unit
    - ecosystem area



Certail et al. 2011. The Nature Index: A General Framework for Synthesizing Knowledge on the State of Biodiversity. PLoS ONE 6(4): e18930.

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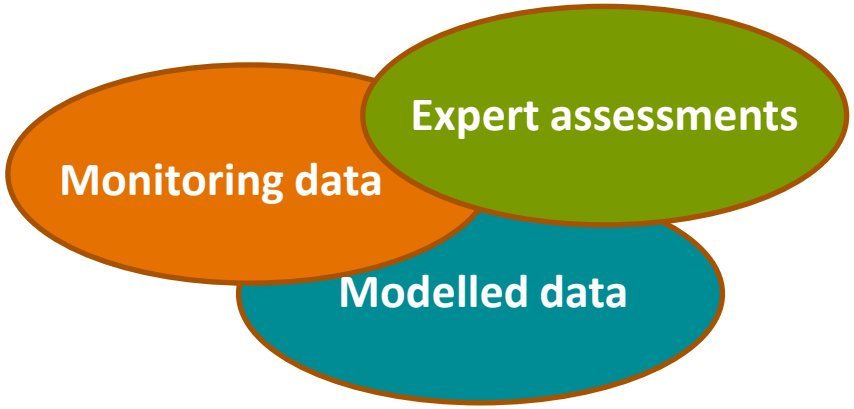

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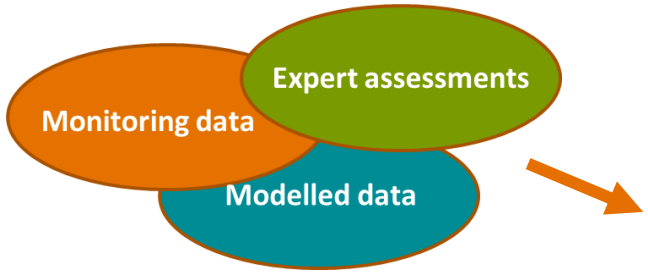
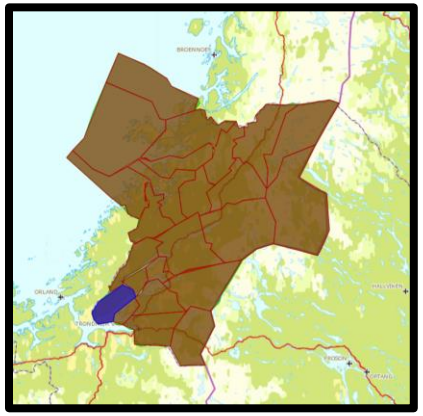
    - ecosystem area
- Reporting
  - Norway
  - Regions
  - Municipalities*

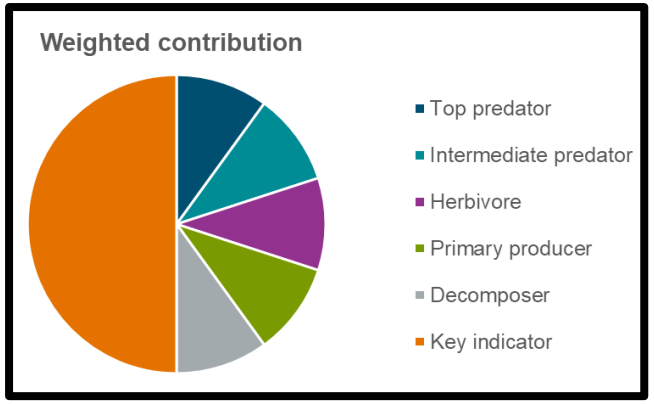
Method

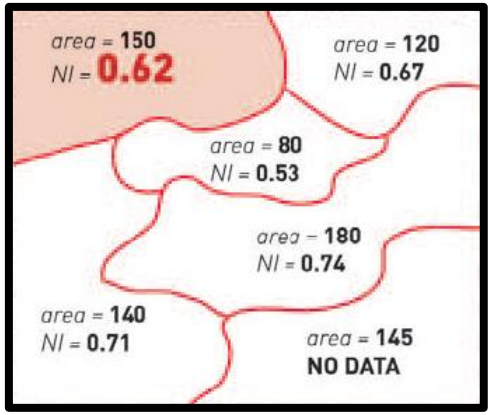




Scaled values:

0 – 1





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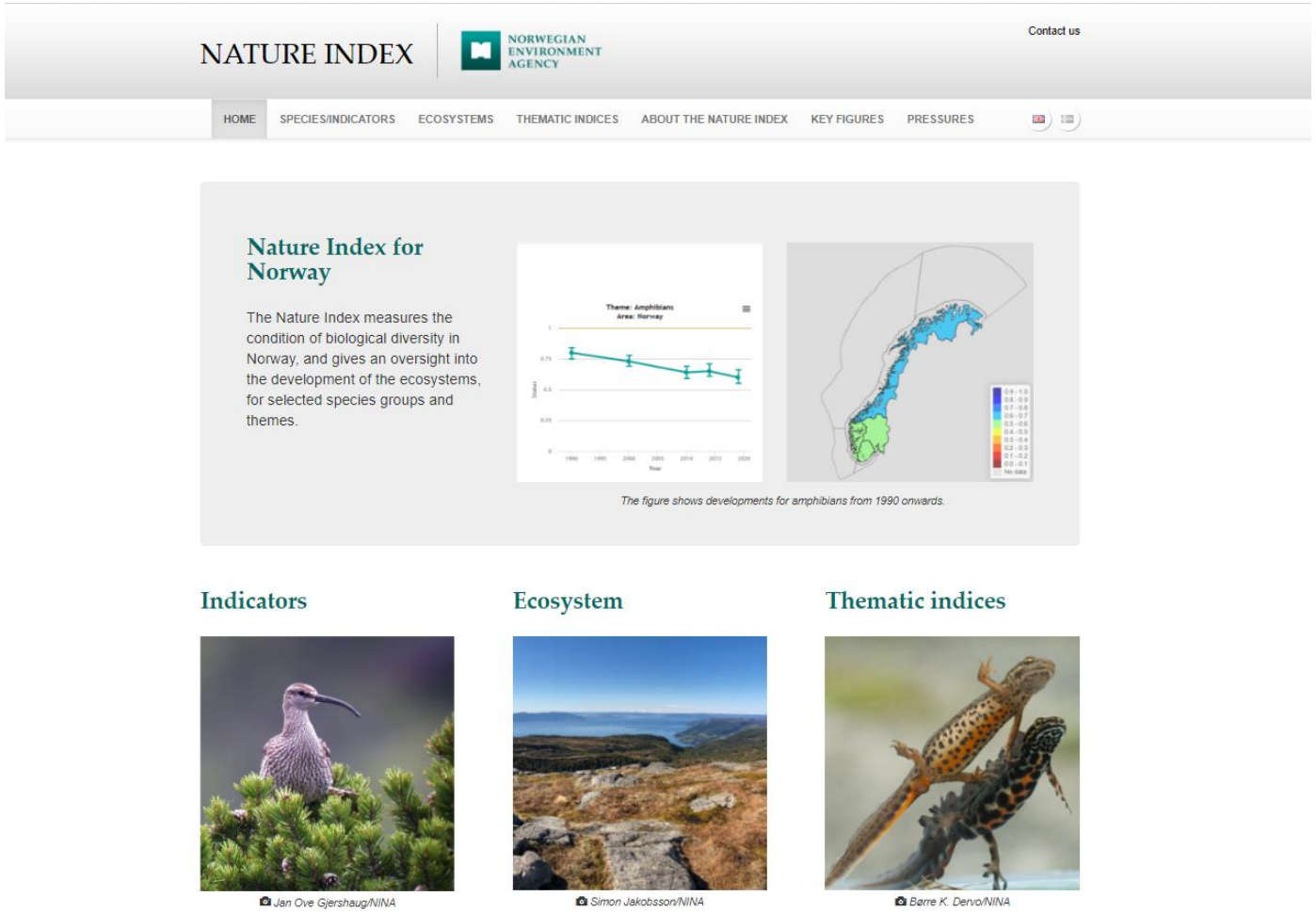
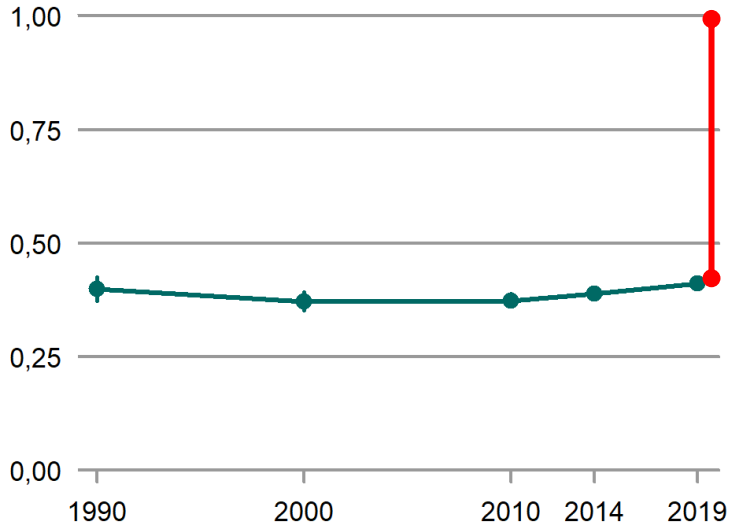


The Norwegian Nature Index 2020

- Forest
  - Low index: e.g. old trees and deadwood
  - Slight increase after 2010



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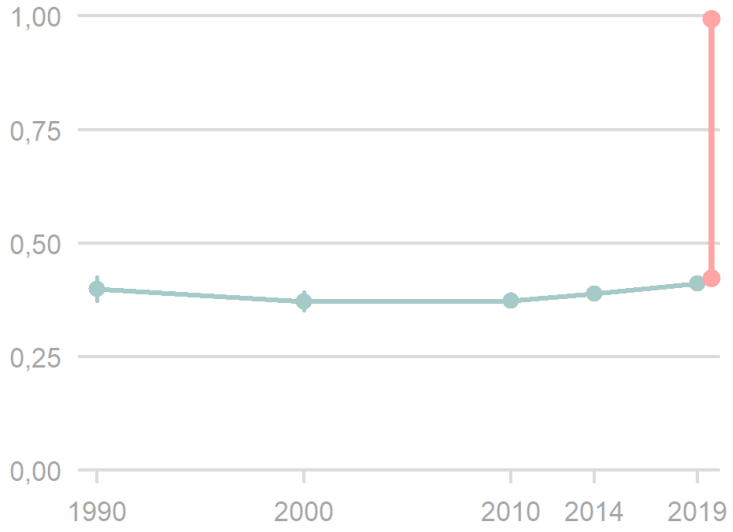
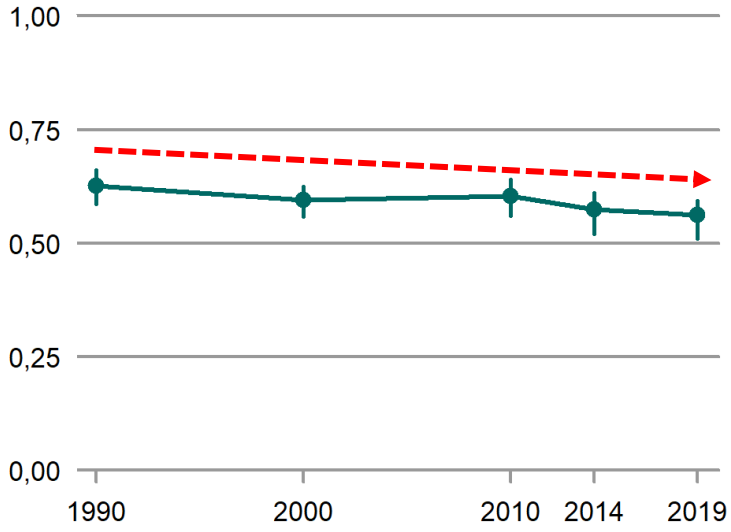


- Alpine
  - Weak negative trend
  - Rodents and ptarmigan species



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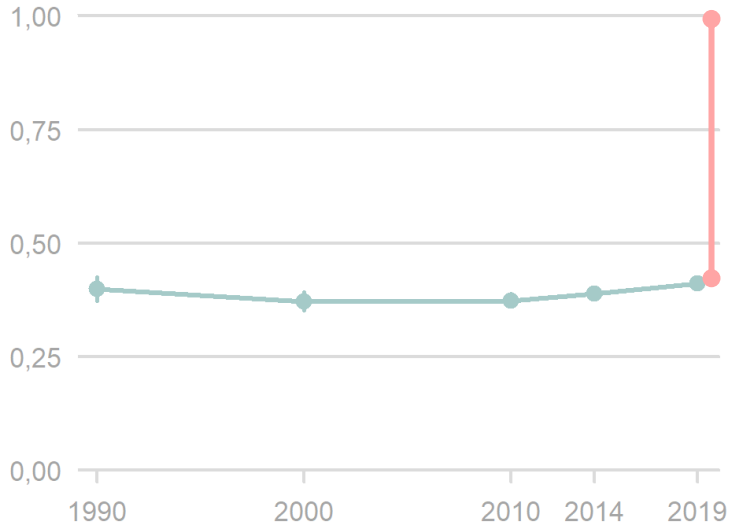

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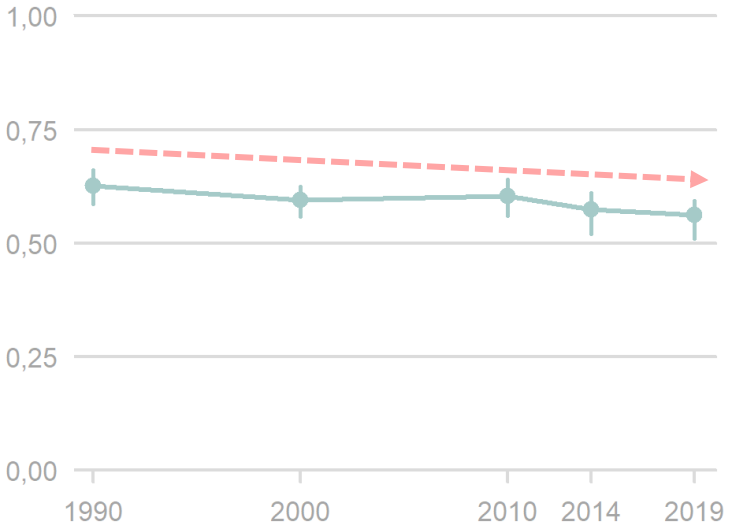
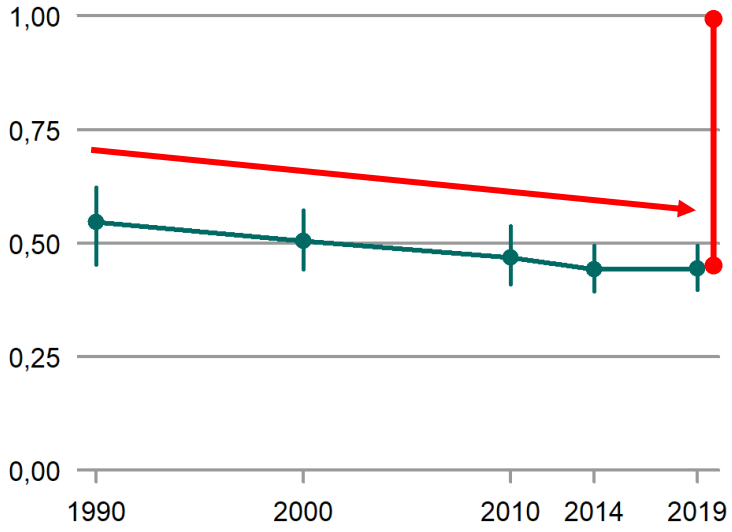


- Open lowland
  - Abandonment
  - Steady negative trend



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What is it used for?





What is it used for?

- Gives an overview of the state and trends of indicators and ecosystems and helps highlighting critical target points for nature conservation
- Reports on national and international environment goals
- Thematic indices developed to focus on particularly important management questions
- Used to assess the condition of *biodiversity* within the Index-Based Ecological Condition Assessment (IBECA) in Norway

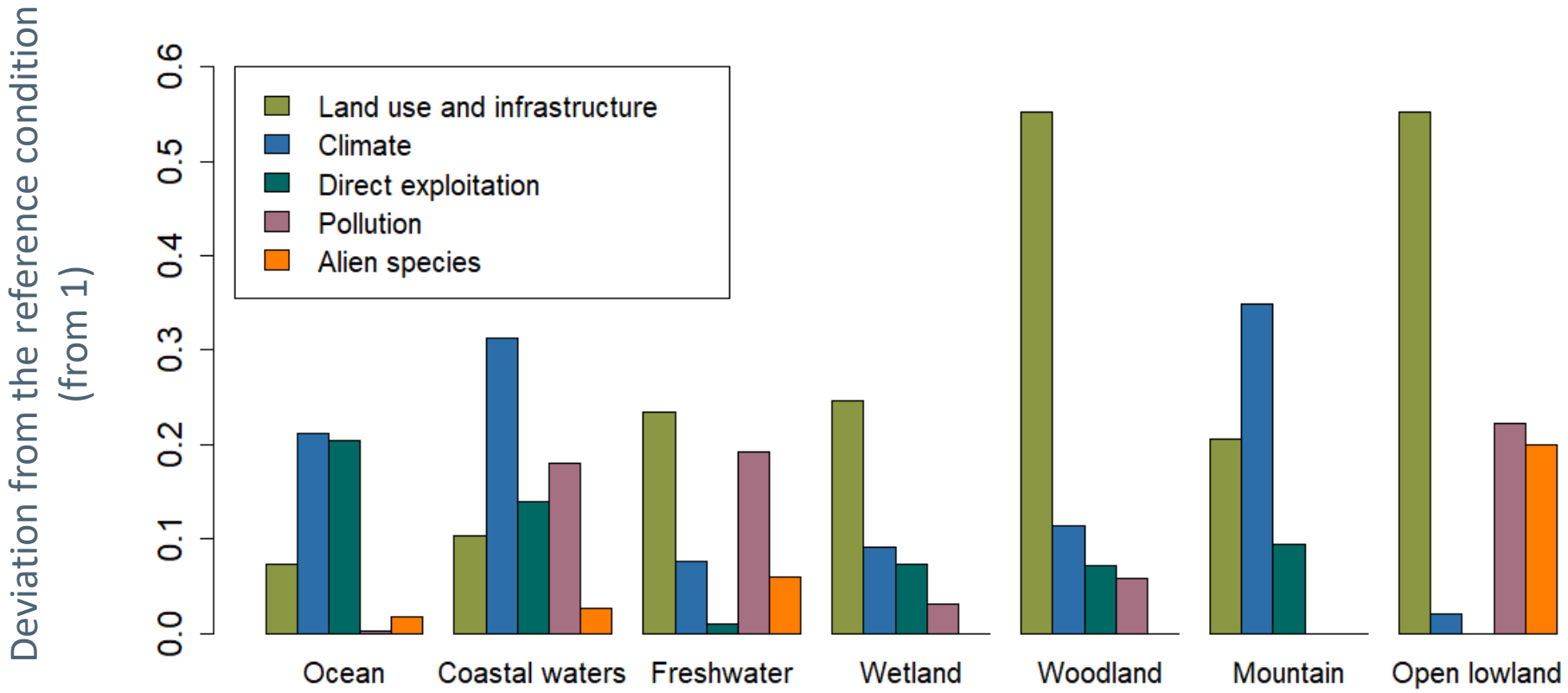




Questions?

The Nature Index and Pressures

Sensitive indicators influence on deviation from the reference condition



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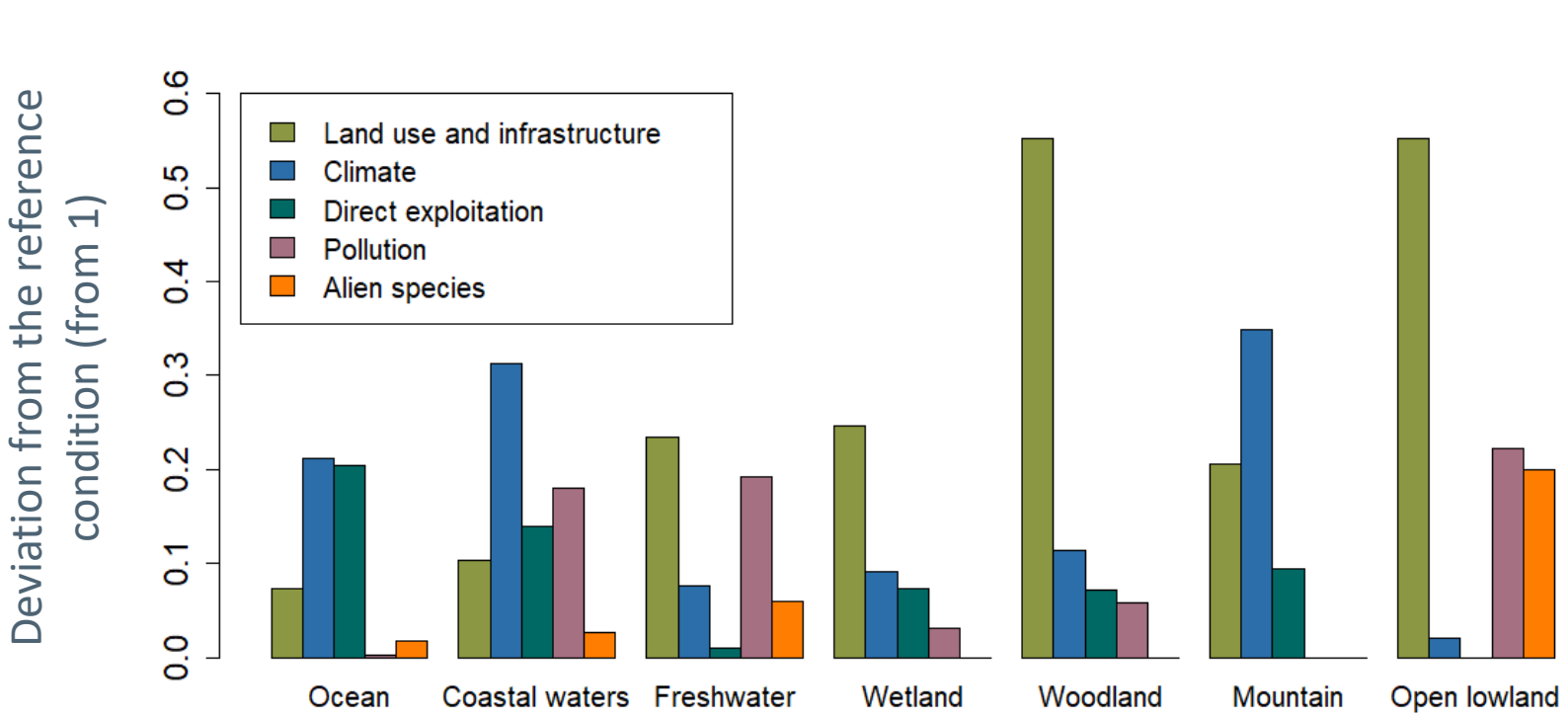
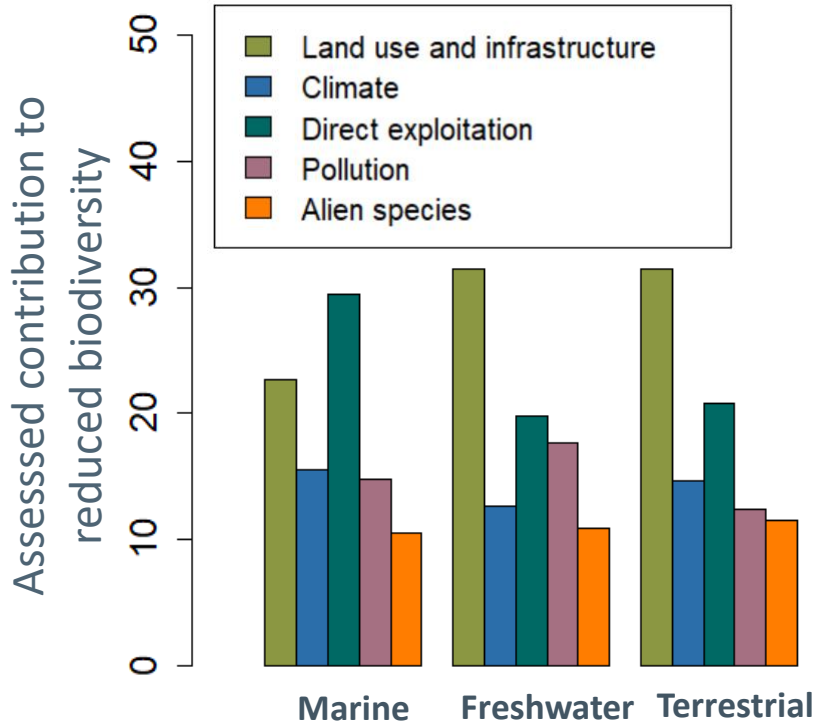
The Nature Index and Pressures

Sensitive indicators influence on deviation from the reference condition

IPBES assessment of the effects of pressures on biodiversity globally





Left: based on Jakobsson, S. & Pedersen, B. (Eds.) 2020. The Nature Index for Norway 2020. State and trends for Norwegian biodiversity. NINA Report 1886. Norwegian Institute for Nature Research. Right: based on IPBES. 2019. Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.