

Ecosystem services mapping for spatial development planning as risk management – Talotinsky case

MB1: Promoting of ecosystem services of Arctic wetlands for sustainable development

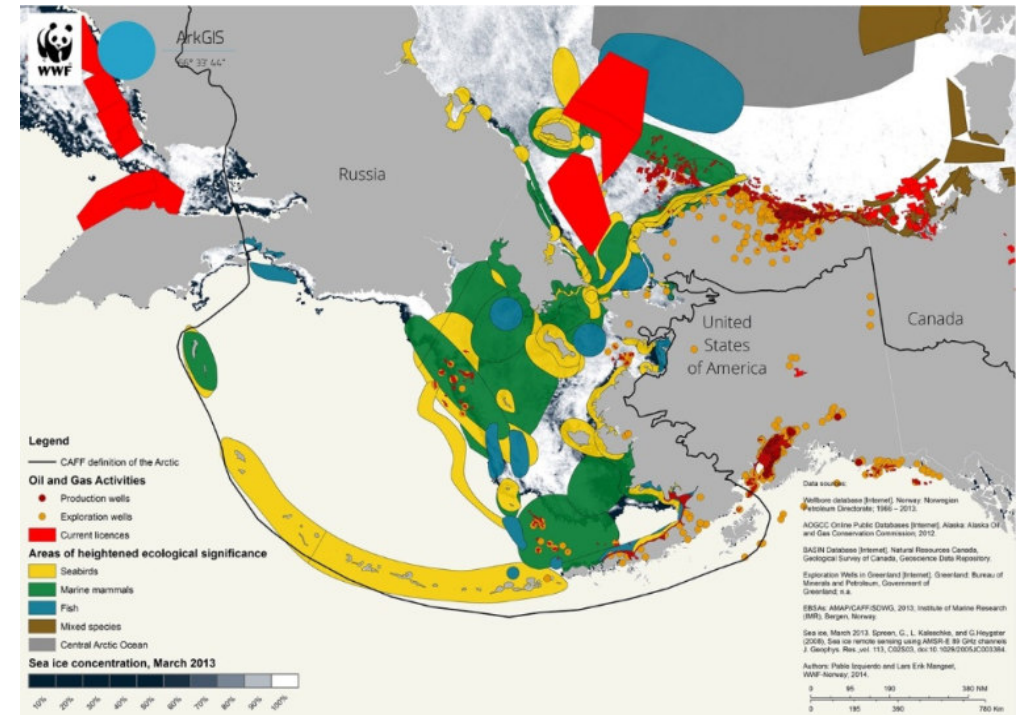
Anton Chistyakov, EthnoExpert

Geo mapping



Modern geo mapping technologies could help in **revealing how the ecosystems functions and services are connected to the ecosystem classes** and distributed in the space at designated development area.

This approach application inspires **clear design solution identification**, which reduces possible risks, ensures project's sustainability for a long time and maintains favourable social and environmental conditions.



Talotinsky case

- 🔍 Pilot study has been carried out at the **East-Talotinsky site** in the Timan Pechora area (Nenets Autonomous Okrug) under a **Collaborative Partnership Agreement** between Wetlands International and Shell International Exploration and Production B.V.



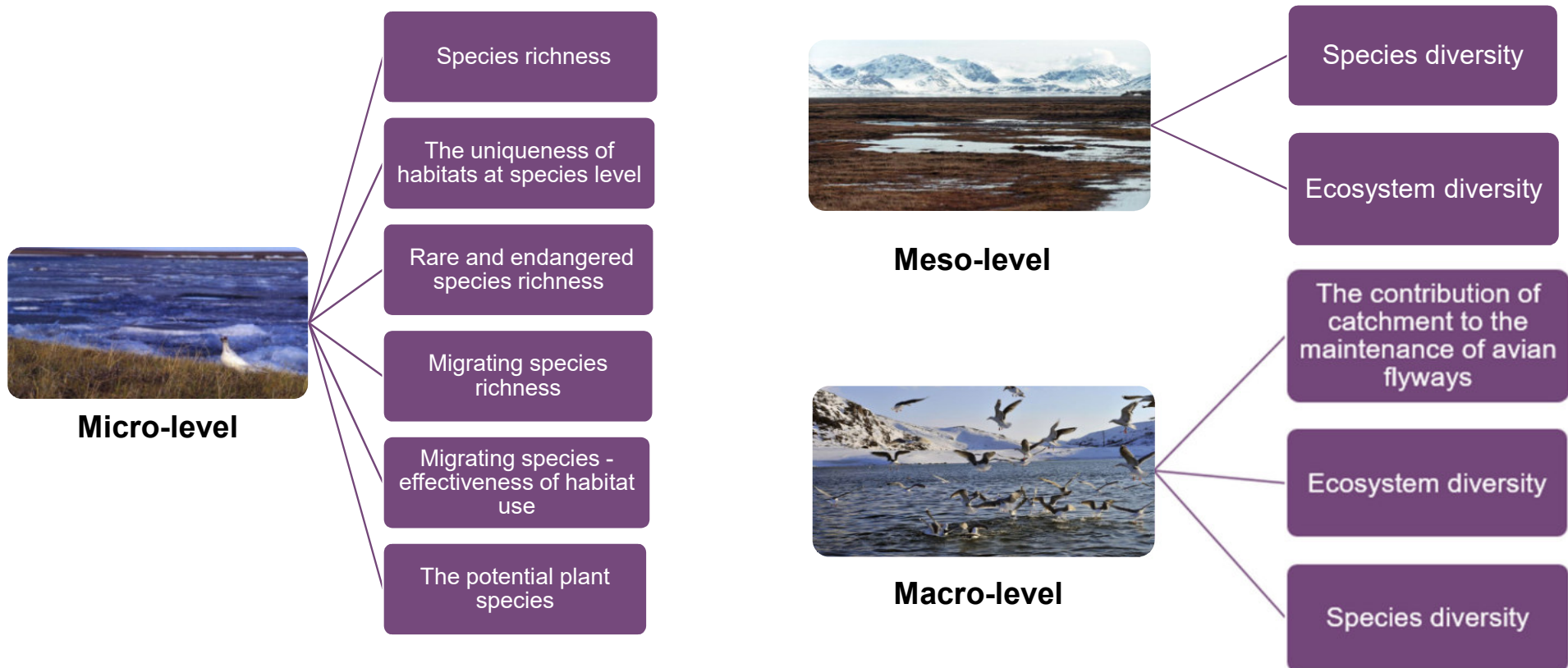
Talotinsky case

The project introduces **the Ecosystem Functions and Services Mapping Exercise (EFSME)**, which involves spatial mapping of sensitivities and risks. It aims to map ecosystems on the basis of their capacity to perform certain ecosystem functions.



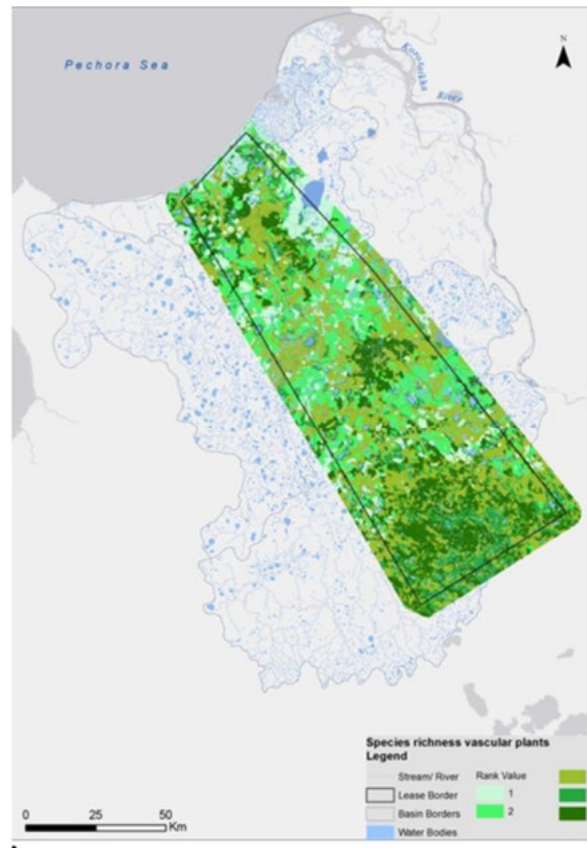
Talotinsky case. Biodiversity

The biodiversity related attributes are assessed on the basis of field data and information from the literature.

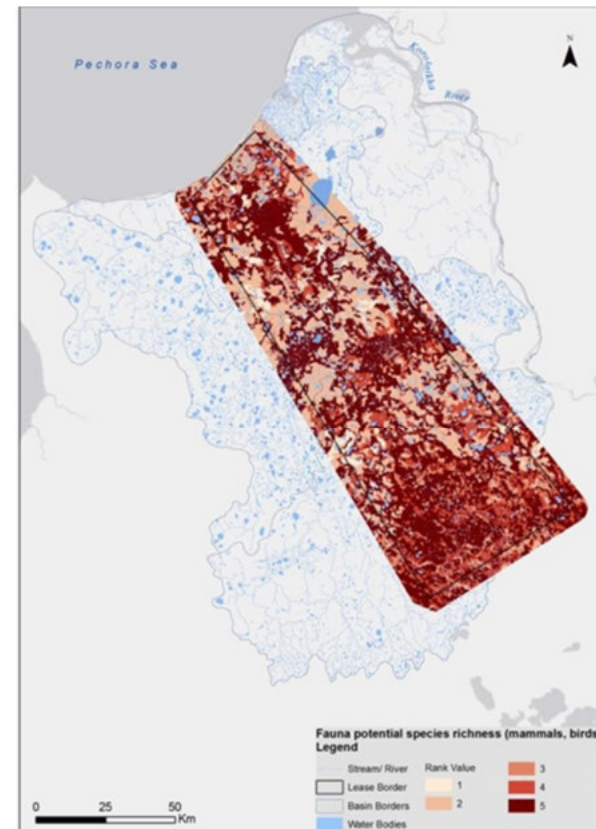


Talotinsky case. Biodiversity

Species richness
at micro-level:
vascular plants

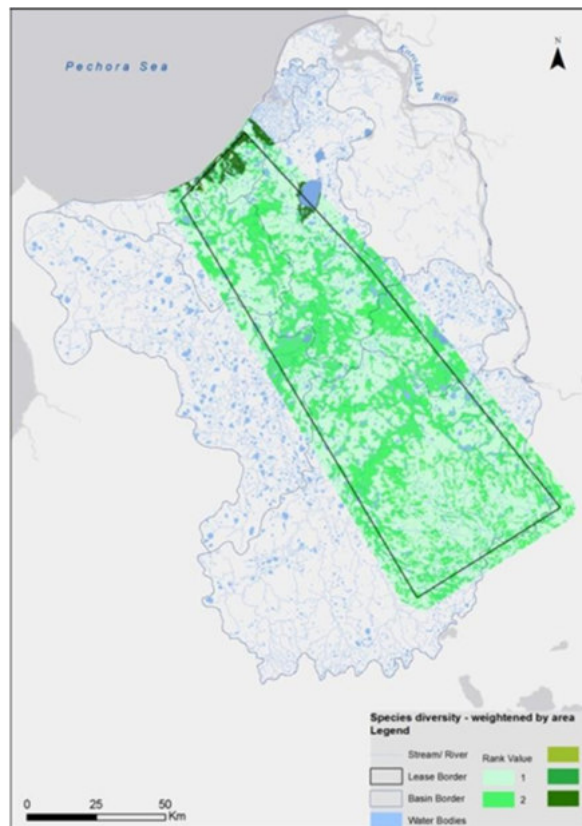


Species richness
at micro-level:
mammals and
birds

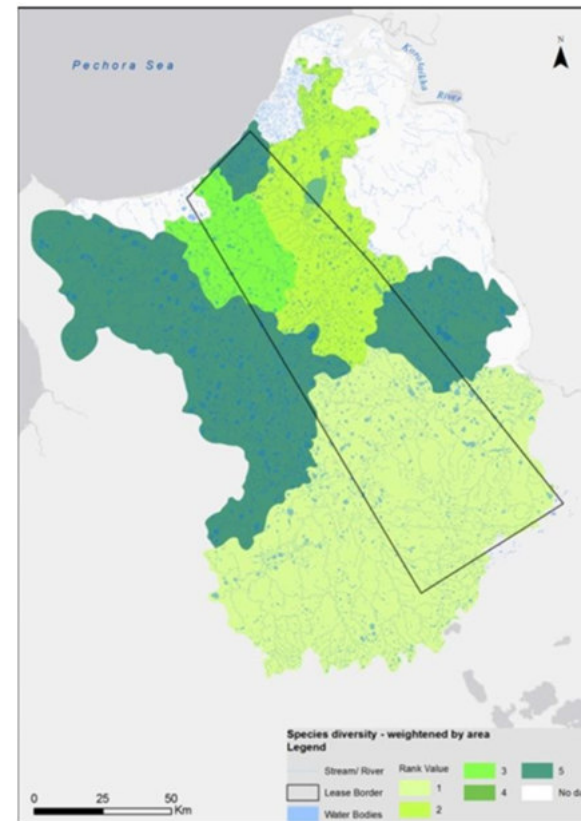


Talotinsky case. Biodiversity

Species richness
at meso-level

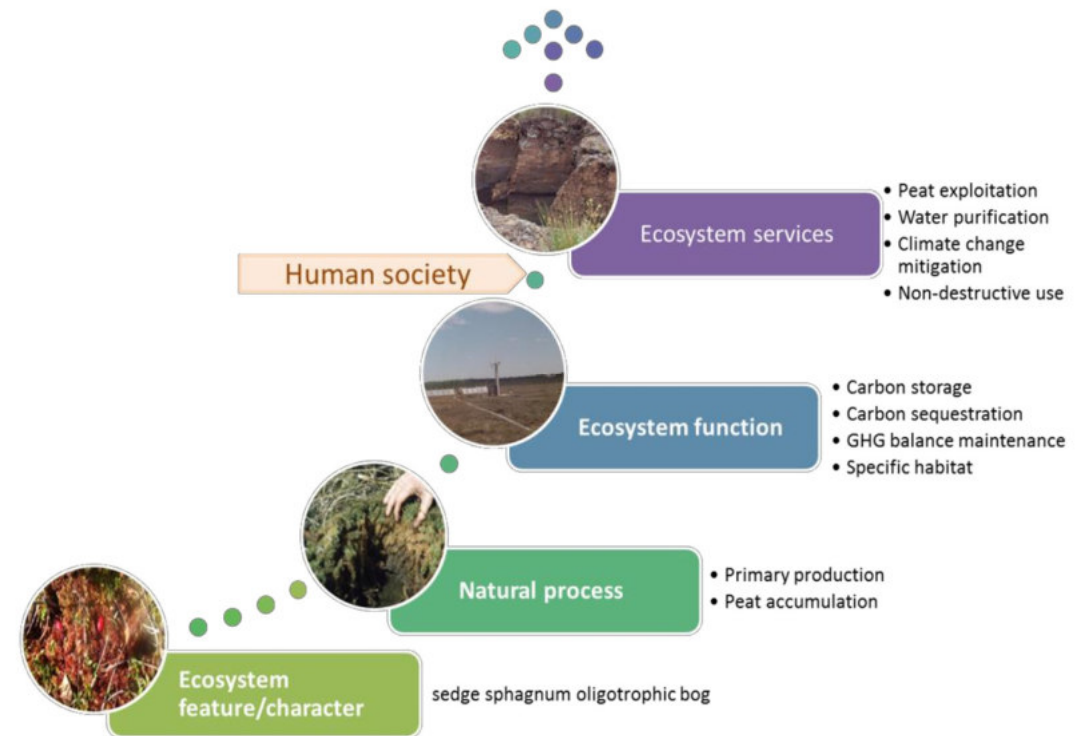


Species richness
at macro-level



Ecosystem services mapping

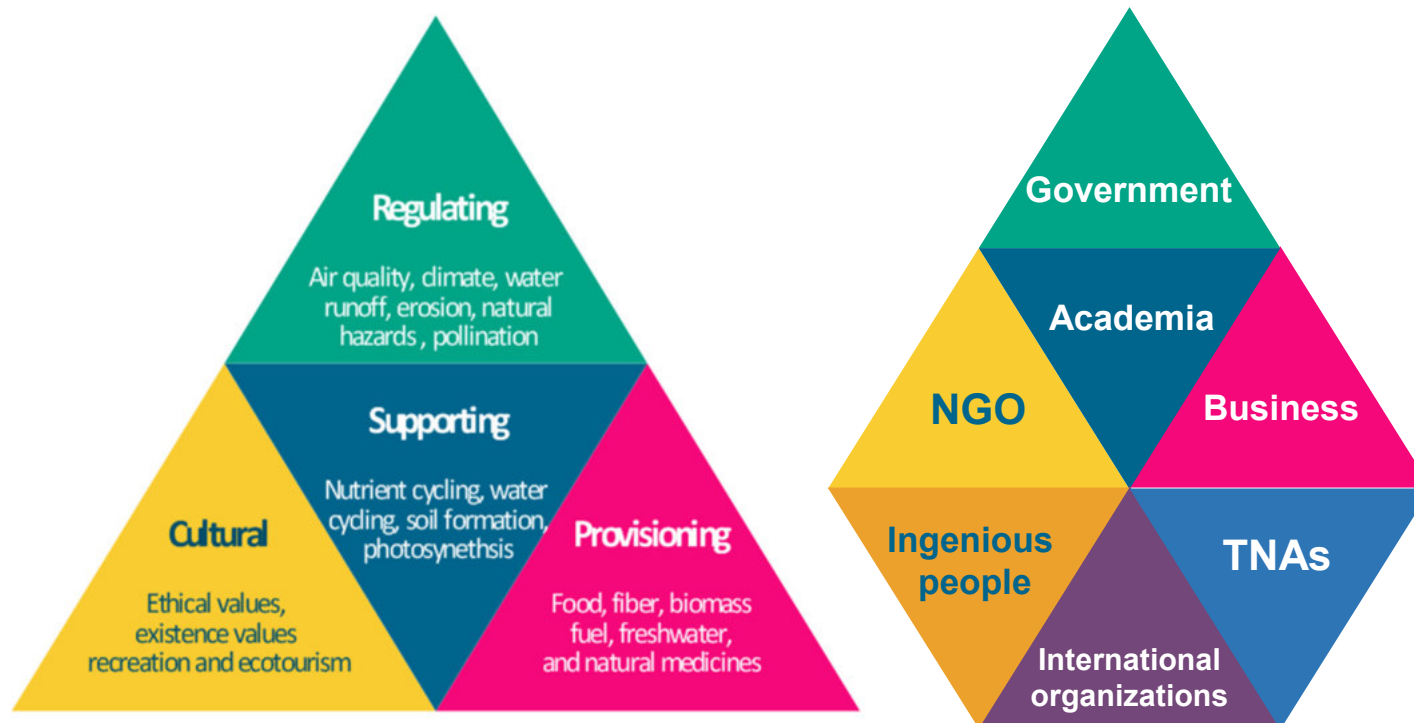
- The first step in mapping ecosystem services is the **construction of a map of ecosystem functions**.
- The map is then merged with the outcomes of **stakeholder analyses** to enable interpretation of the information on ecosystem functions in this context.
- The practical steps involve **applying knowledge** about the connections between structural characteristics (or ecosystem types), **natural processes, natural functions** and **stakeholders' demands** for these functions.



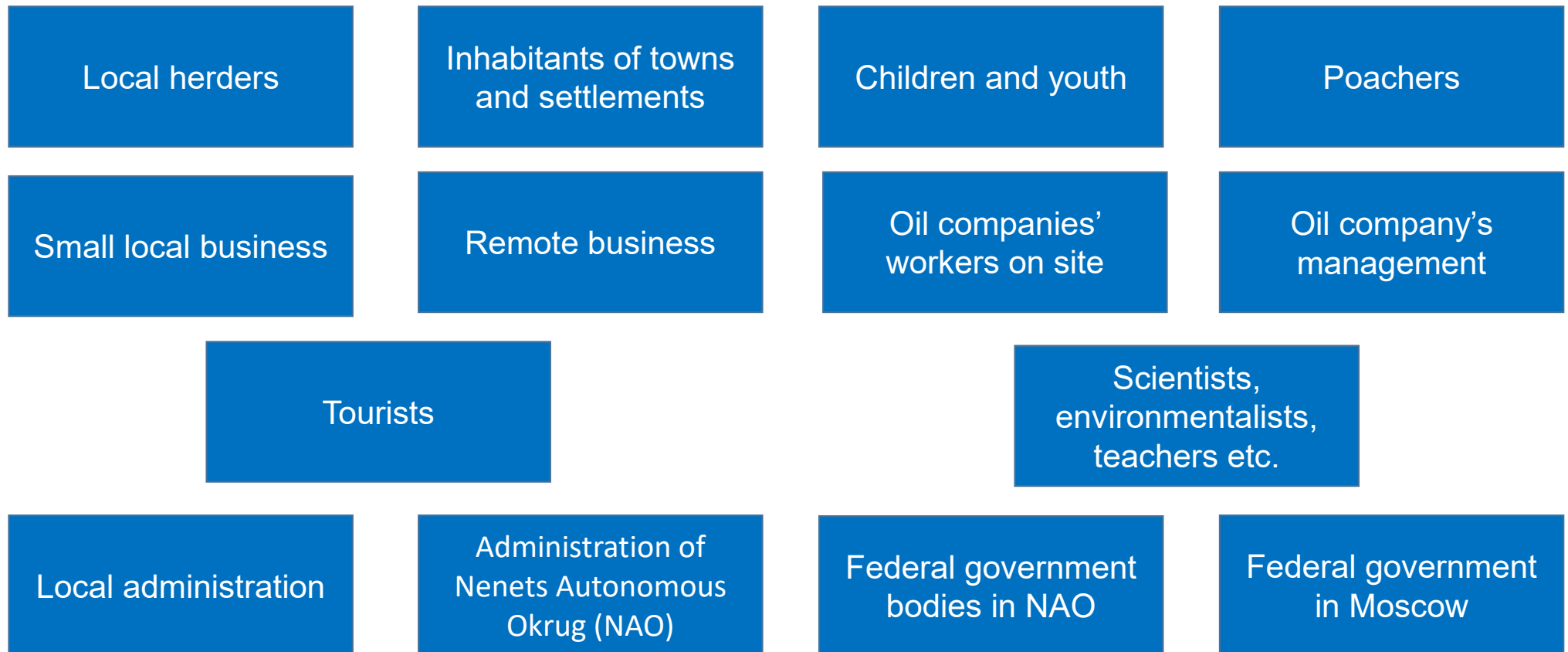
Ecosystem services and stakeholders



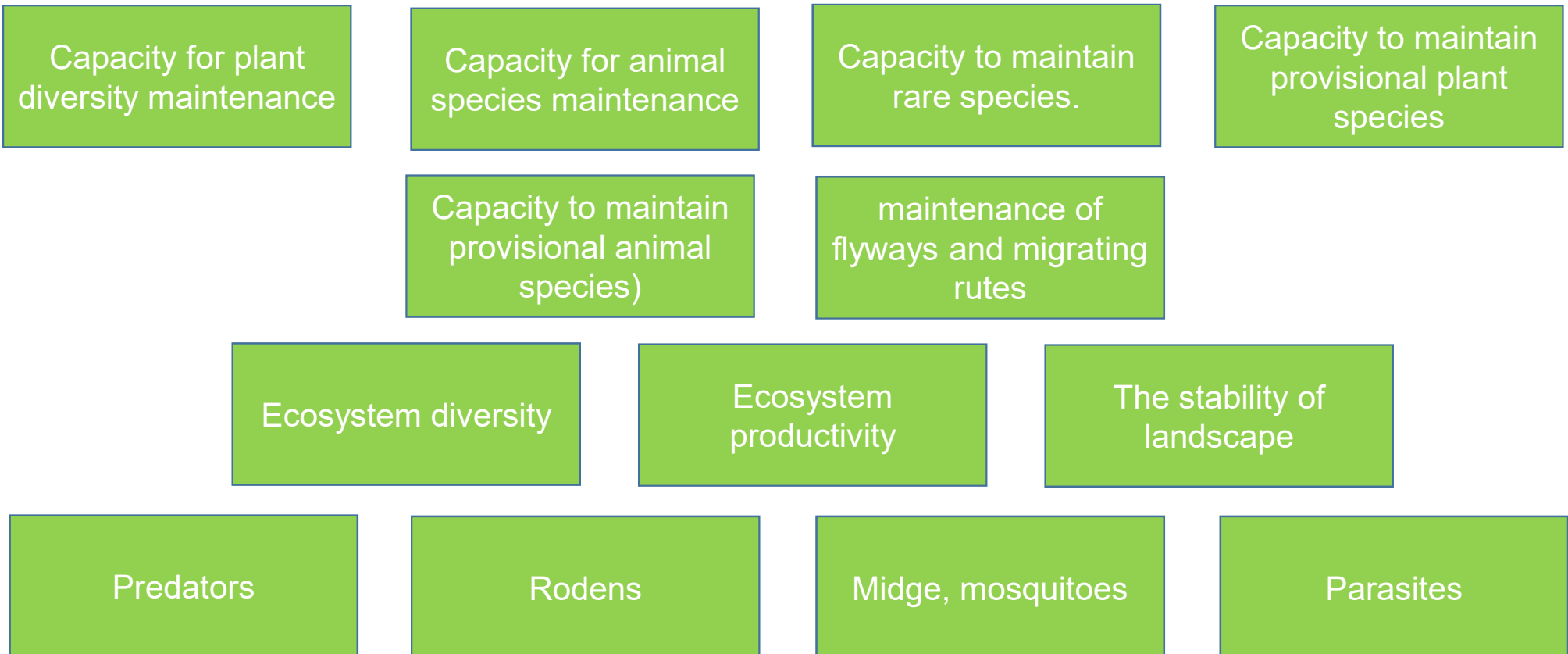
Key methodology concept is based on strong link between **ecosystem functions and ecosystem services**, which could be discovered through stakeholder needs and expectations research and analysis.



Stakeholders



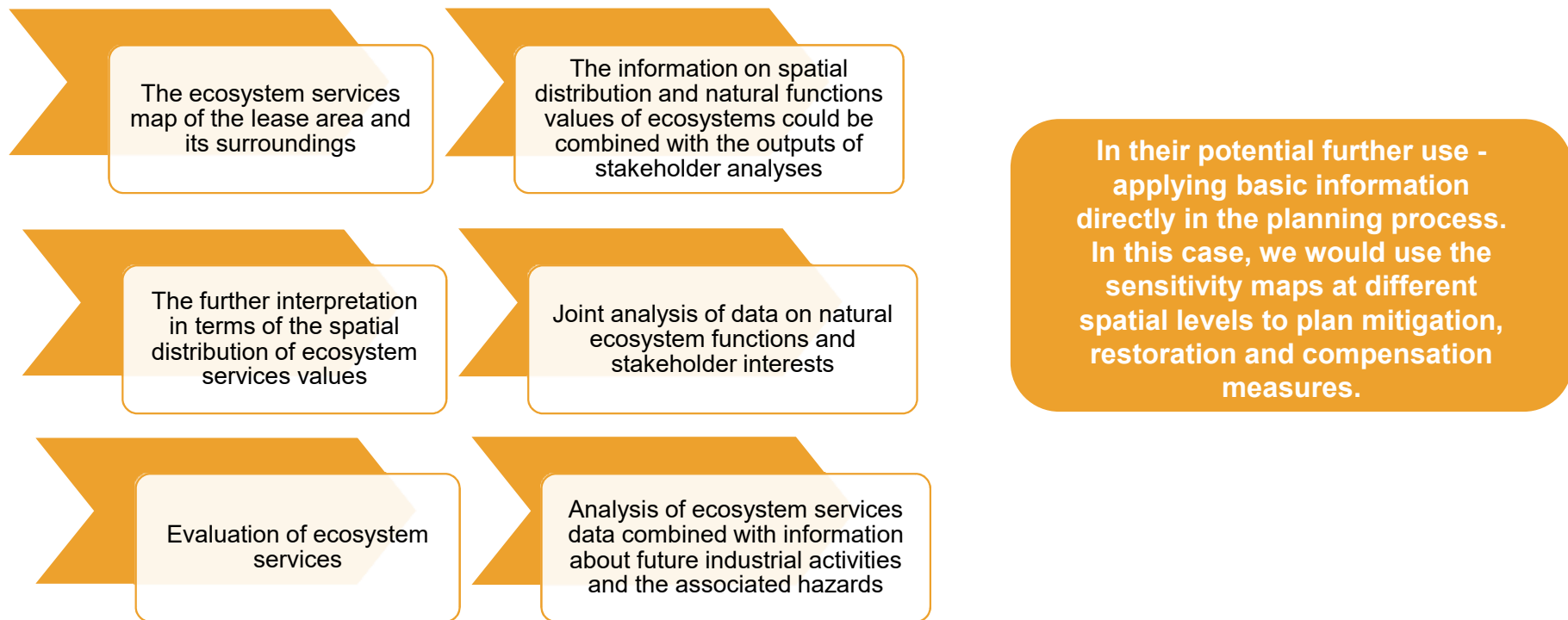
Natural Functions



Stakeholders and Natural Functions

	Capacity for plant diversity maintenance	Capacity to maintain rare species	Midge, mosquitoes
Local herders	Variety of seasonal pastures	No	inconvenience for people and reindeer
Inhabitants of town and settlements	No	environmental education	inconvenience for people
Tourists	the attractiveness of the area to visit (large species diversity)	ecological tourism	inconvenience for people
Small local business	No	No	No
Local administration	No	No	No
Oil companies management	Requirements of environmental legislation and procedures for EIA, environmental monitoring	Requirements of environmental legislation and procedures for EIA	No
Administration of NAO	Biodiversity Conservation Programs	Protected Areas network development	No

Solutions



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