

# The Nature Index for Norway - a new measure of biodiversity

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# Nature Index for Norway

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DN-utredning 3-2010

Naturindeks for Norge 2010

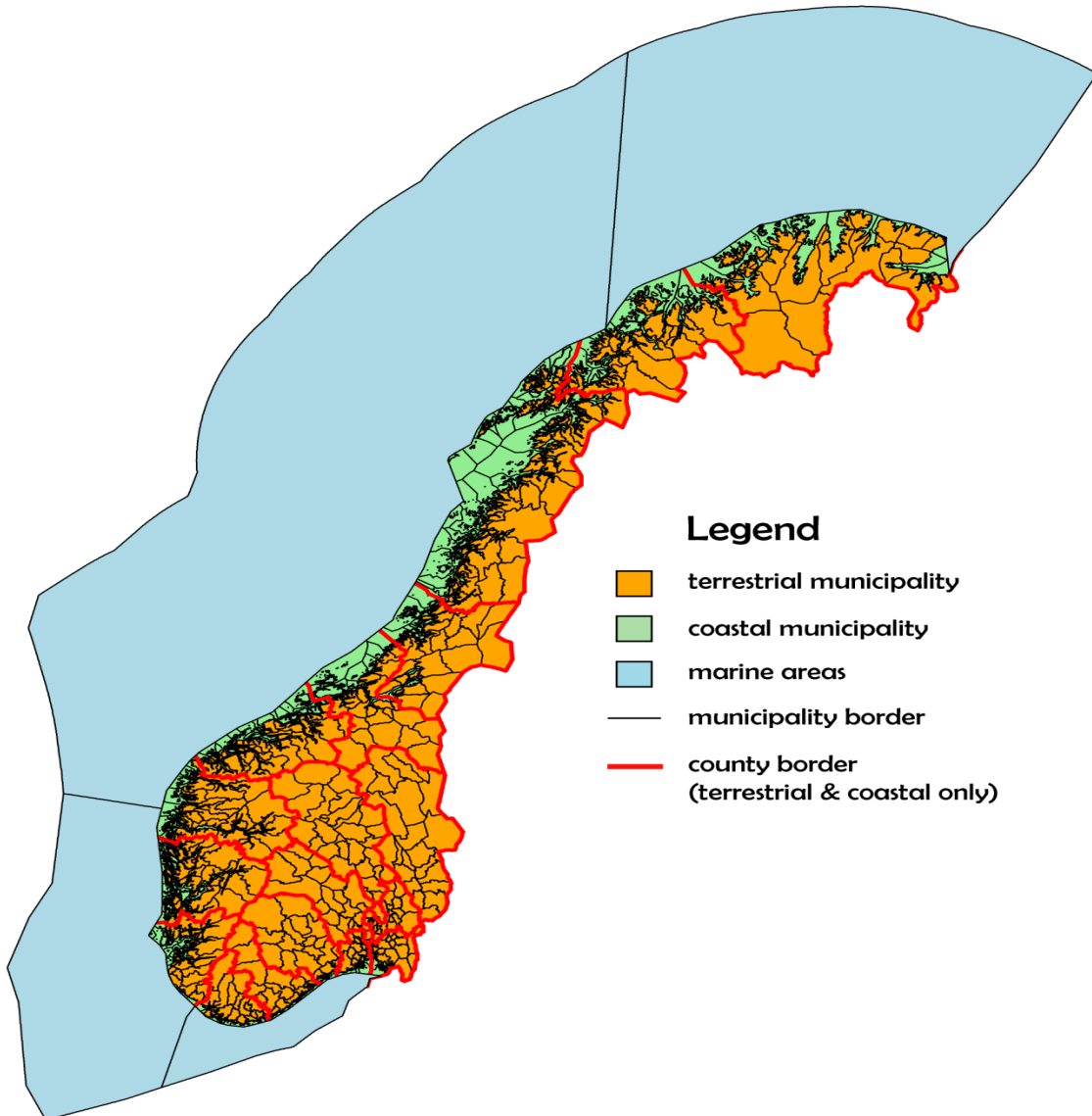
# Purpose: Overview of state and trends of biodiversity



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- Measure state and trends of biodiversity in natural ecosystems, including the cultural landscape.
- Reflect threats to biodiversity: The combined effect of all pressure.
- Combines current biodiversity knowledge in a common conceptual framework (expert-judgements and monitoring data).
- Measurement tool for government policy and management





### Legend

- terrestrial municipality
- coastal municipality
- marine areas
- municipality border
- county border  
(terrestrial & coastal only)

5 national research institutes +  
Statistics Norway  
125 Researchers  
Internet based data-collection  
1950, 1990, 2000, 2010, 2020  
309 indicators

$$NI_t = \sum_{ijk} S_{ijkt} W_{ijkt}$$

S = State

W = Weighted at trophic level

t = time

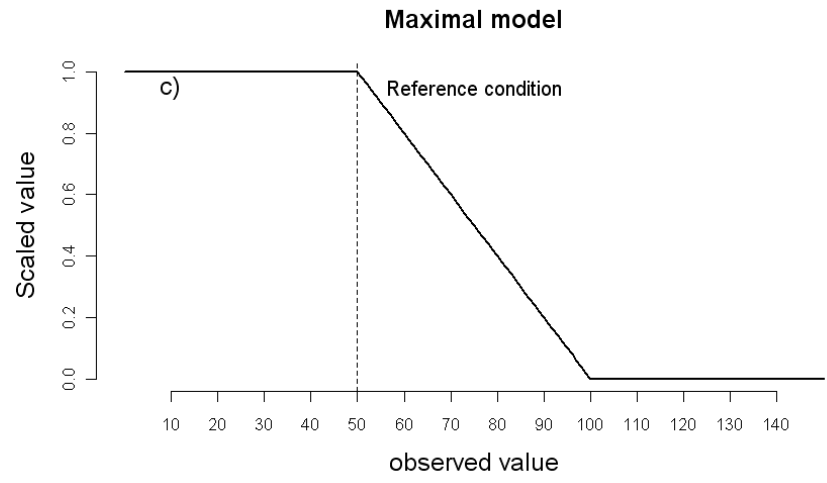
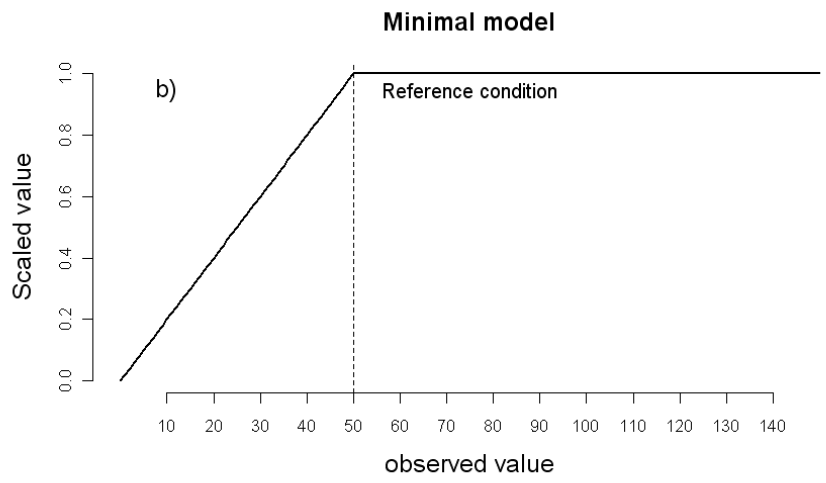
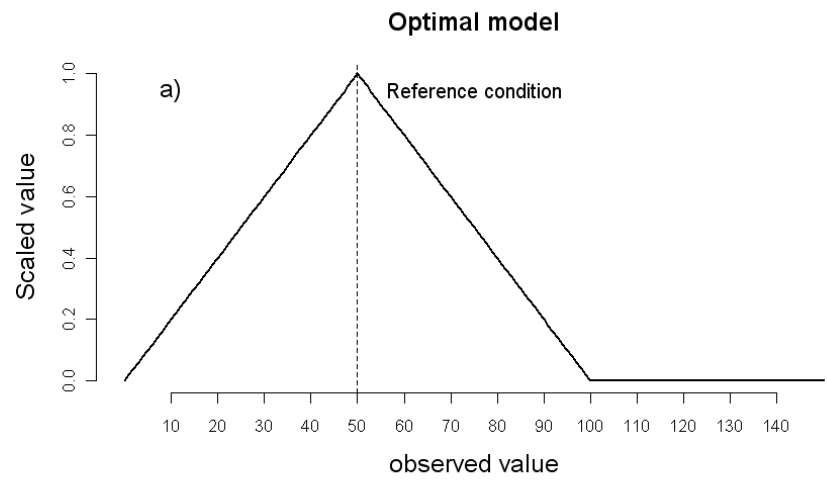
i = species

j = ecosystem

k = municipality, area

Uncertainty: 25 and 75 %  
quartiles

# Several scaling models: several way of using the reference condition.

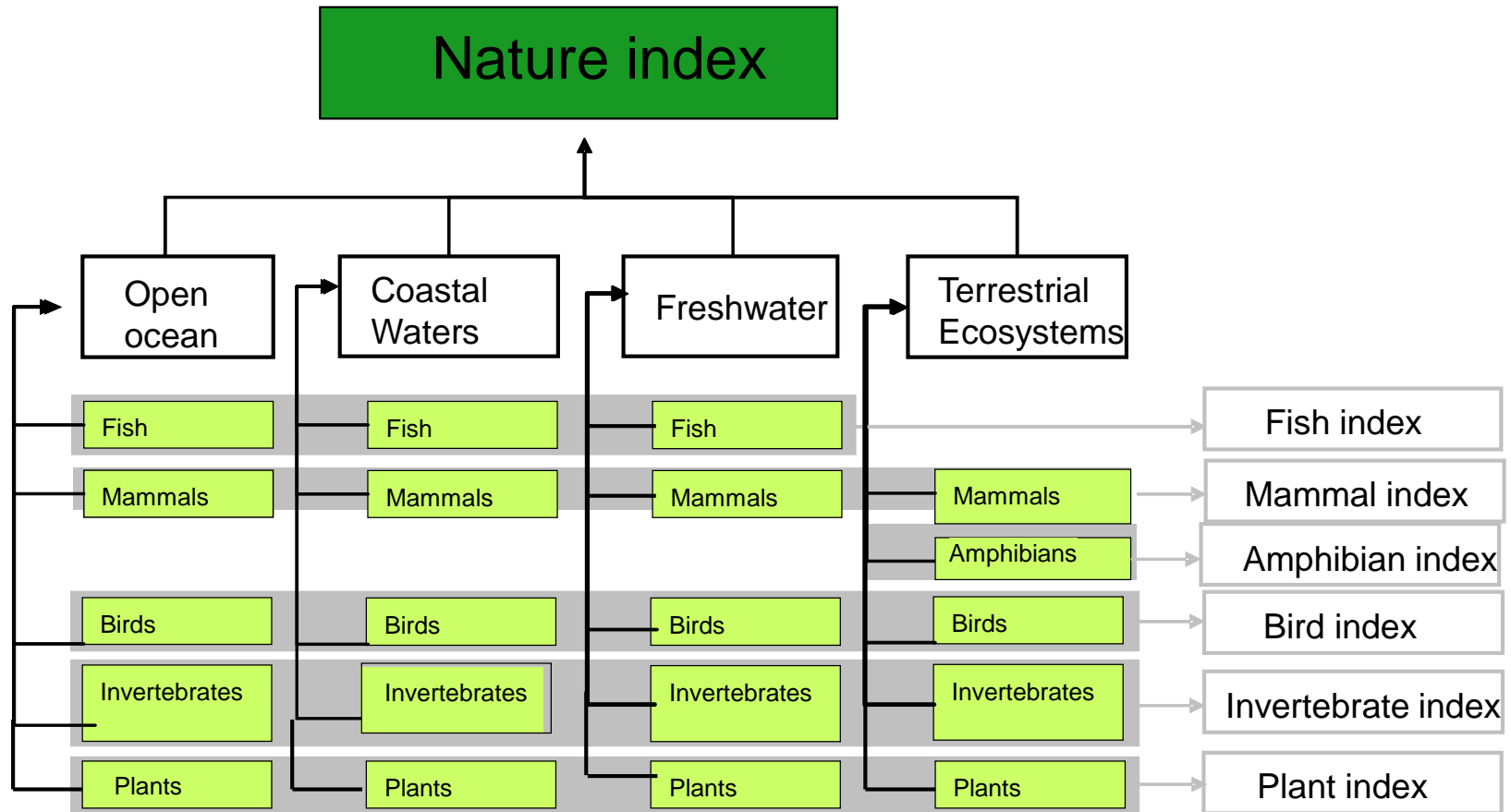


**Reference state ist the "ideal" state for the ecosystem. Model decided by each expert.**

# Nature Index

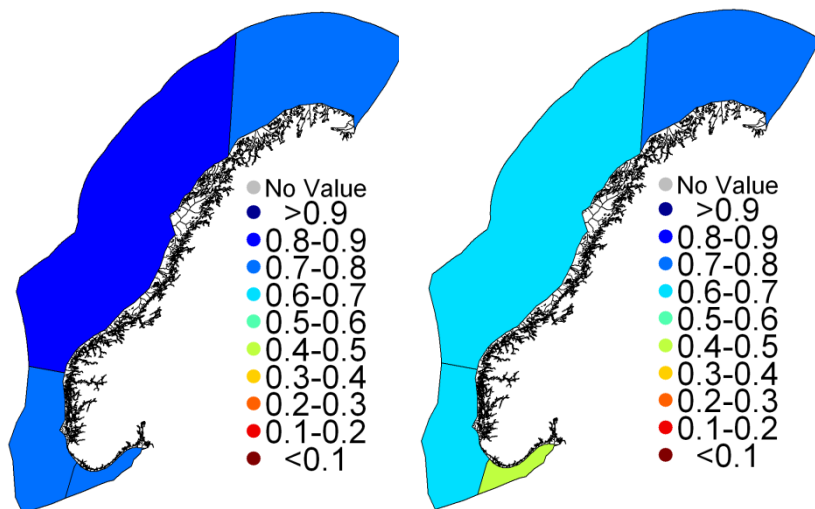


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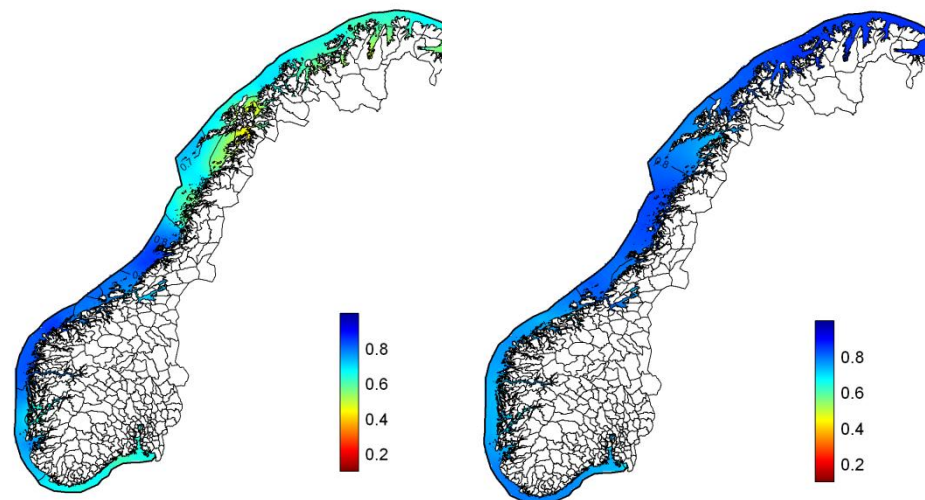


# Marine ecosystems 2010

Sea bottom and pelagic



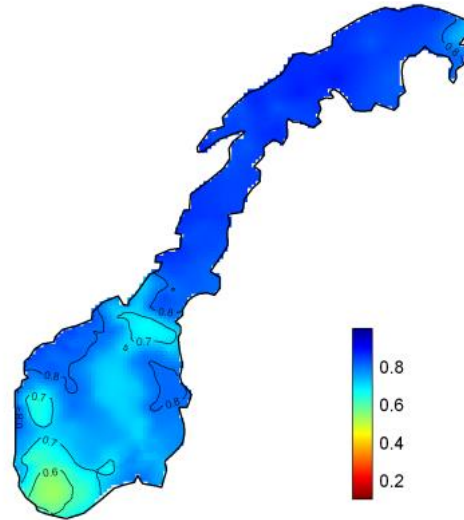
Coastal waters bottom and pelagic



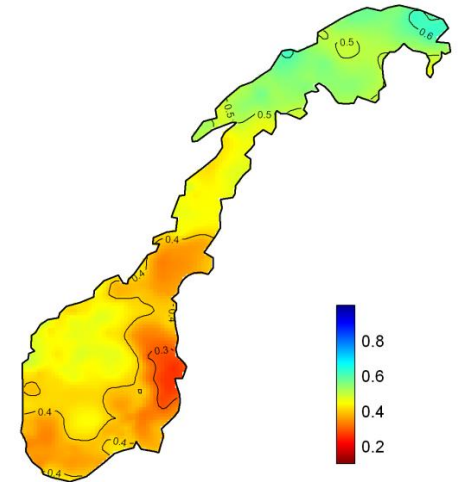
# Terrestrial ecosystems

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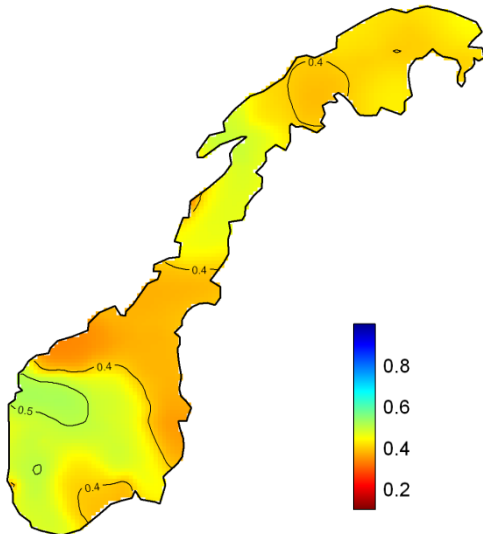
Freshwater



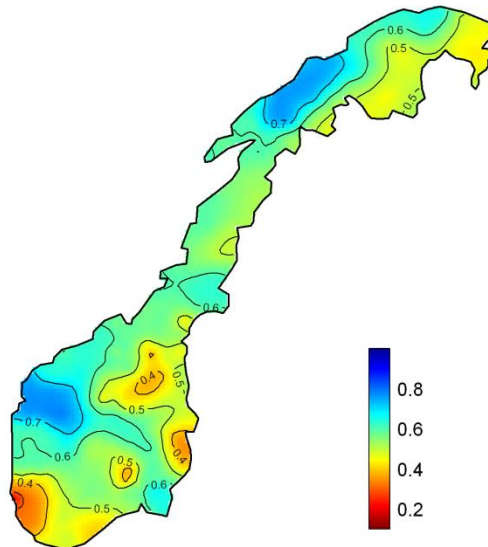
Open lowland



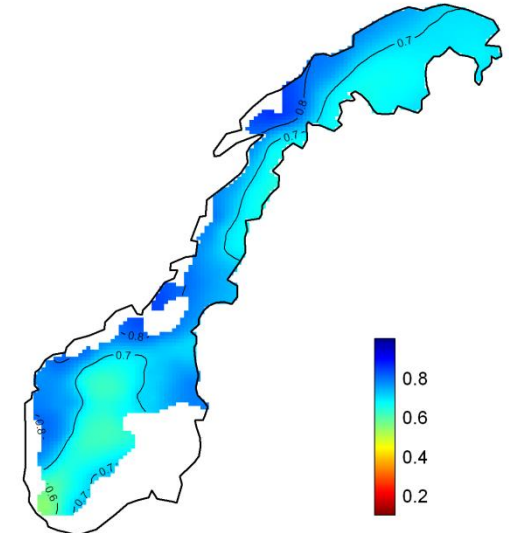
Forest



Marsh



Mountains



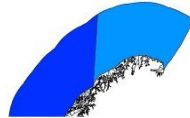


# State of biodiversity 2010

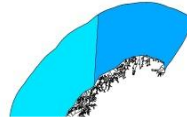


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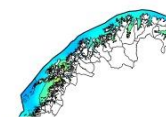
Havbunn



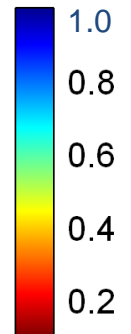
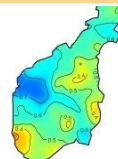
Hav-pelagisk



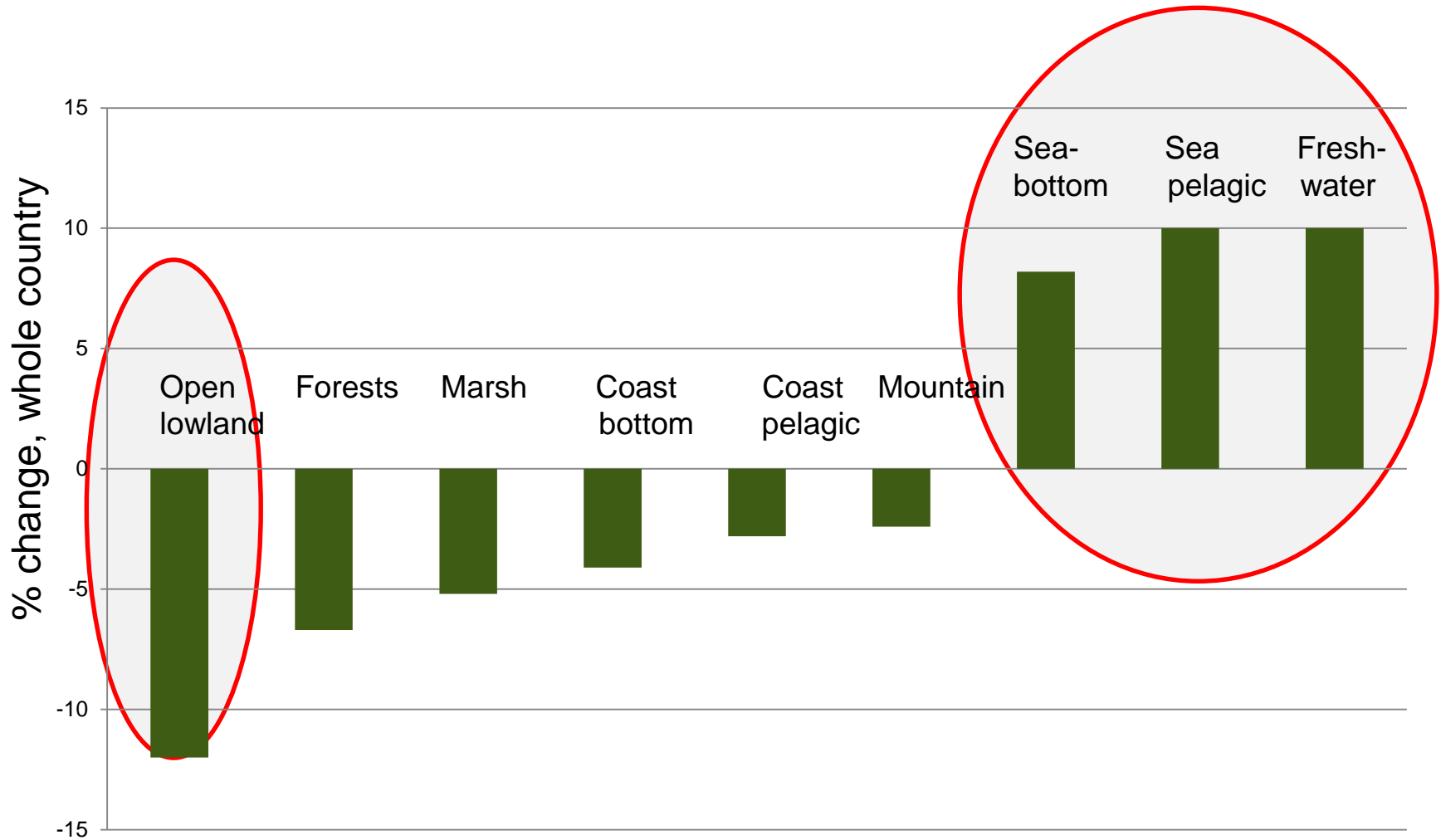
Kystvann-bunn



NI-values all Norway	Ecosystem
0,70-0,80	Sea bottom Coastal waters, pelagic Freshwater Mountains
0,60-0,69	Costal waters, bottom Sea, pelagic
0,50-0,59	Marsh
0,40-0,49	Open lowland Forests



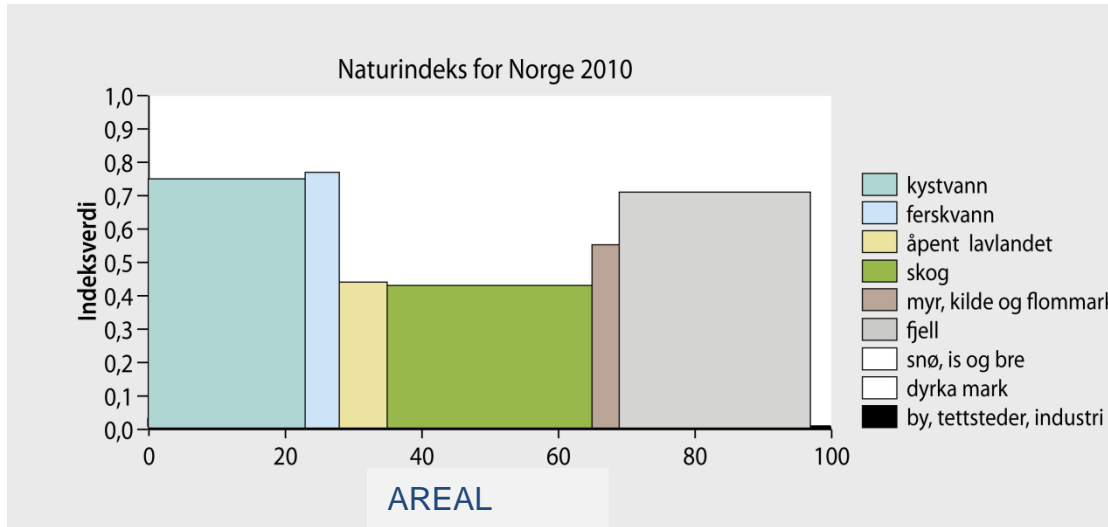
# % change from 1990 to 2010



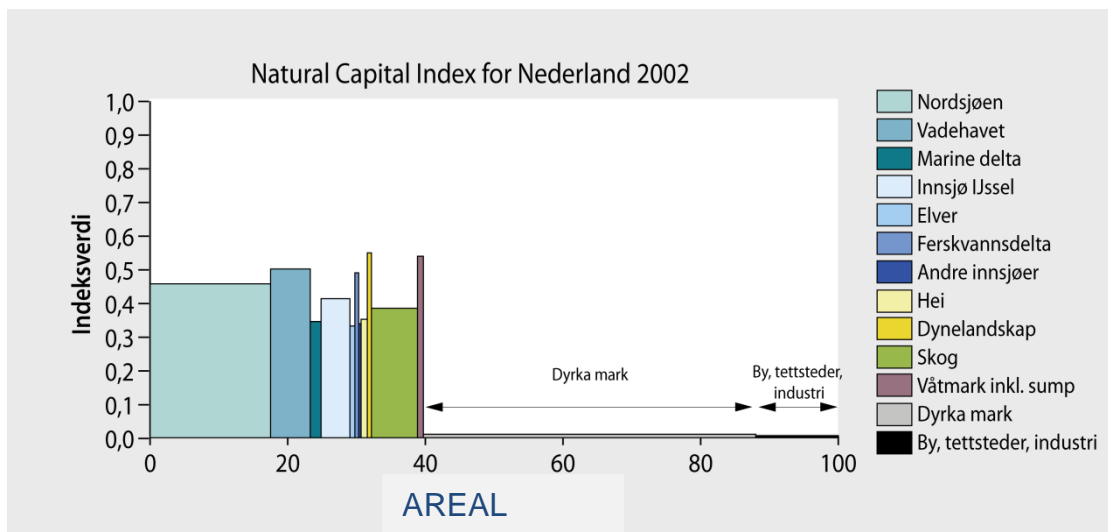
# State of biodiversity: Norway and Netherlands



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Ut til 1 nautisk mil



Ut til 12 nautisk mil

# What are new in the methods?



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## Similarities

Major ecosystems

Reference is low impacted nature/ traditionally managed.  
Value set for each indicator

State is measured by relative changes in population

- Water Frame Directive
- Living Planet Index
- Natural Capital Index/ Globio
- Biological intactness Index.

## New aspects

Criteria for what species to include

Both data and expert judgements

An uncertainty level is included for all indicators

3 different scaling models

Includes open sea

Questions on future development 2020

Includes a cross sectoral research institutions