

# Biodiversity Accounting

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Presentation  
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# How is state and trends of biodiversity usually communicated?

- Overview reports:
  - Indicator by indicator is presented, species by species.
  - The overview is presented as text only
  - Also, lack of overview
  - Only crisis are reported in the media and to the public
- Why this fragmented presentation?
  - Lots of biodiversity data (monitoring, research, observation knowledge)
  - Data been gathered with different methods
  - Monitoring often focuses on bad areas, not area representative
  - Data not easily accessible
  - Not any good methods for integrating existing knowledge (data, expert judgement and research results)
- A system of biodiversity indices:
  - Is cost-effective if we can use as much of existing knowledge as possible
  - Reflects the overall trends without giving focus to a particular species

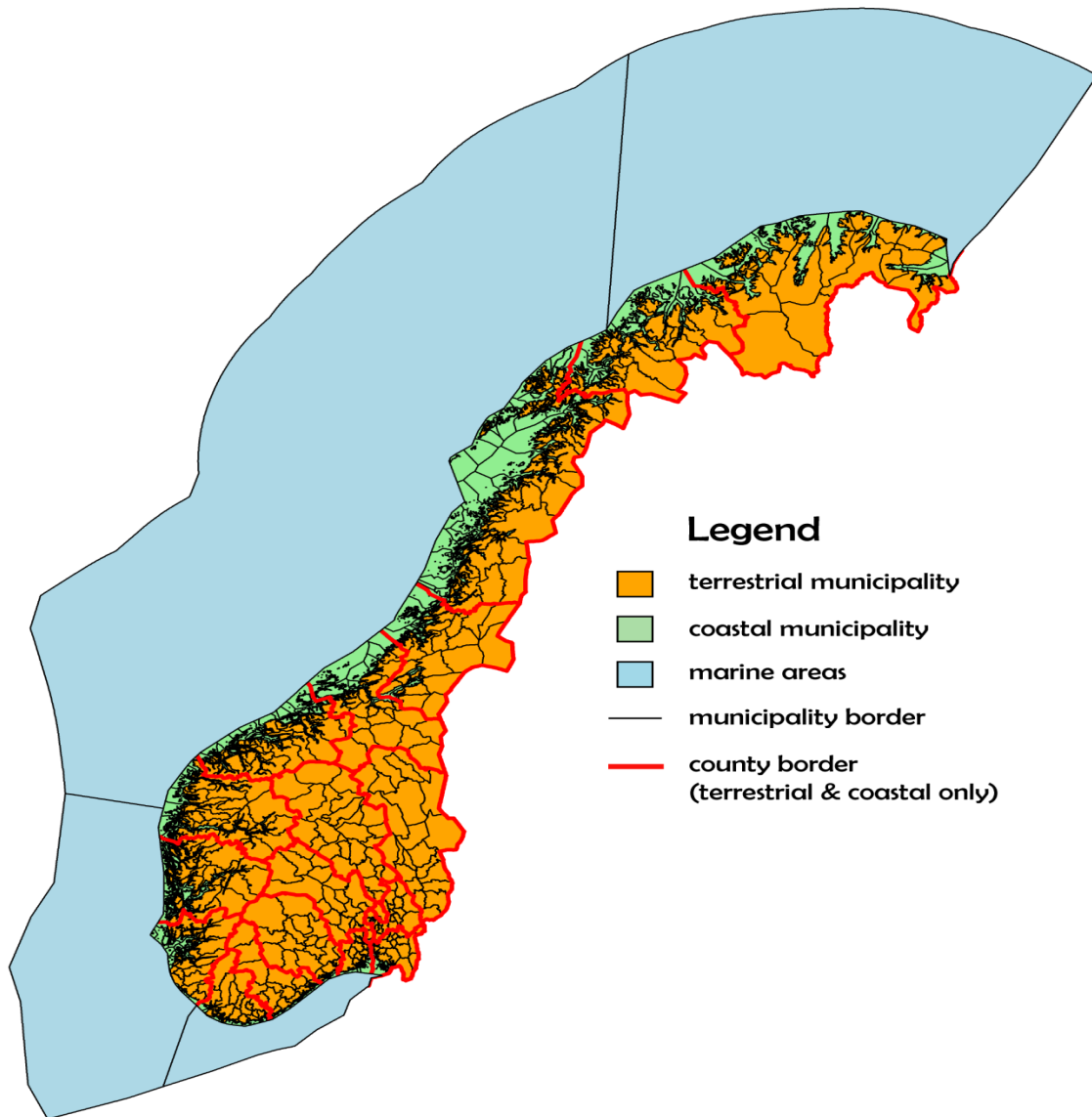


# Biodiversity Indices - a scientific method

Statistical Indices: The Simpson Index (1948), The Shannon Index 1949

Simple species Indices: Wild Bird Index (1970), Living Planet Index (1970), Red List Index

More Complex Indices: Index of Biotic Integrity (1981), The Marine Trophic Index (1988), The Water Quality Index (2001), The Natural Capital Index (2002). The Biodiversity Intactness Index (2005), 2006, 2008), Mean Species Abundance Index (2009), The Nature Index (2011)



### 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

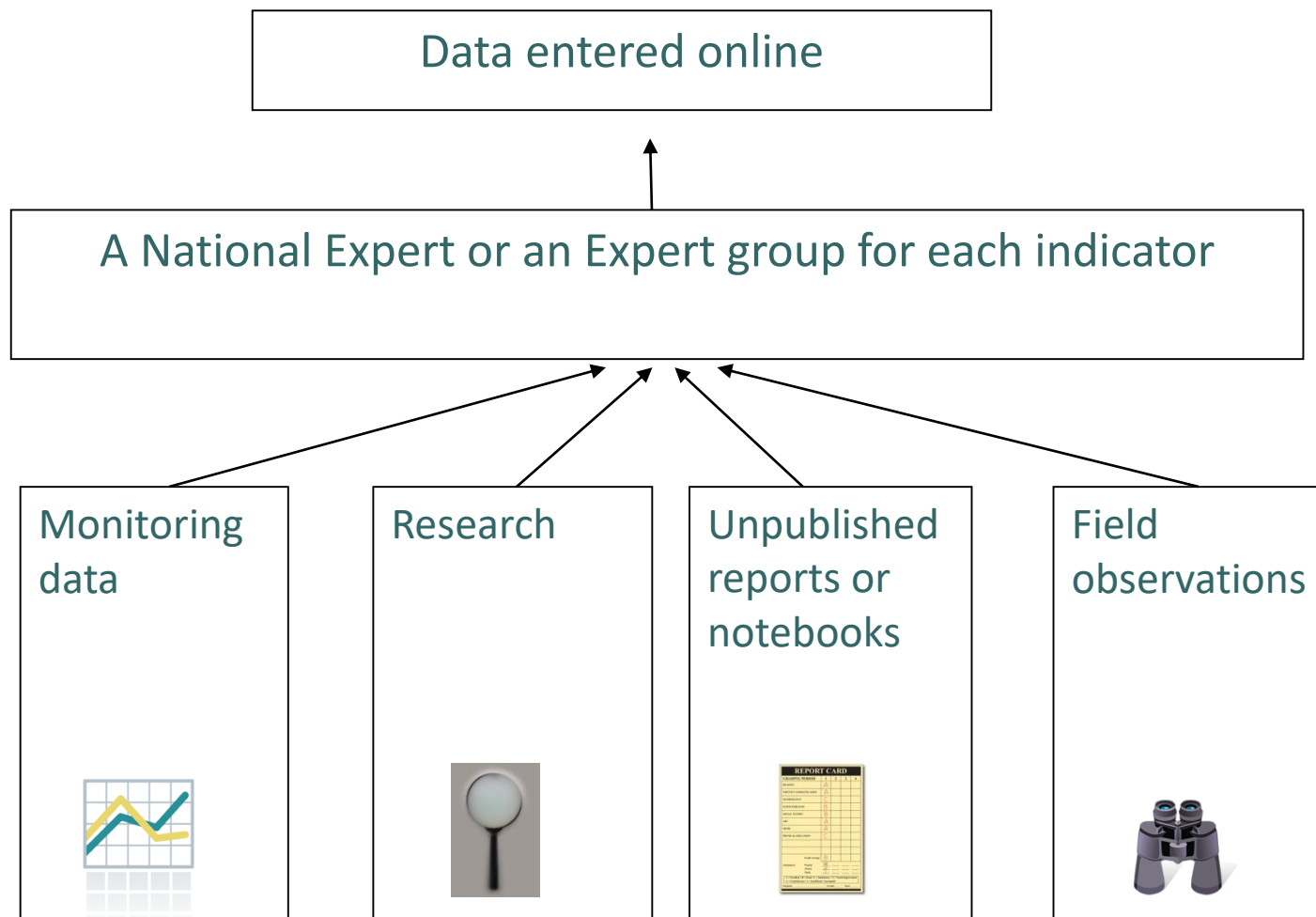
t= time

i= species

j= ecosystem

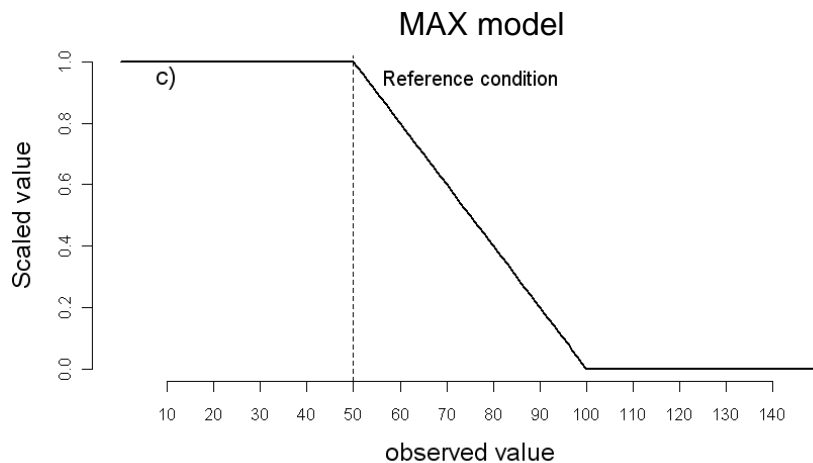
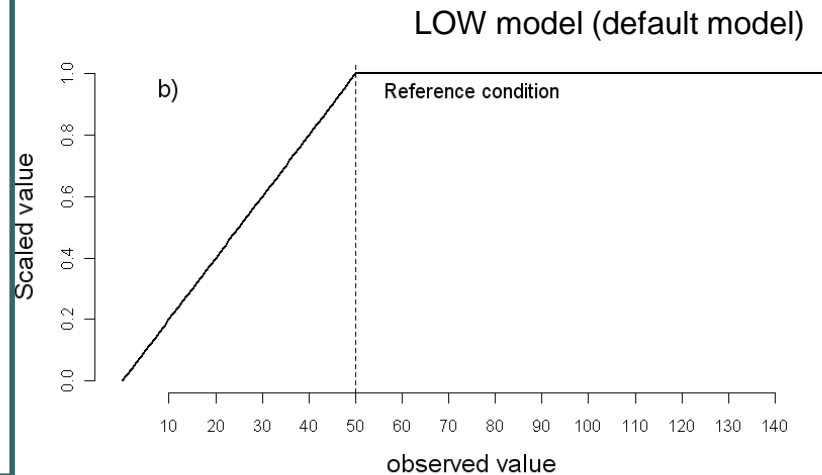
k= municipality, area

Uncertainty: 25 and 75 %  
quartiles

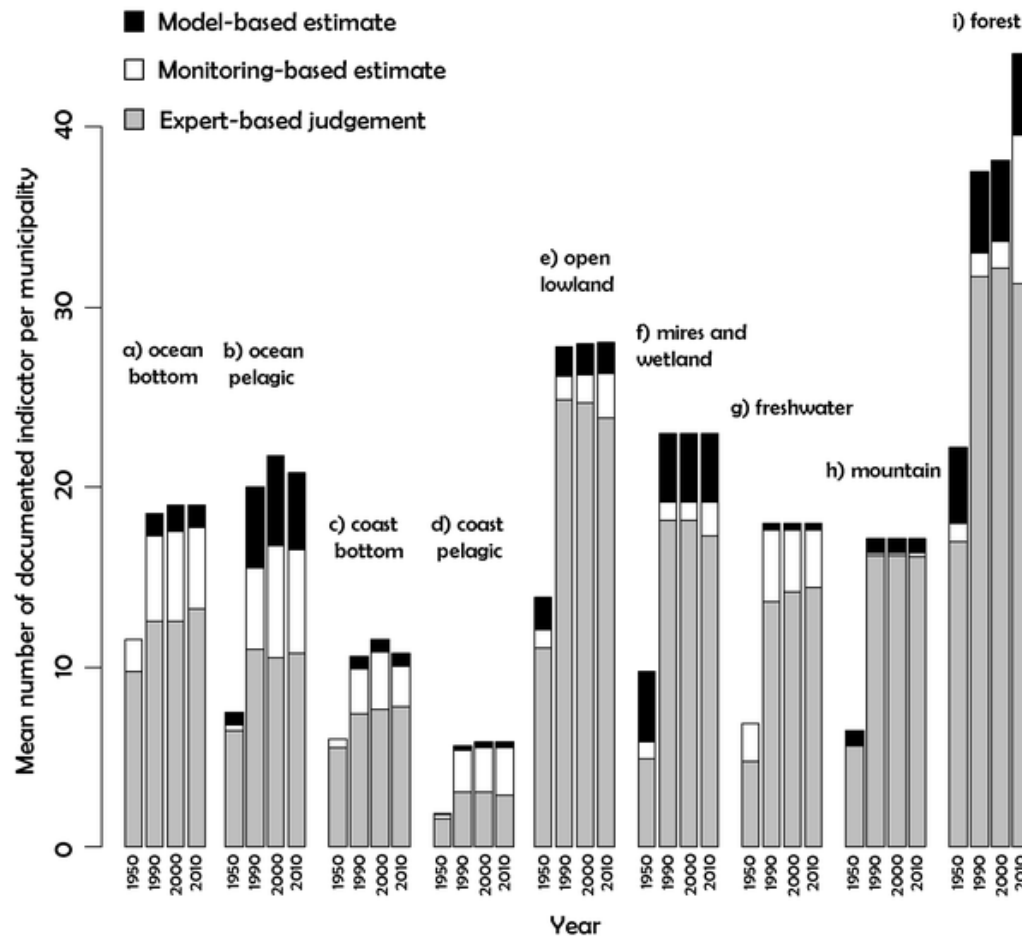


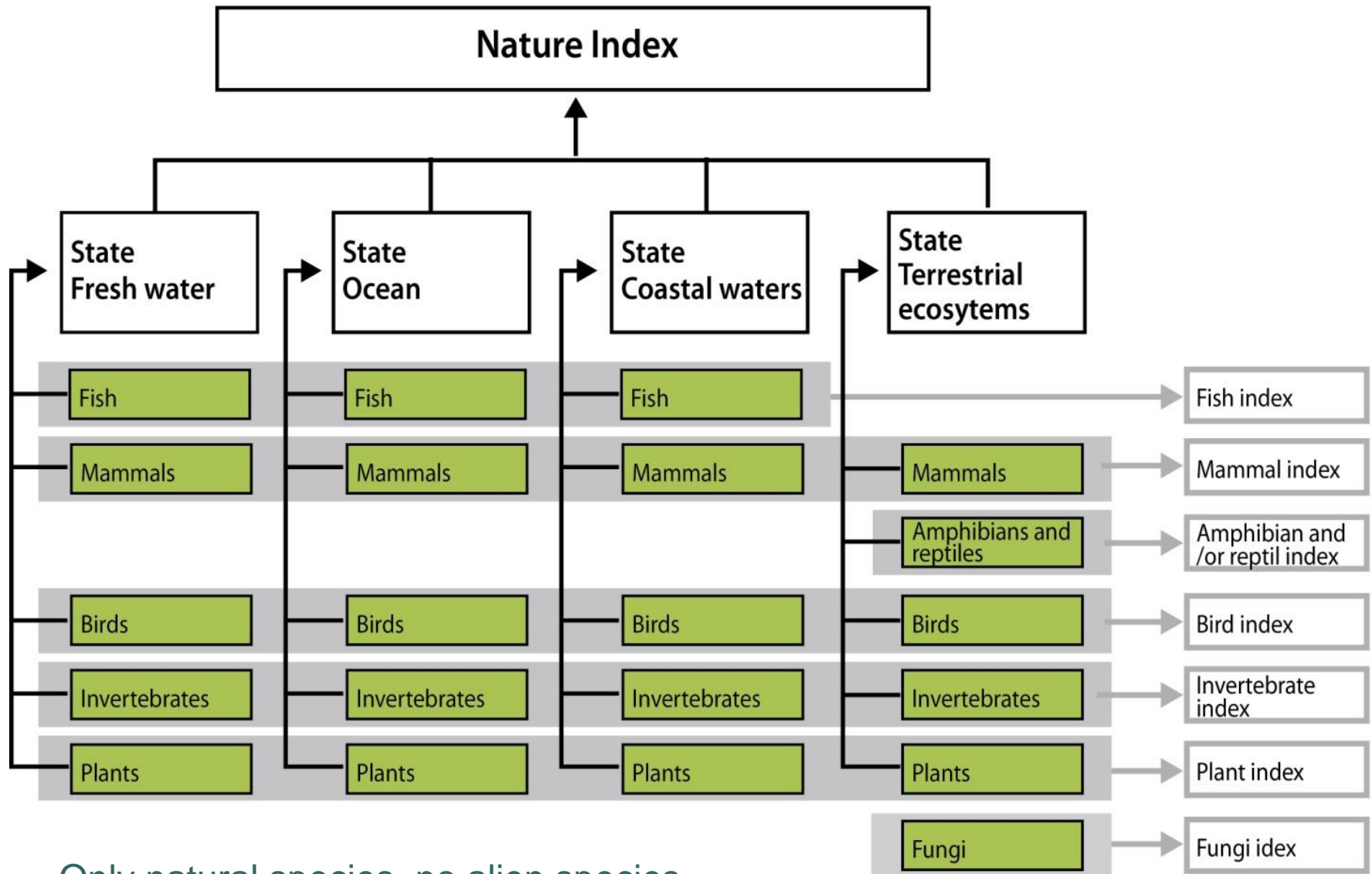
The indicator value is scaled by its value at the reference state;

- Intact nature
- Nature with low human impact
- Sustainable populations
- Carrying capacity



# What kind of data have been used?





Only natural species, no alien species  
Values scaled 0 -1, where 1 is intact ecosystems



# The Nature Index on the political agenda

- Nature Index was published in 2010 after a 3 year period of development. Initiated and financed by the Government
- Adopted as an **indicator of sustainable development** by the Ministry of Finance 2011
- Adopted as **indicator of major ecosystems** by the Ministry of Environment 2011. Rearranged their management issues

## Earth from Saturn

