Merekaitsealade haldamise tulemuslikkuse hindamine – project PROTECT BALTIC.

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"Kuidas hinnata looduskaitse tulemuslikkust? Projekti „Elurikkuse kaitsemeetmete tulemuslikkuse hindamise raamistik Eestis“ Eesti lõpuseminar
08.05.2024
Tartu Ülikooli Oecologicum (J. Liivi 2, Tartu), auditoorium 127

Protect Baltic - an ambitious approach for implementing ecologically coherent and effectively managed MPAs in the Baltic Sea

PROTECT BALTIC
Preserve Revive Thrive

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PROTECT BALTIC and the Bigger Picture

Addresses two aspects of the triple planetary crisis: biodiversity loss and **climate change.**

Overall aim: sufficient spatial protection and restoration of the marine environment

EU level: Supports implementation of the EU Biodiversity Strategy, MSFD, HBD, CFP, and the upcoming EU restoration law.

Regional sea level: Fully or partially directly implements 32 of 199 BSAP actions, and provides support to many more.

Global level: SDG 14 (as well as 5, 10 and 13) and the CBD global biodiversity targets for the Baltic Sea countries.

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Project stats

Timeline: mid-2023 (August)-mid 2028 (five years in total)

17 partners covering EE, FI, DE, DK, LT, LV and SE, as well as Coalition Clean Baltic

HELCOM Secretariat coordinating

Total budget: € 8 482 131.25

Primary target group: governing authorities, implementing and planning agencies, site managers, international organizations and agencies

Highly relevant also for: NGOs and economic actors (e.g. fisheries, tourism)

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Project partners

No	Partner organization	Abbreviation	Country
1	Baltic Sea Environment Protection Commission	HELCOM	IGO
2	Aarhus University	AU	Denmark
3	Coalition Clean Baltic	CCB	NGO
4	Danish Ministry of the Environment	MIM	Denmark
5	Federal Agency for Nature Conservation	BFN	Germany
6	Jade University of Applied Sciences	JHS	Germany
7	Klaipeda University	KU	Lithuania
8	Luontopalvelut Parks and Wildlife Finland	MHPWF	Finland
9	Ministry of Climate Estonia	EEMOE	Estonia
10	Ministry of Environment Finland	FIMOE	Finland
11	State Services for Protected Areas under the Ministry of the Environment	VSTT	Lithuania
12	Swedish Agency for Marine and Water Management	SWAM	Sweden
13	Swedish University of Agricultural Services	SLU	Sweden
14	University of Tartu	UT	Estonia
15	Åbo Akademi University	AAU	Finland
16	Finnish Environment Institute	SYKE	Finland
17	AKTiiVS	AKTiiVS	Latvia

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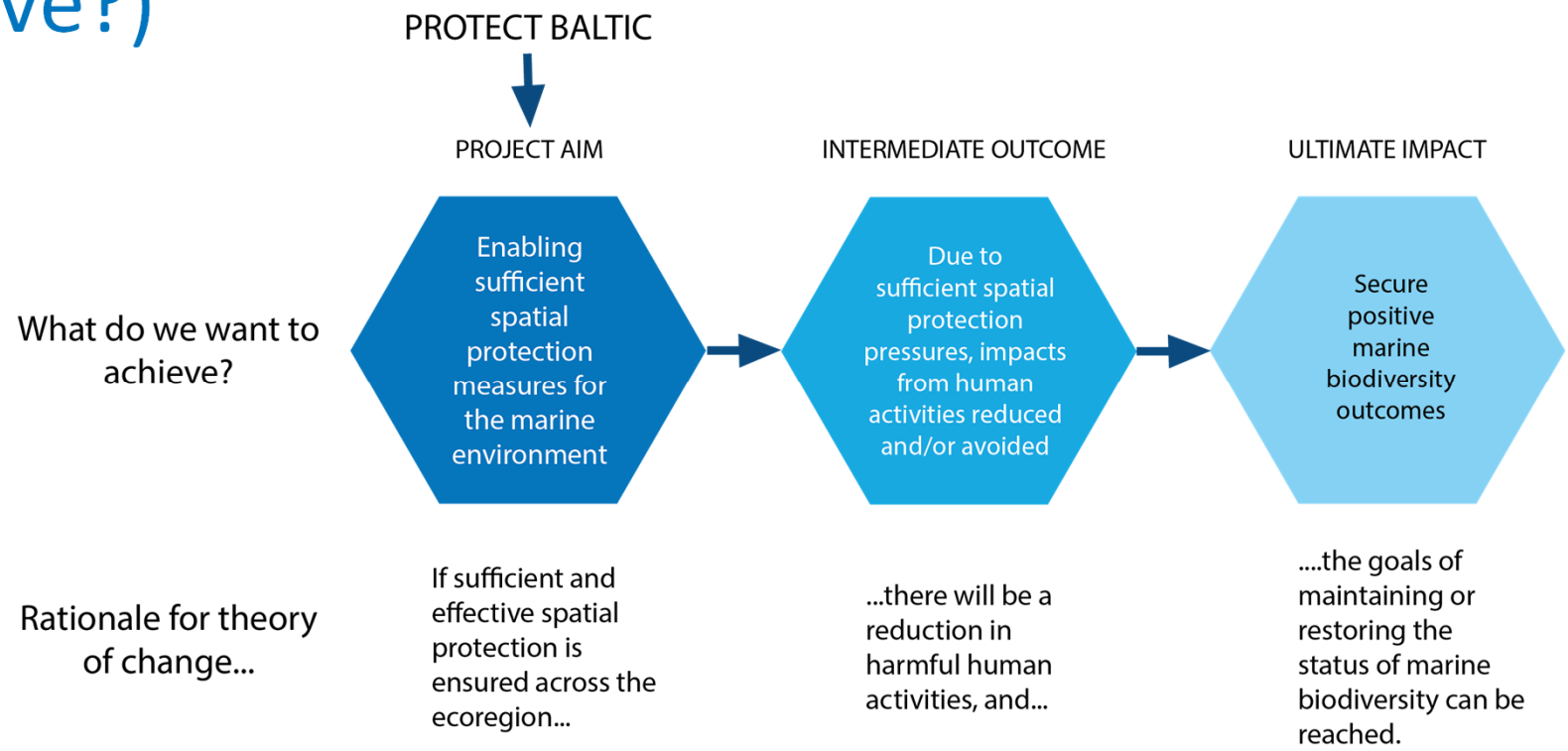
Aim of PROTECT BALTIC (i.e. What are we trying to achieve?)



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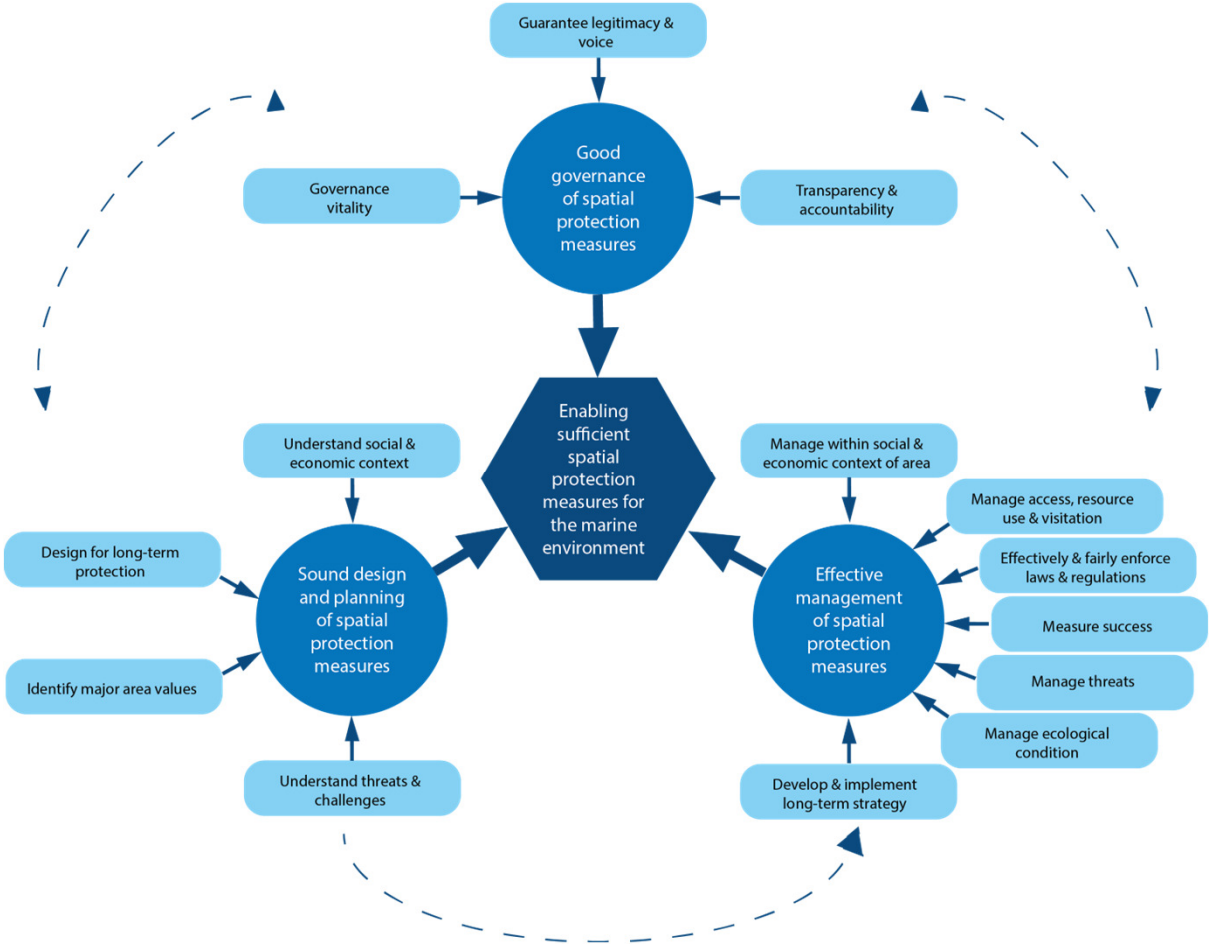
Conceptual framework for PROTECT BALTIC (i.e. what do we have to address to get there?)



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Project logic (i.e. how we plan to do the work)

Phase 1. Establishing a common framework and evidence base

Ensure infrastructure, framework and evidence base to improve practical implementation of conservation measures across the Baltic Sea region.

Phase 2. Establish baselines for marine protection

Establishing and improved understanding of the current baseline, enabling strategic, effective and efficient implementation of conservation efforts.

Phase 3. Gap analysis

Improved understanding of the barriers to progress, enabling targeted strategic, effective and efficient solutions.

Phase 4. Optimizing spatial protection

Producing support for targeted, strategic planning, designation and management of spatial protection to realize the full potential of individual sites and the network as a whole.

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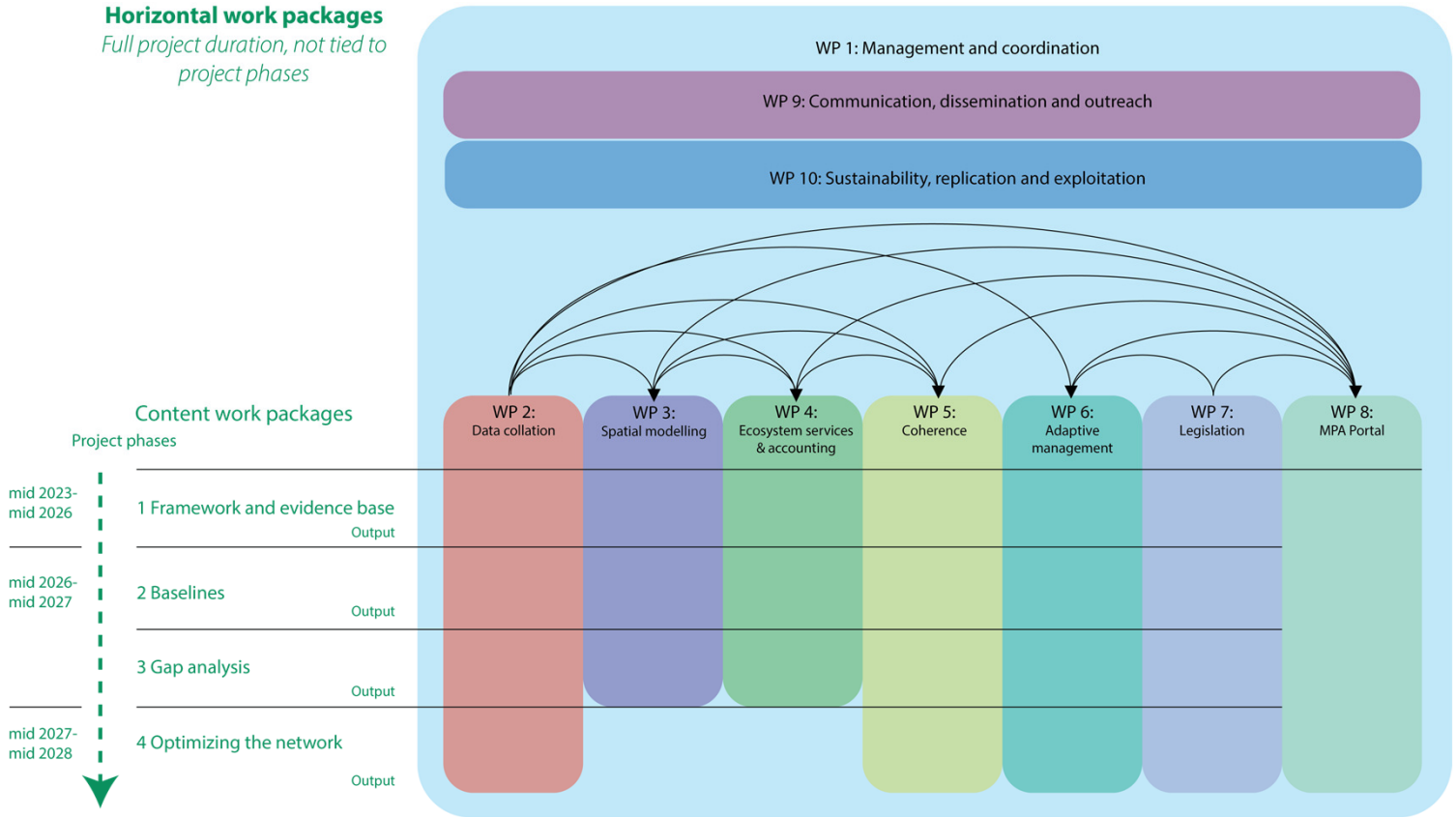
Project structure (i.e. what will we be doing?)



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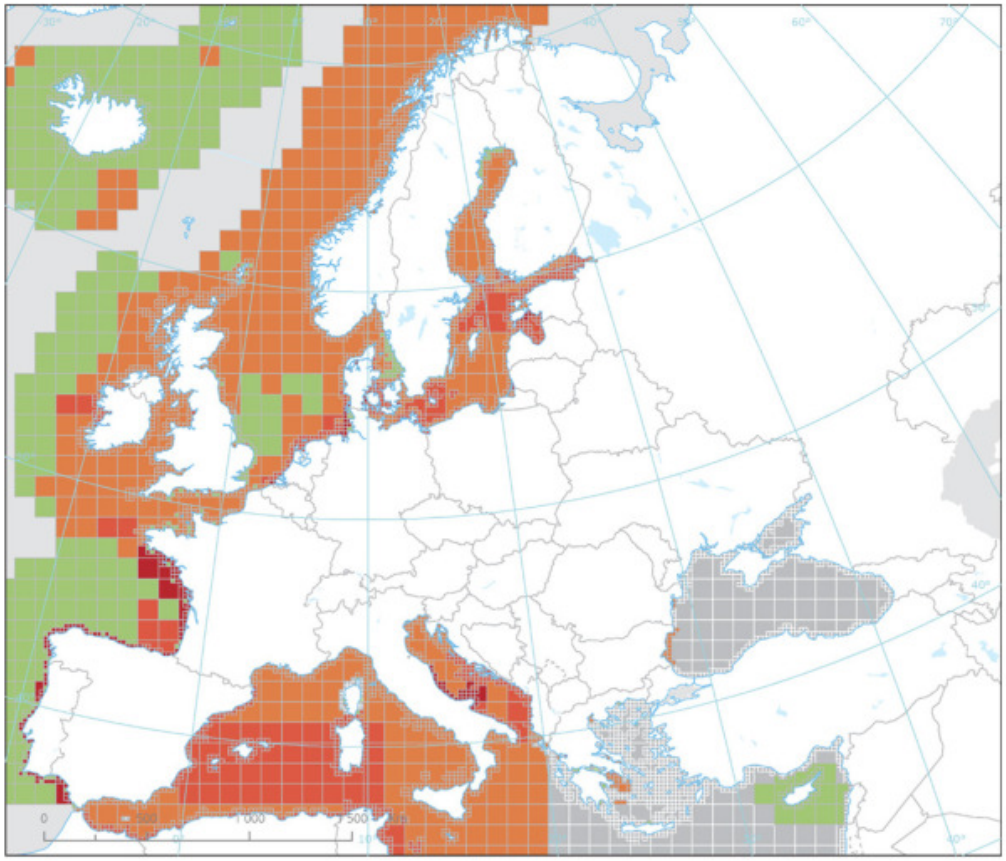
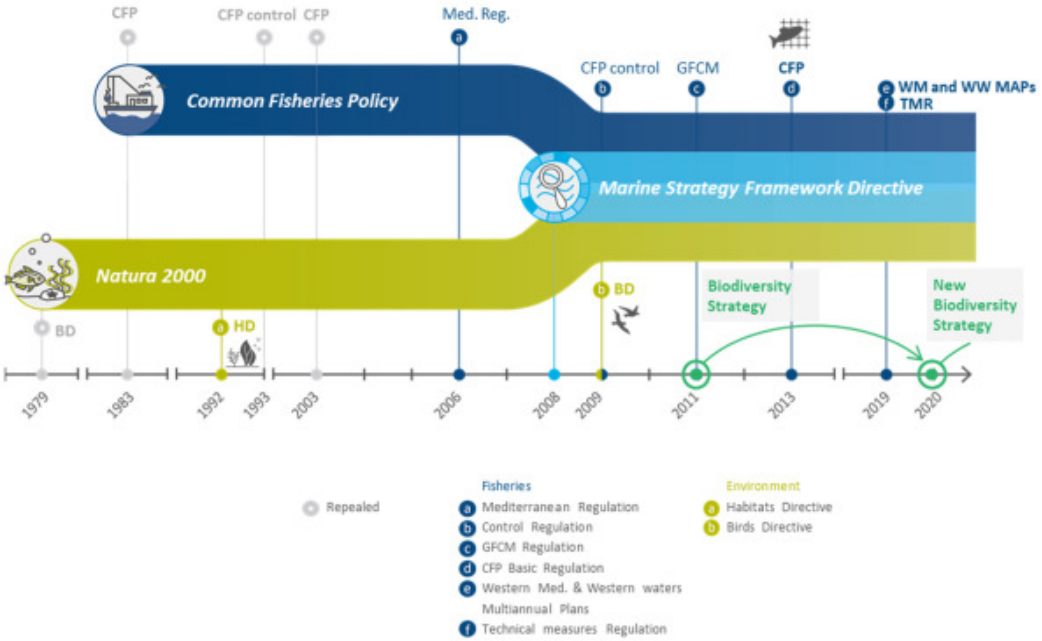


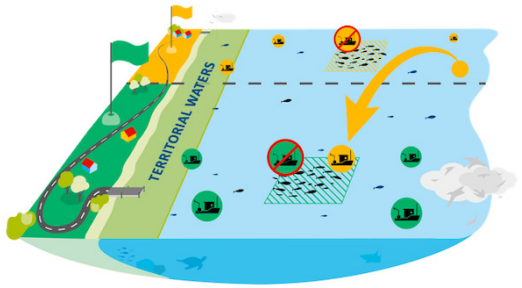
BEAT+ based classifications of Integrated classification of biodiversity condition in Europe's seas

High
Good
Moderate
Poor
Bad
Insufficient data
Outside coverage
100x100 km in offshore areas (> 20 km from the coastline)
20x20 km in coastal areas (≤ 20 km from the coastline)

Source: © European Environment Agency, EEA Report, Marine messages II, 2020, Figure 3.1, p. 27.



Source: ECA.

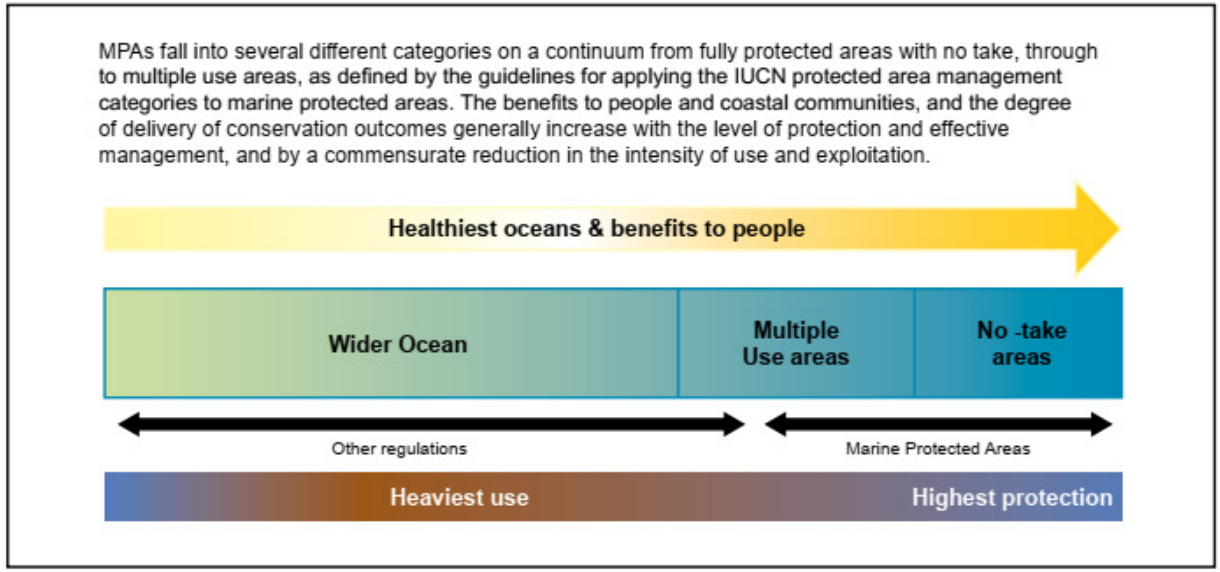


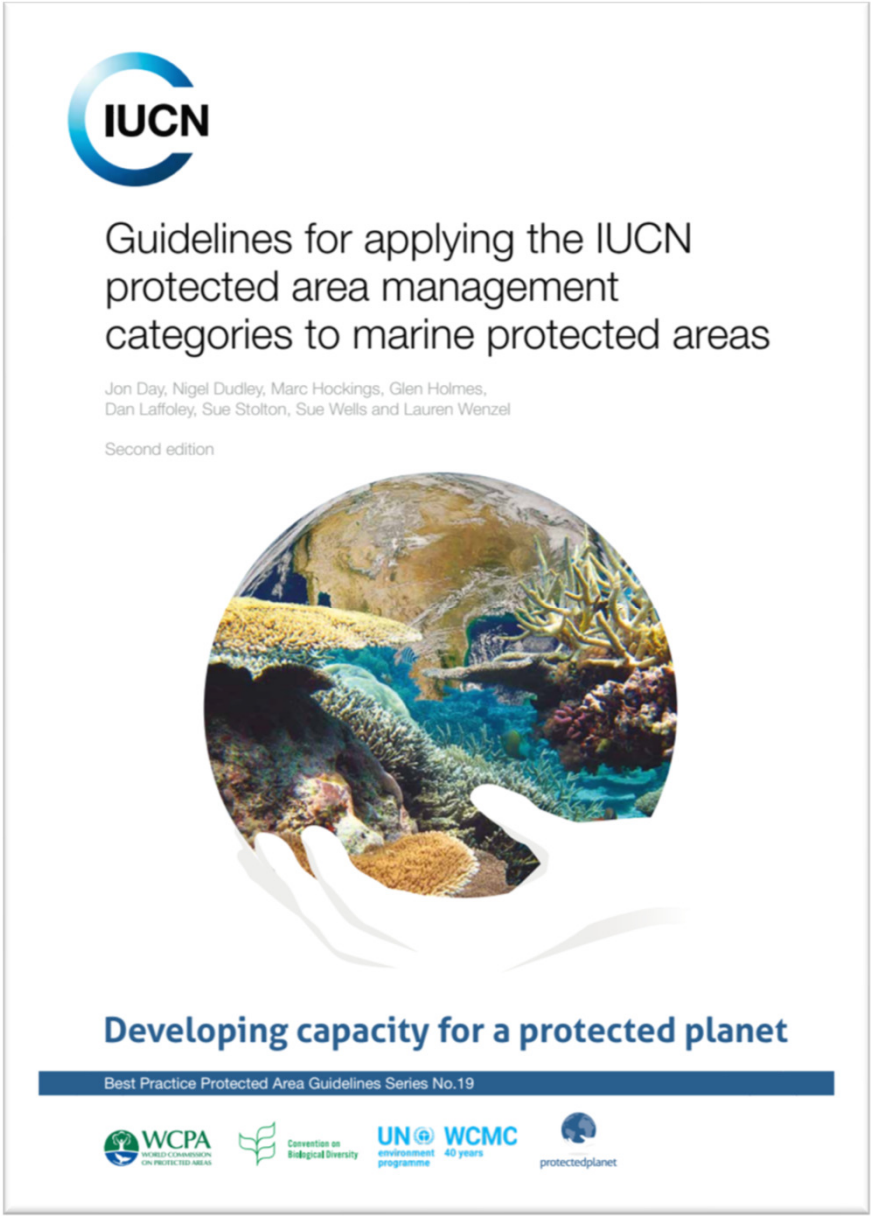
1. To comply with the MSFD and the BHDs, Member States adopt national laws restricting fishing in protected areas to its vessels ...

2. ... but the CFP gives a Member State the right to fish in another Member State's waters. The restrictions adopted by national laws do not apply automatically to these foreign vessels so they can fish where national fishermen cannot.

Marine Protected Areas

IUCN: Marine Protected Areas (**MPAs**) involve the protective management of natural areas according to pre-defined management objectives. MPAs can be conserved for a number of reasons including economic resources, biodiversity conservation, and species protection. They are created by delineating zones with permitted and non-permitted uses within that zone.





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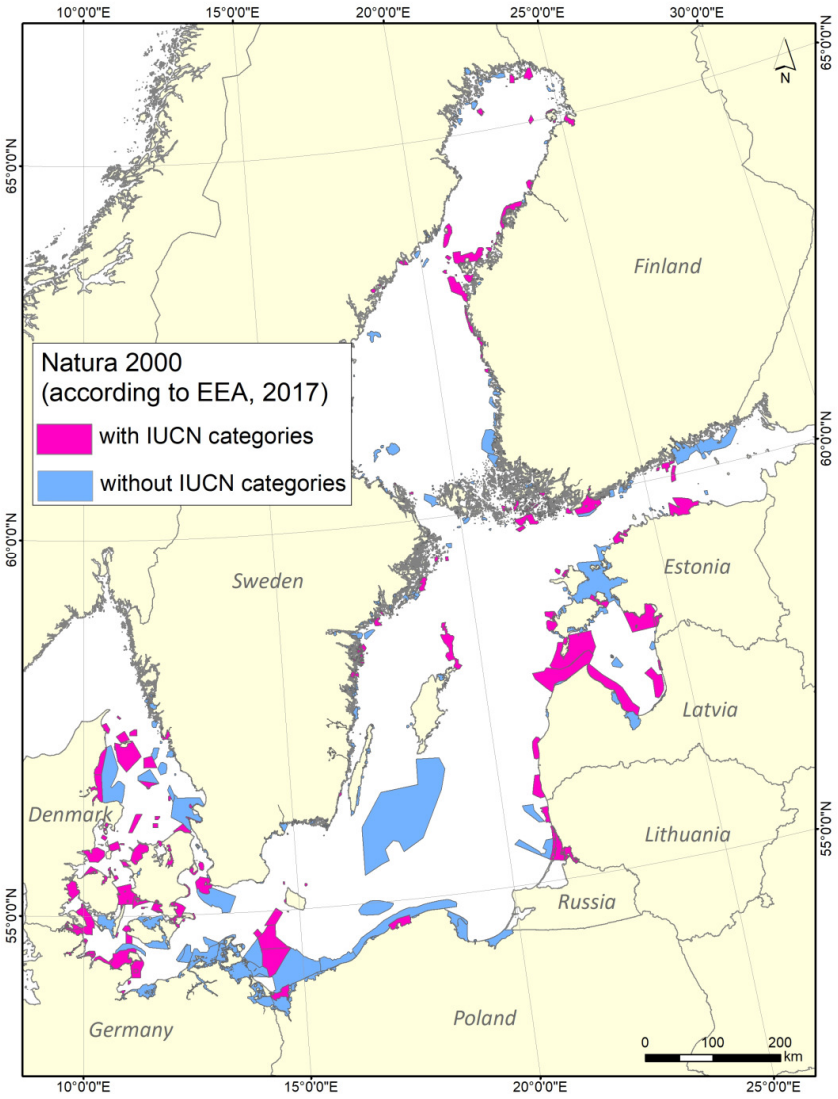
Baltic Sea MPA network characteristics, management effectiveness and its assessment method developed for the Baltic Sea MPA's



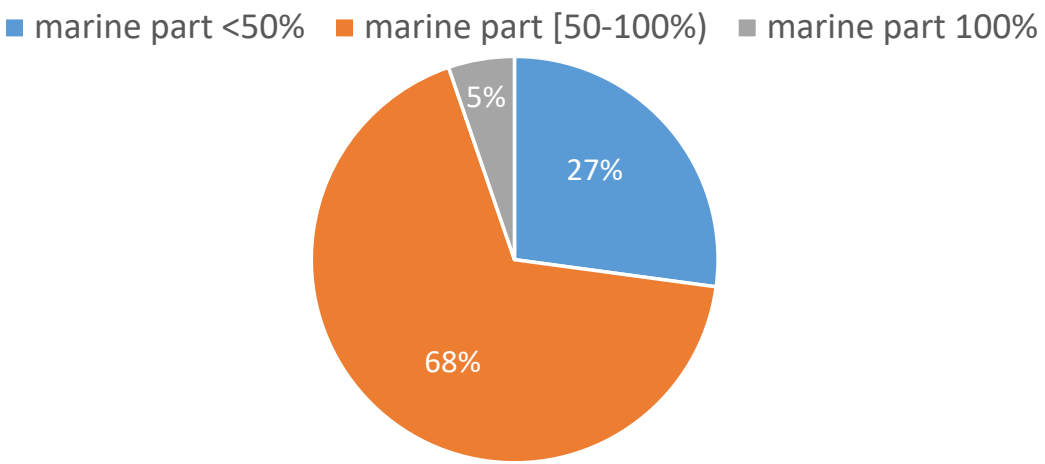
Baltic MPA network:

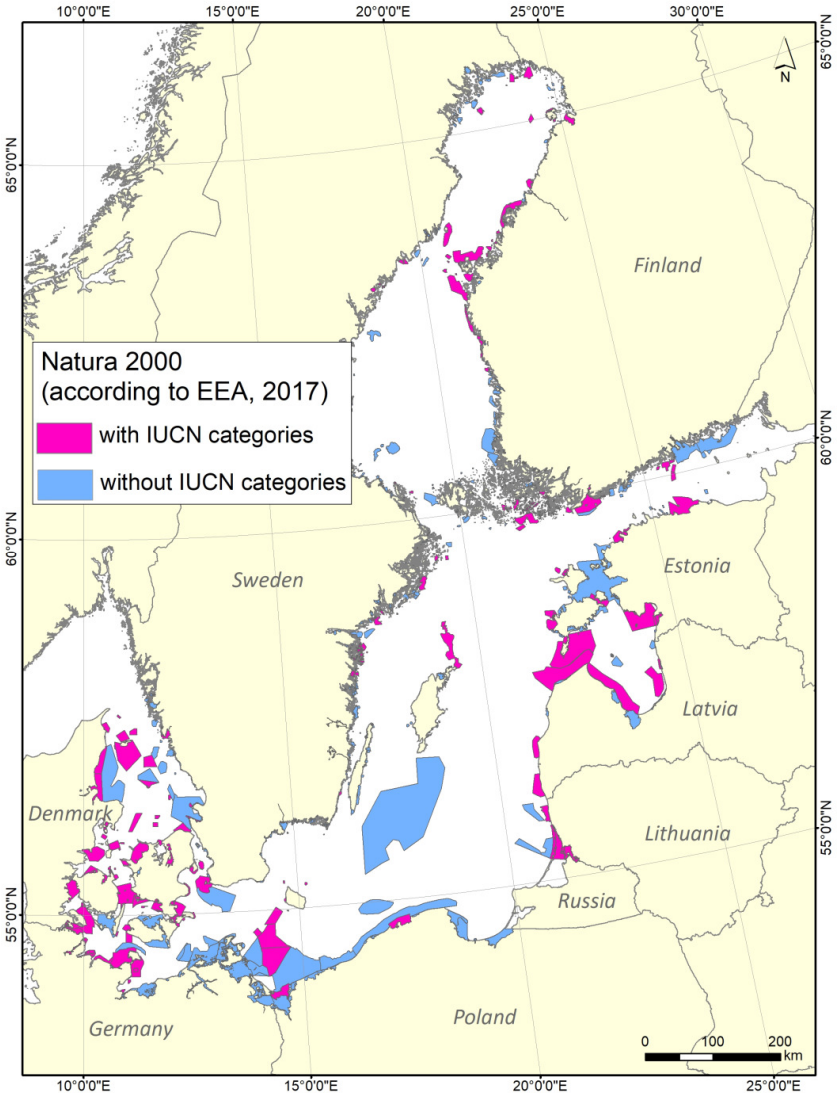
EEA N2000 Database (Dec., 2017):
893 N2000 sites; 694 with approved management plans (78%)

HELCOM MPA Database:
257 MPA's; 176 with approved management plans (68%)

Danish MSFD sites: 6

Percentage (%) of N2000 sites with a different proportion of marine part





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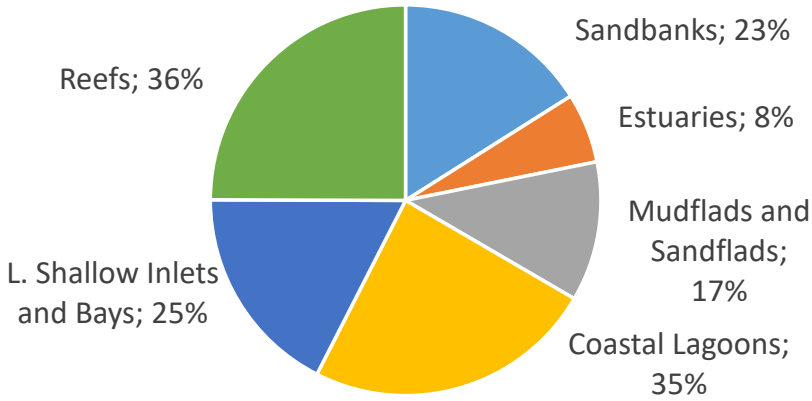
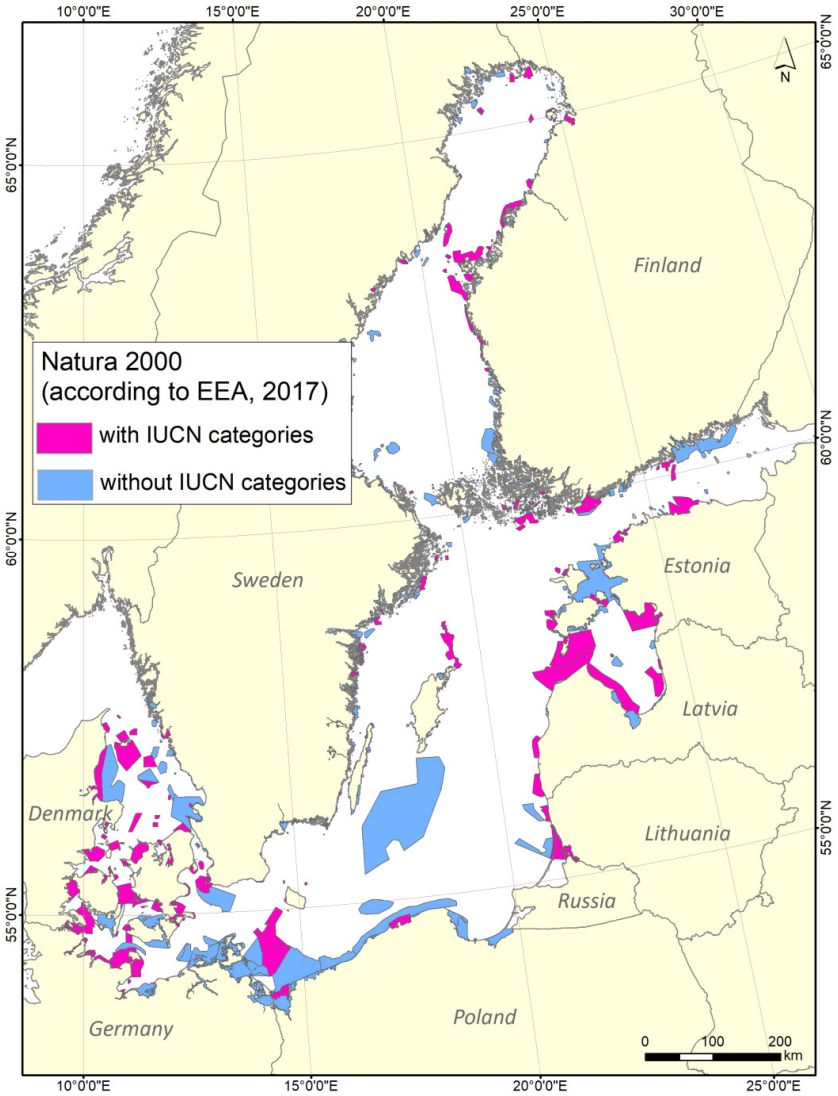
Presence of HD Annex I Habitat types among N2000 sites (EEA database, Dec., 2017)





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EEA N2000 Database (Dec., 2017):
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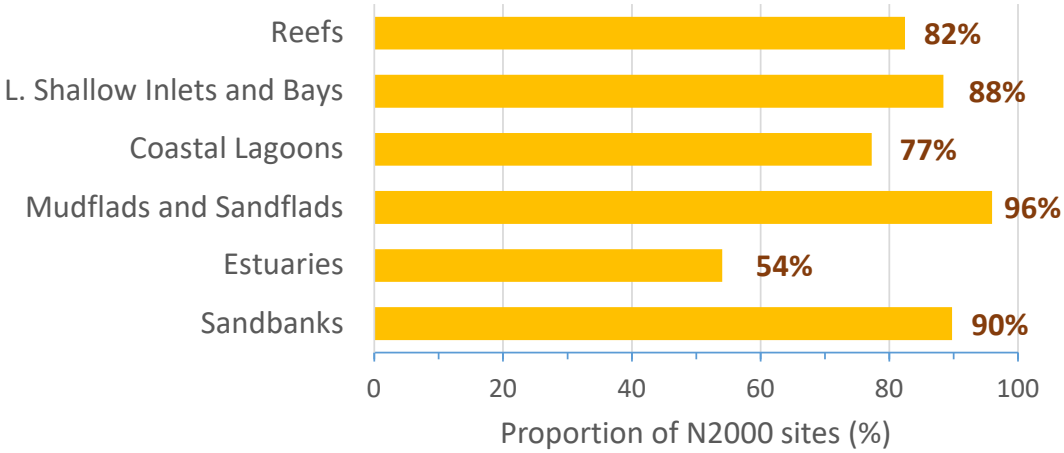
HELCOM MPA Database:
257 MPA's; 176 with approved management plans (68%)

Danish MSFD sites: 6

Proportion (%) of N2000 sites with HD Annex I Habitat types and approved management plans (EEA N2000 database, Dec., 2017)



What is management effectiveness?

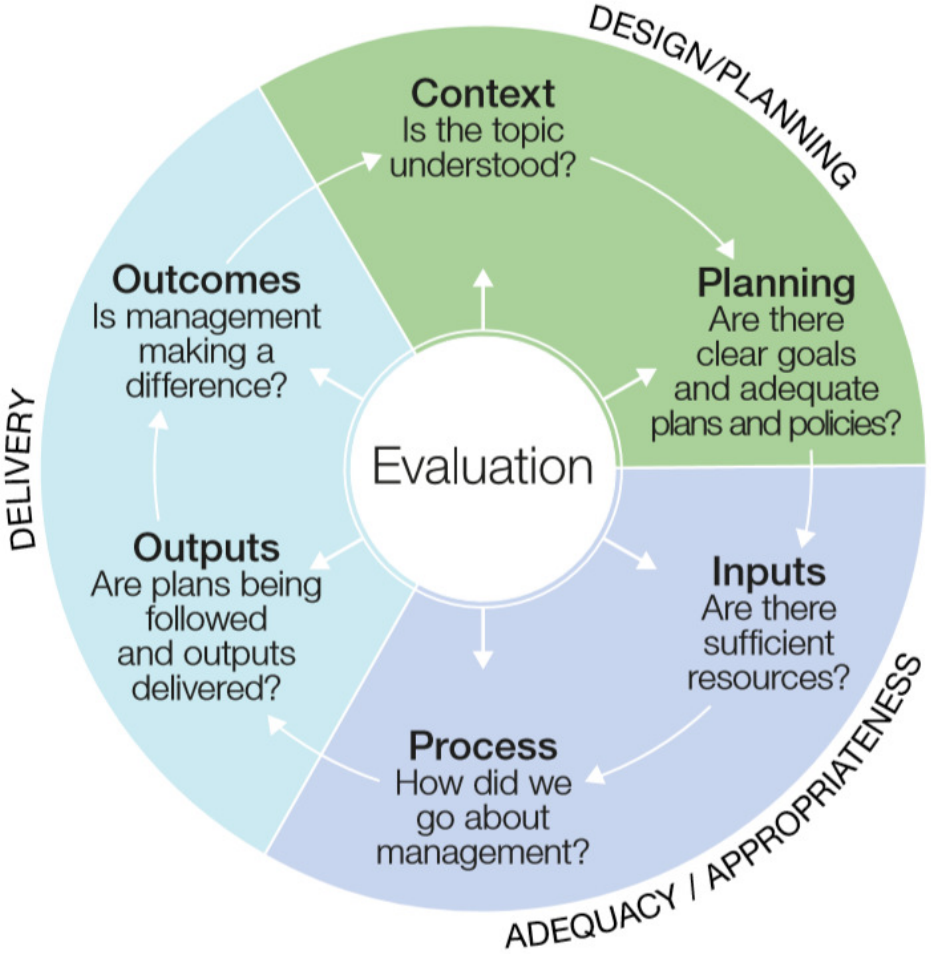
- how well protected areas are protecting values and achieving goals and objectives.

Three main 'themes' in evaluation of PA management:

- **design and planning** issues related to both individual sites and networks;
- **adequacy** and appropriateness of management systems and processes; and
- **delivery** of protected area objectives (including conservation of values).

From: Hockings, M., Stolton, S., Leverington, F., Dudley, N. and Courrau, J. (2006). *Evaluating Effectiveness: A framework for assessing management effectiveness of protected areas.* 2nd edition. IUCN

The IUCN–WCPA cyclical process of protected area management



- management assessment is addressing all stages of the cyclical process;
- assessments are typically based on questionnaires (QS) using biological, environmental, socio-economic and governance criteria;
- management effectiveness (ME) is rated in QS by scoring the individual criteria;
- different quantitative, qualitative and descriptive scoring systems are used.

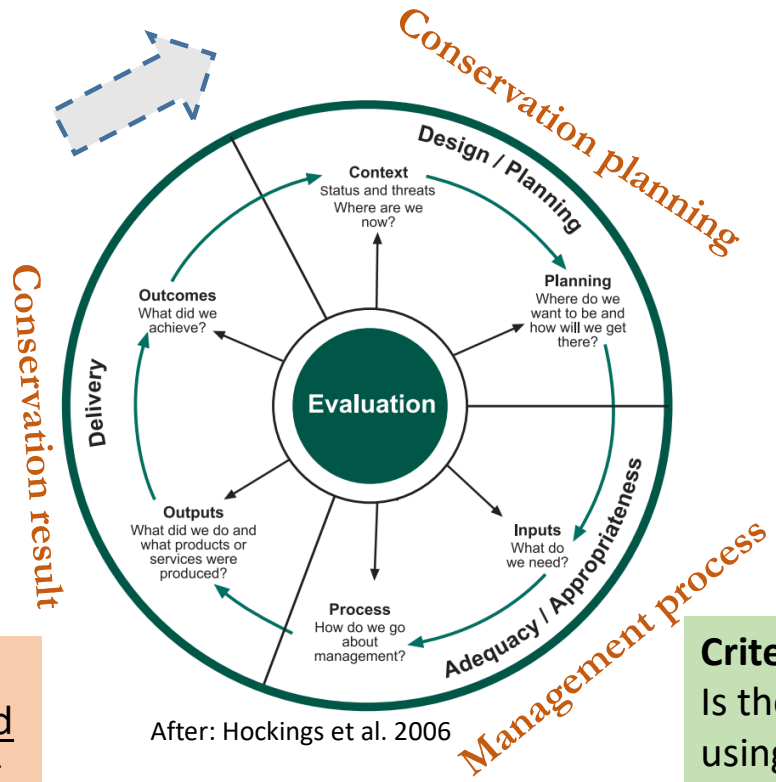
Assessing management effectiveness of the Baltic MPA network: general concept of criteria

Criteria 1:
MPA management plan: is there a <u>management measure addressing relevant human activity (i.e. generating important pressure)</u> on protected habitat type / species?

Criteria 2:
Is the management measure <u>implemented</u> using administrative action to transfer management measure from the MP to the implementation (e.g. describing control processes by institutional orders, asigning control functions to institutions etc)

Criteria 3:
Is the management measure <u>enforced</u> using active control, (e.g. involvement of guards, introduction of GPS tracking devices on ships, GPS based warning systems etc.)?

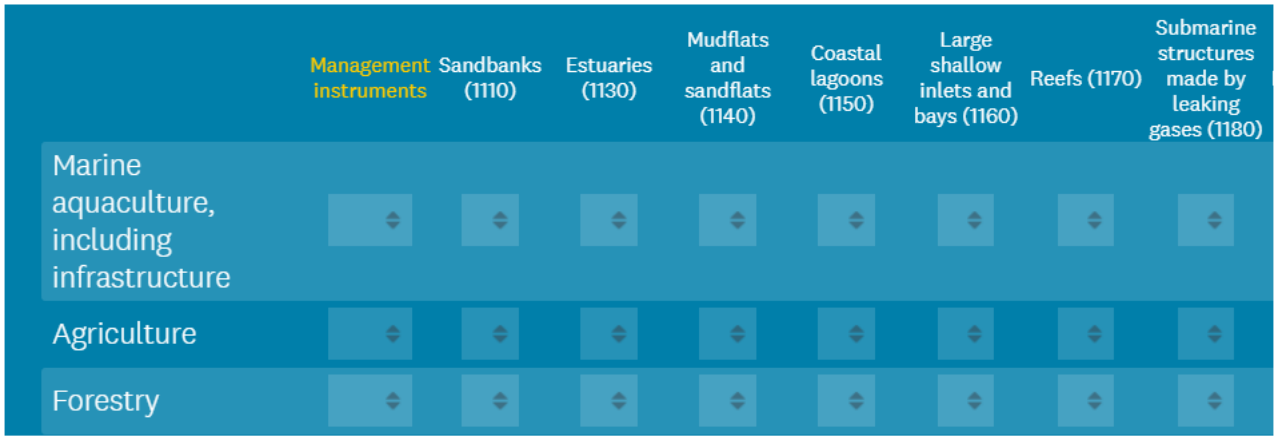
Criteria 4:
Has the management measure positive <u>effect on protected habitat / species</u>?



After: Hockings et al. 2006

Assessing management effectiveness of the Baltic MPA network: framework and scoring

The ME assessment method is designed to score how well human activities that generate pressures to important conservation features are managed in terms of measures inclusion into MP, implementation and enforcement.



Category 1: human activity is NOT ADDRESSED by management measure in the area;

Category 2: human activity is ADDRESSED by management measure but NOT LEGALLY IMPLEMENTED (*i.e.* no administrative action was taken to transfer management measure from the MP to the implementation);

Category 3: human activity is ADDRESSED by management measure, LEGALLY IMPLEMENTED using administrative instruments (*e.g.* describing control processes by institutional orders, asigning control functions to institutions etc.) BUT NOT LEGALLY ENFORCED by defined active control measures (e.g. involvement of guards, introduction of GPS tracking devices on ships, GPS based warning systems etc.);

Category 4: human activity is ADDRESSED by management measure, LEGALLY IMPLEMENTED AND ENFORCED.

Sub-sampling of MPA's for the analysis

Total: 893 N2000 sites in EEA N2000 database (Dec. 2017), 694 with MP -> sub-sampled 209

Selection criteria (priority to HELCOM sites):
i) proportion of their distribution among countries,
ii) location along the Baltic latitudinal/longitudinal gradient; and
iii) proportion of the marine part of the total MPA area.

Country	Number and proportion of N2000 sites with management plans	Number and proportion of N2000 sites with management plans according to proportion of marine part			Number of MPA's selected for assessment by the questionnaire (fully marine / marine area between 50 and 100%/ marine area <50%)
		Fully marine sites	Marine part between 50 and 100%	Marine part <50%	
Sweden	448 (64%)	15 (3%)	235 (53%)	198 (44%)	114 (3/61/50)
Denmark	105 (15%)	29 (28%)	57 (54%)	19 (18%)	40 (11/22/7)
Finland	59 (8%)	1 (2%)	44 (75%)	14 (23%)	18 (1/11/6)
Germany	41 (7%)	9 (22%)	21 (51%)	11 (27%)	14 (3/7/4)
Estonia	37 (5%)	0 (0%)	28 (72%)	9 (28%)	12 (9/3/0)

Conservation features (1)

All the HD Annex I Habitat types and sites appointed to fulfill obligations of MSFD; 8 features

HD Annex I Habitat types:

1. Sandbanks (1110)
2. Estuaries (1130)
3. Mudflats and sandflats (1140)
4. Coastal lagoons (1150)
5. Large shallow inlets and bays (1160)
6. Reefs (1170)
7. Submarine structures made by leaking gases (1180), all included

Conservation features (2)

HELCOM Red List species categorised as Endangered (EN) or Critically Endangered (CR) which ALSO are listed under BD or HD. **– 9 conservation features (*Gavia stellate* and *G. arctica* pooled into one category)**

Species	HELCOM Red List 2013	EU Habitats Directive	EU Bird Directive
Macrophytes:			
1. Hippuris tetraphylla	EN	Annex II, IV	
2. Persicaria foliosa	EN	Annex II, IV	
Fishes:			
3. Thymallus thymallus	CR	Annex V	
Baltic Sea birds:			
4. Anser fabalis,	EN		Annex II
5. Clangula hyemalis,	EN		Annex II
6. Gavia stellata,	CR		Annex I
7. Gavia arctica,	CR		Annex I
8. Polysticta stelleri	EN		Annex I
Marine mammals:			
9. *Phocoena phocoena*	CR (Baltic Sea sub-population)	Annex II, IV	

Human activities (1)

- based on HELCOM SOM Platform shortlist of activities and pressures cross-linked with the list of pressures/activities/threats used in reporting for Habitats Directive Article 17;

- altogether 26 human activities, grouped into 11 major groups;

Theme of activity	Human activity	Pressures
Cultivation of living resources	Marine aquaculture, including infrastructure	Input of nutrients, disturbance to seabed,
	Agriculture	Input of nutrients
	Forestry	Input of nutrients
Production of energy	Land based non-renewable energy generation (fossil fuel and nuclear energy powerplants)	Input of heat, hazardous substances ….
	Renewable energy generation (wind, wave and tidal power), including infrastructure	Disturbance to seabed and species, …
	Transmission of electricity and communications (cables)	Disturbance to seabed, input of energy and hazardous substances…
Physical restructuring of coastline or seabed	Watercourse modifications (e.g. coastal dams, large-scale water deviation)	Disturbance to seabed and species
	Coastal defense and flood protection (seawalls, etc.)	Disturbance to seabed and species
Urban and industrial uses	Industrial use of oil and gas (industrial plants)	Input of hazardous substances
	Waste waters (urban and industrial)	Input of hazardous substances, nutrients…

Human activities (2)

Theme of activity	Activity
Extraction of living resources	Fish and shellfish harvesting (bottom-touching towed gears, professional, recreational)
	Fish harvesting (pelagic towed gears, stationary gears, professional, recreational)
	Marine plant harvesting
	Hunting and population control
Extraction of non-living resources	Extraction of minerals (rock, gravel, sand, shell)
	Extraction of oil and gas, including infrastructure (e.g. pipelines)
Physical restructuring of seabed	Offshore structures (bridges, tunnels, other than for oil/gas/renewables)
	Restructuring of seabed morphology (dredging, beach replenishment, land reclamation, deposition of dredged material)
Tourism and leisure	Tourism and leisure infrastructure (piers, marinas)
	Tourism and leisure activity (boating, diving etc. except fishing)
Transport	Transport infrastructure (harbours, ports)
	Transport – shipping (incl. anchoring, mooring, oil pollution)
Security and defence	Military operations (e.g. acoustic tracking)
	Military shooting areas
Education and research	Research, exploration (seismic activities)

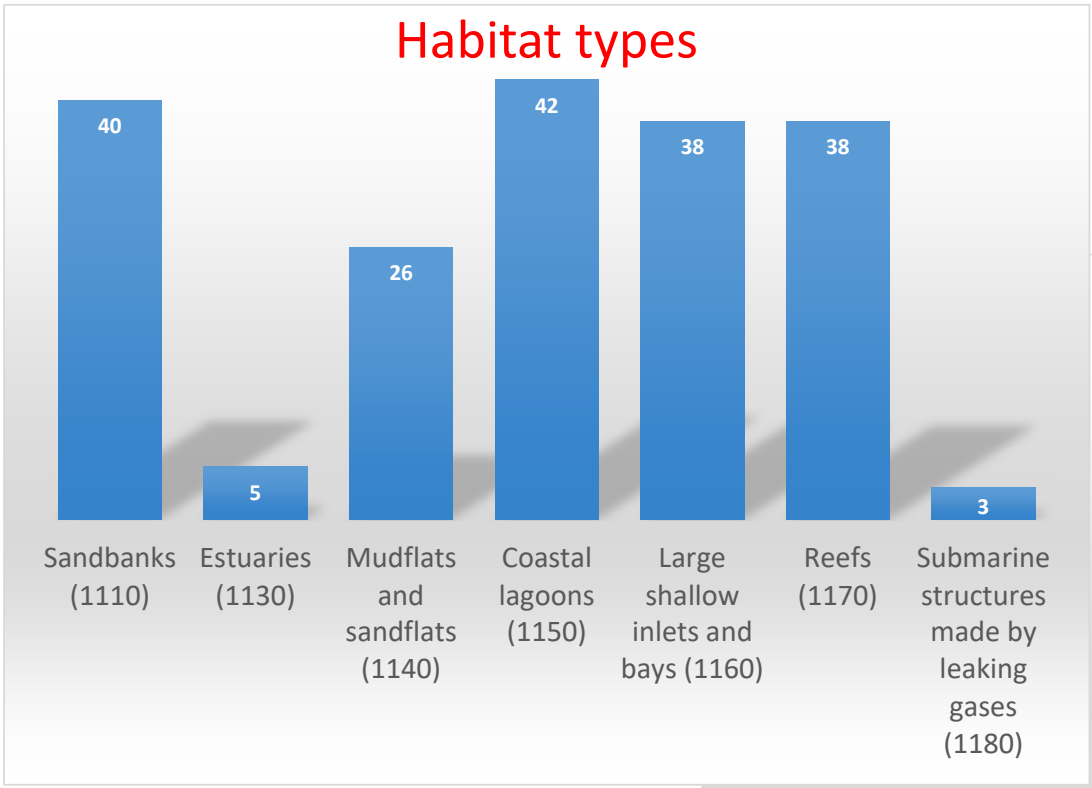
Management instruments	Sandbanks (1110)	Estuaries (1130)	Mudflats and sandflats (1140)	Coastal lagoons (1150)	Large shallow inlets and bays (1160)	Reefs (1170)	Submarine structures made by leaking gases (1180)
Marine aquaculture, including infrastructure							
Agriculture							
Forestry							
Land based non-renewable energy generation (fossil fuel and nuclear energy powerplants)							
Renewable energy generation (wind, wave and tidal power), including infrastructure							

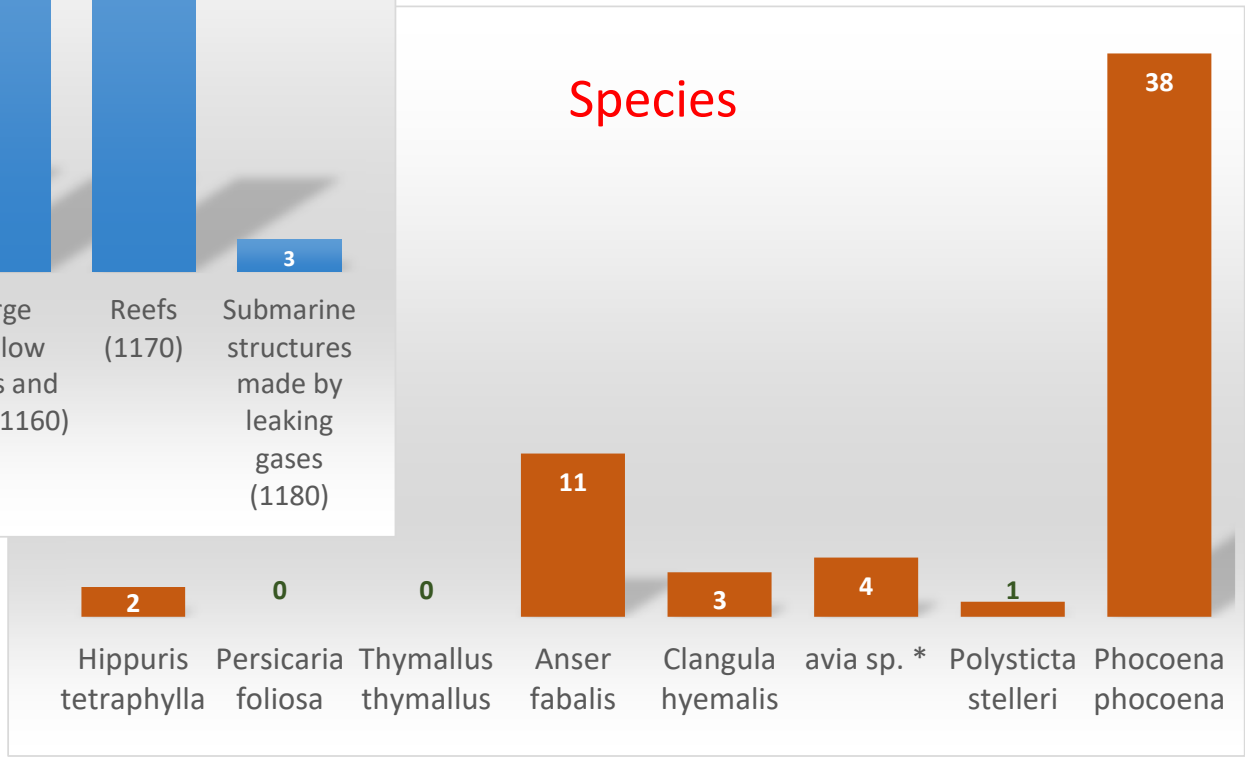
Management effectiveness assessment study: results

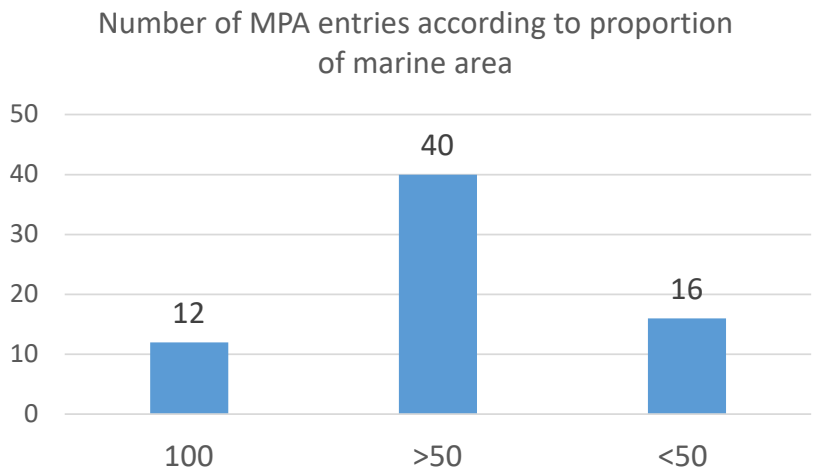
Number of planned and received QS responses

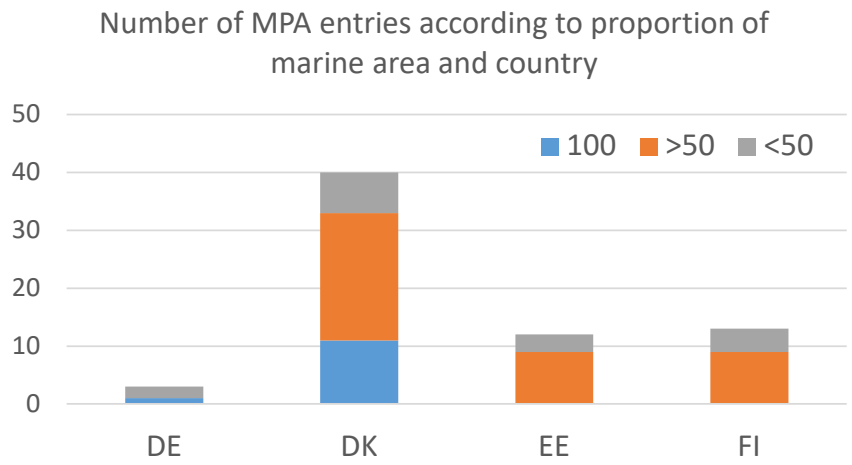
Country	Number and proportion of N2000 sites with management plans	Number of MPA's selected for assessment by the QS	Number of MPA's assessed by QS
Sweden	448 (64%)	114	0
Denmark	105 (15%)	40	40
Finland	59 (8%)	18	13
Germany	41 (7%)	14	3
Estonia	37 (5%)	12	12
		198	**68**

Number of QS responses covering targeted habitat types and species



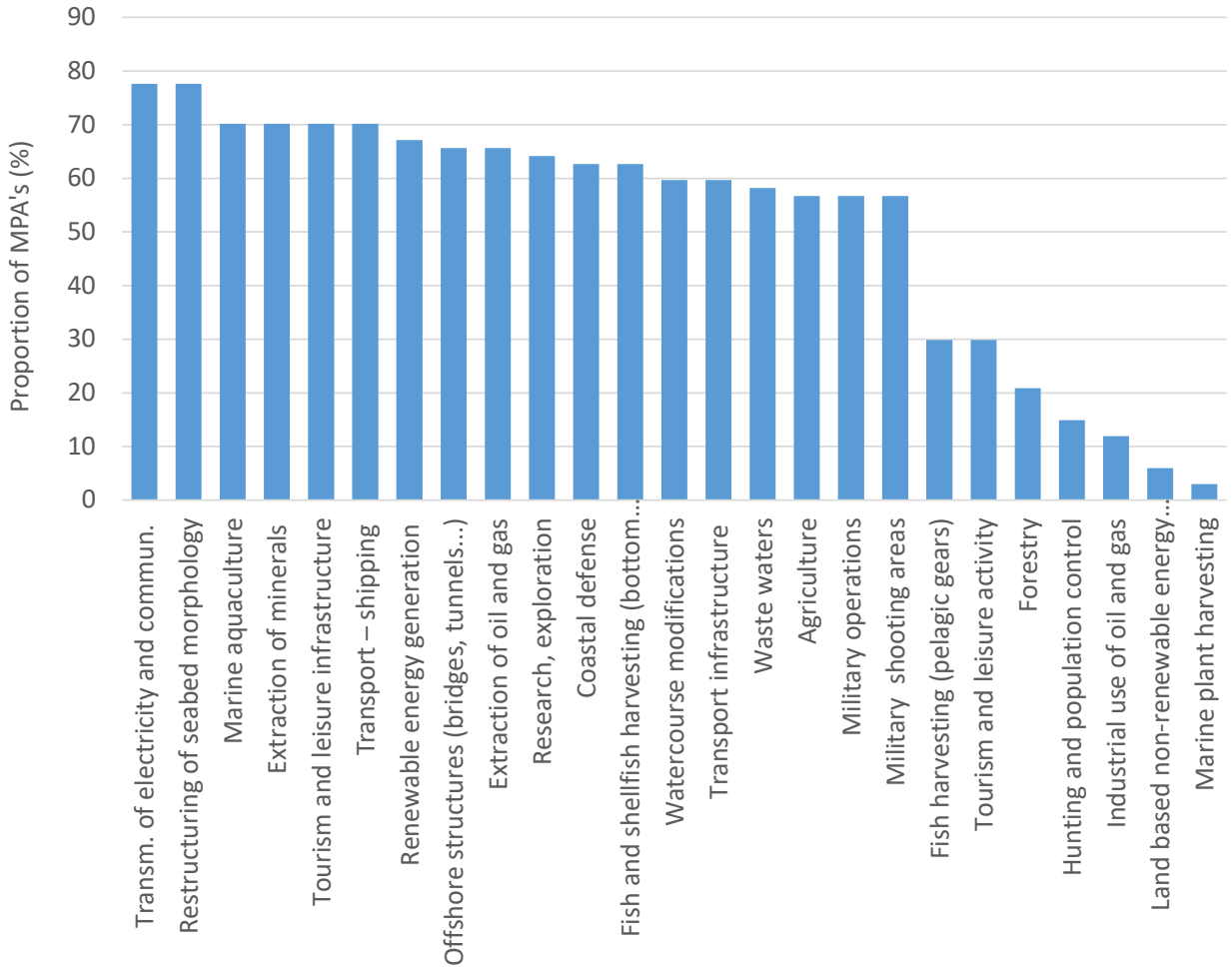






- Most of the responses covered MPA's in the 50%-100% marine area interval
- Most of the responses from DK
- EE and FI did not report on MPAS having 100% of marine area

Distribution of human activities across MPA's (irrespective of the degree of their management)



"Transmission of el." & "Restructuring seabed morphology" – the highest relevance (also considering potential in the future)

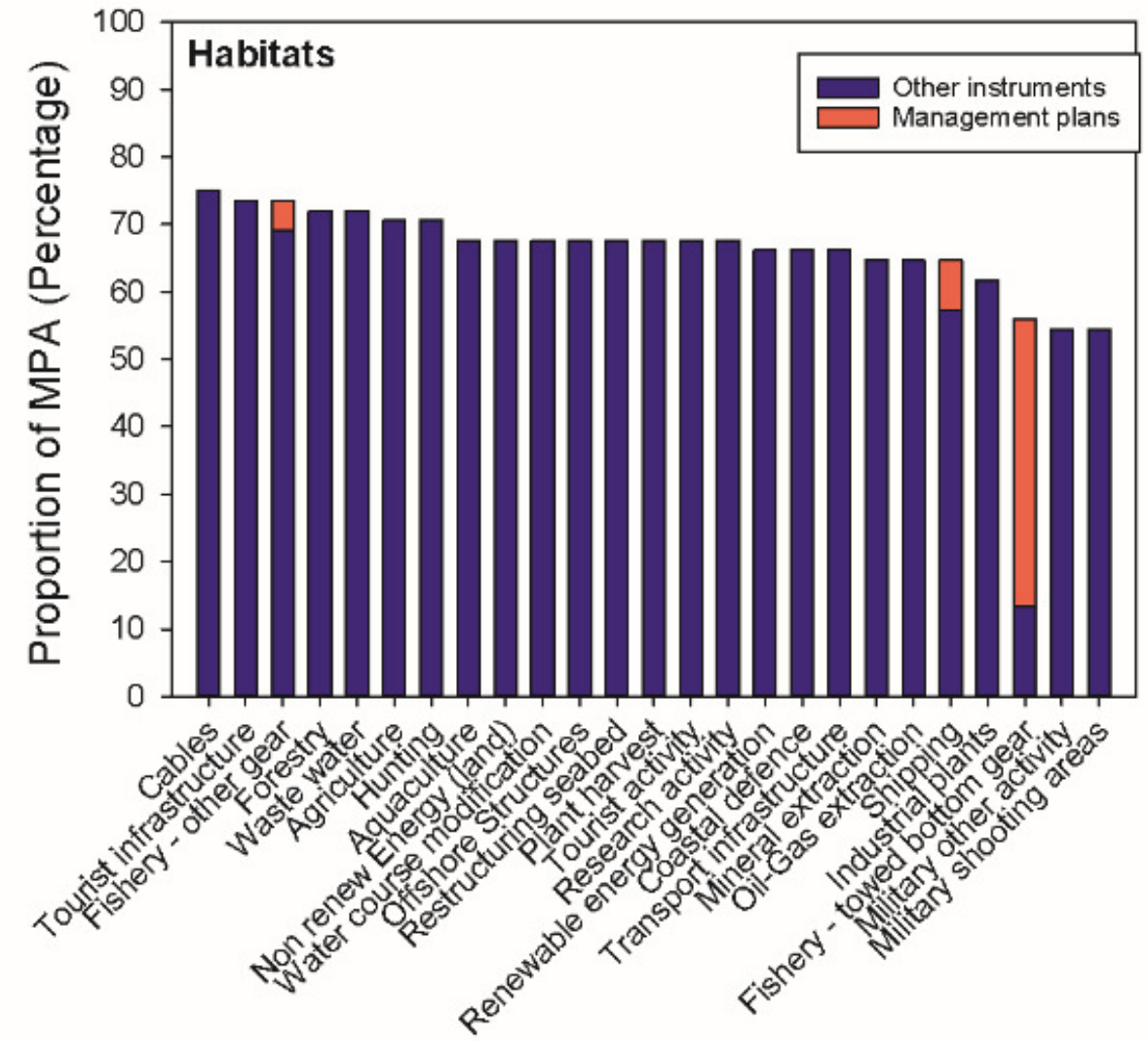
High degree of relevance for "Marine aquaculture", "Extraction of minerals", "Renewable energy generation"

Relatively low relevance of "Pelagic fishing" (30%)

"Agriculture" – 57% - means less relevance of eutrophication for MPA's

Management tools – plans or other instruments?

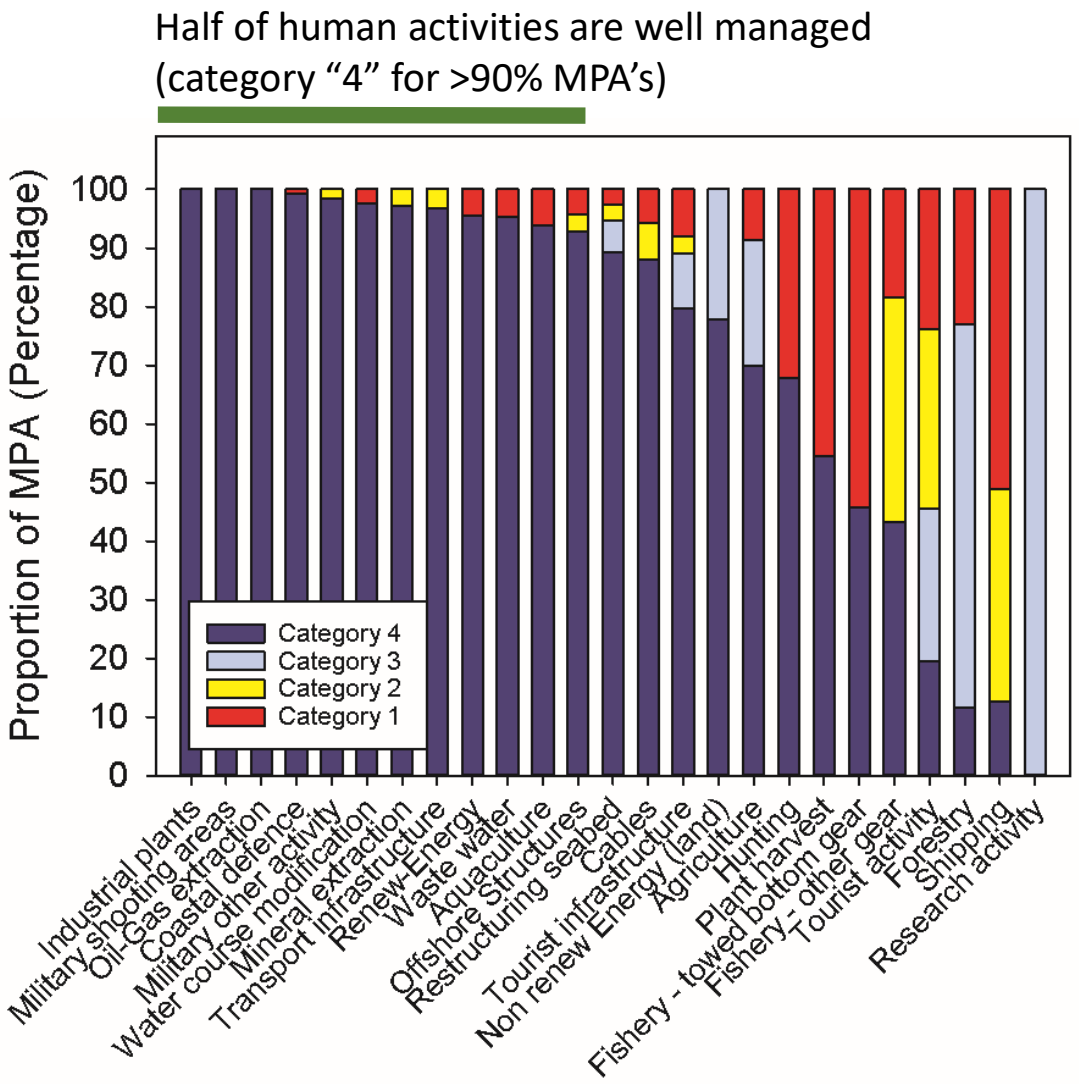
- All human activities are predominantly managed by other instruments, than management plans (with the exception of bottom fishery)



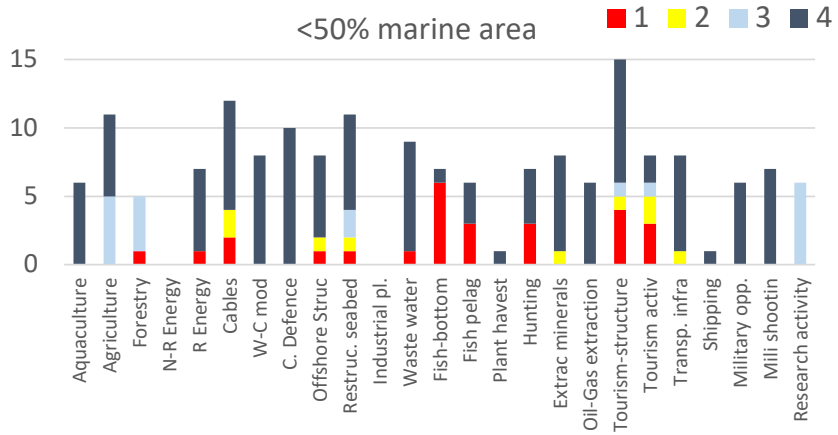
Assessing management efficiency in Danish, German, Estonian and Finnish MPA's

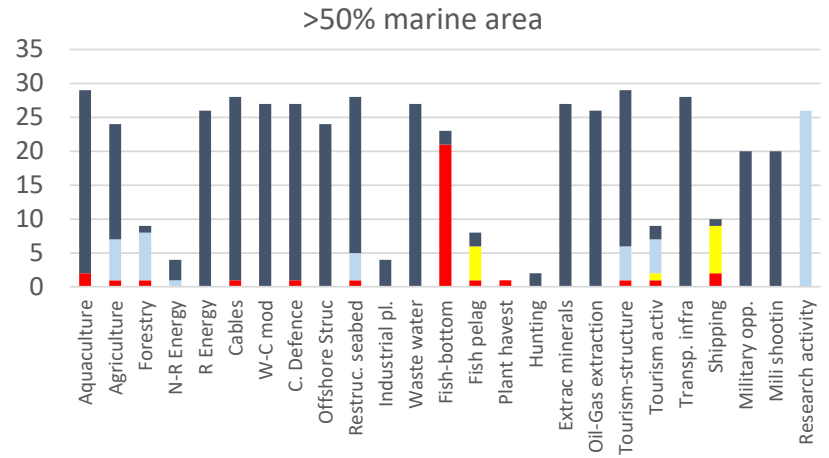
- Completely or almost completely managed relevant human activities (category 4):
  - *Industrial plants*
  - *Military activities (both groups)*
  - *Coastal defense*
  - *Oil and gas extraction*.

- Relevant activities less efficient managed (>50% MPA's with category 1 and 2):
  - *Shipping*
  - *forestry*
  - *tourist activities*
  - *Towed Bottom gear*
  - *Fishery - other gear*



ME of human activities vs. proportion of MPA marine part

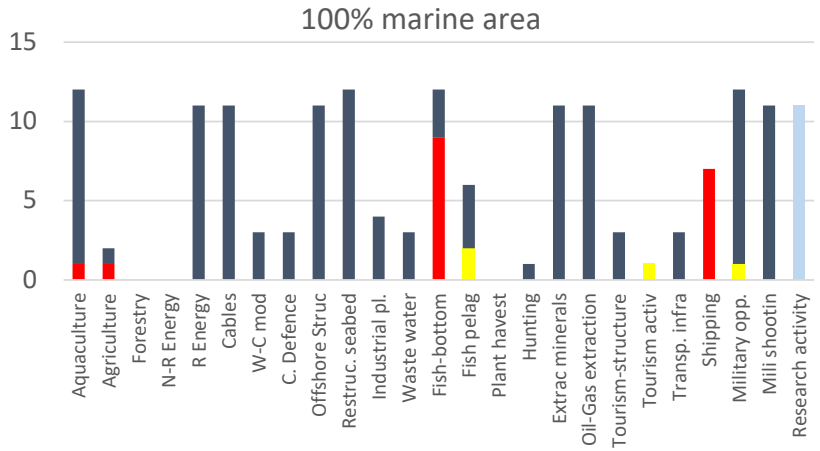




In all types of MPAs category 4 is the most numerous case

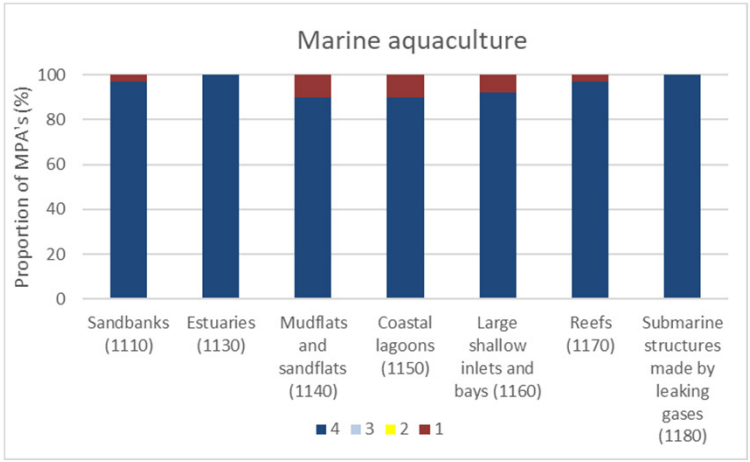
Number of relevant human activities is lower in fully marine MPA's, but they are better managed

Number of unmanaged activities is the highest in nearshore sites



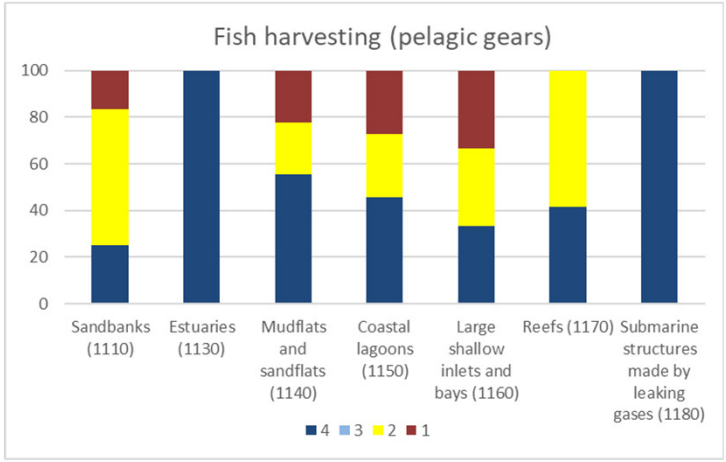
ME of human activities for different habitat types

Management category “4” for all habitat types and majority of MPA’s



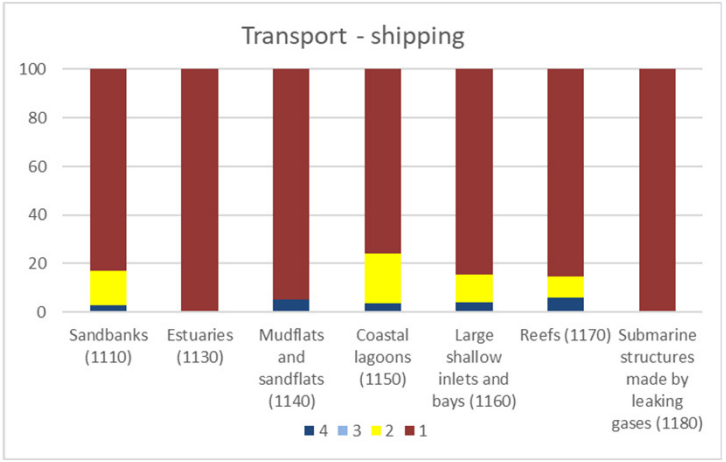
Industrial use of oil and gas
Coastal defense
Restructuring of seabed morphology
Extraction of minerals
Extraction of oil and gas, incl. infrastructure
Tourism and leisure infrastructure
Transport infrastructure
Transmission of electricity and communications
Watercourse modification

Management extent differs between habitats



Renewable energy generation (wind, wave and tidal power), including infrastructure
Transmission of electricity and communications (cables)

Full management (category “4”) for few habitat types



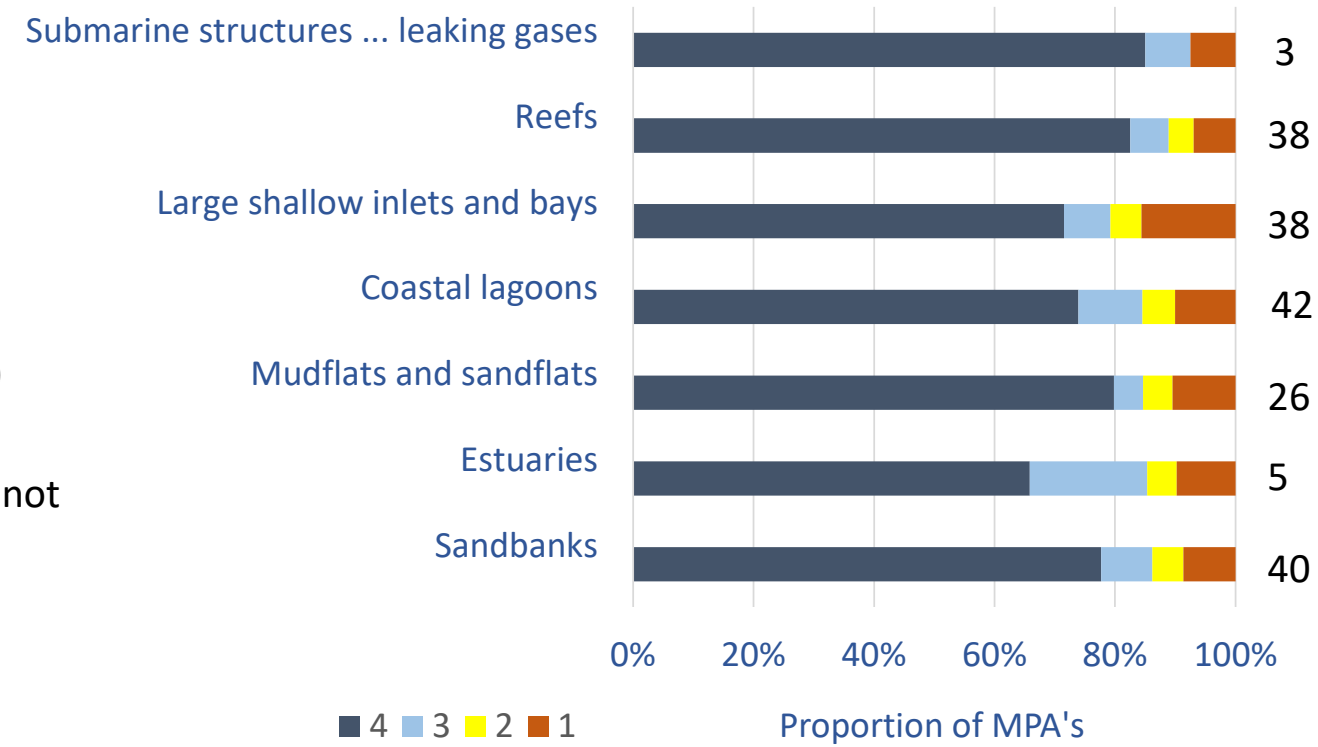
Hunting and population control
Marine plant harvesting
Tourism and leisure activity

Overall management effectiveness of different habitat types (irrespective of human activity)

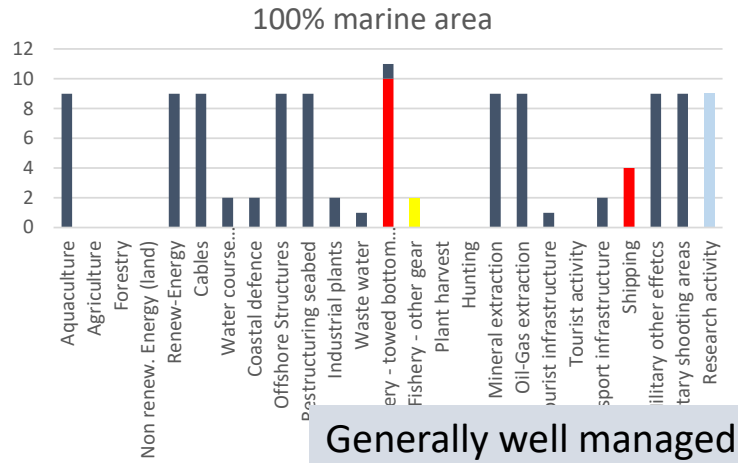
"Bubbling reefs" (n=3) and "Reefs" are the best managed habitat types (category "4" assigned to 85 and 83% of MPA's respectively)

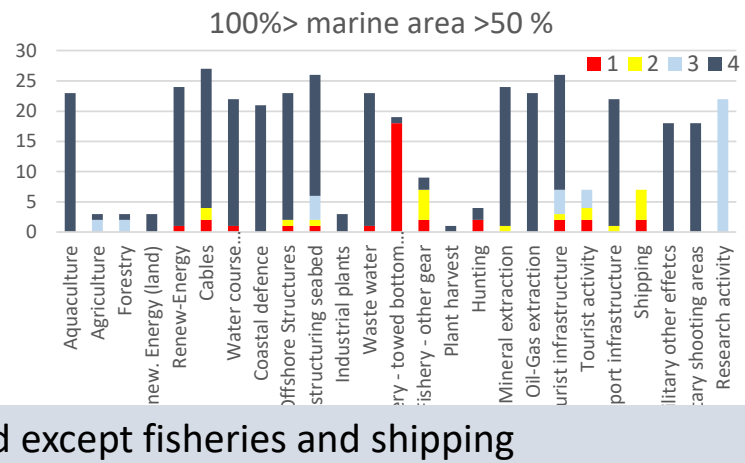
"Large Shallow Inlets" have the highest proportion (16%) of MPA's with unmanaged human activities (management category "1")

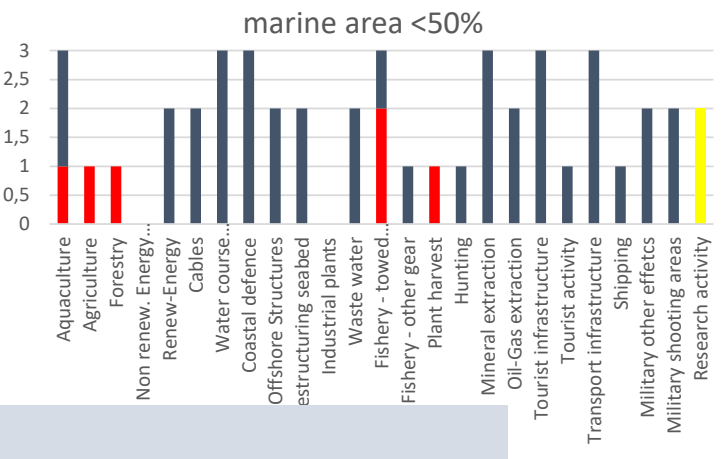
One third (34%) of protected "Estuaries" are not managed (category "1") or partly managed (categories "2" and "3"), but note n=5



Sandbanks (1110)





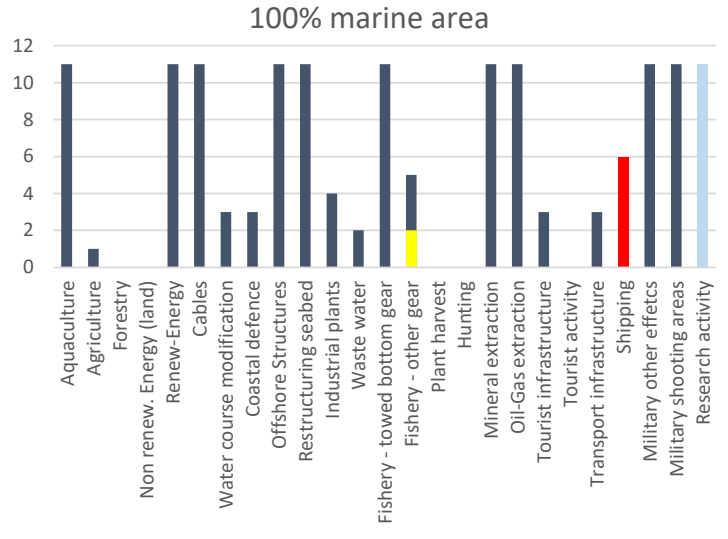


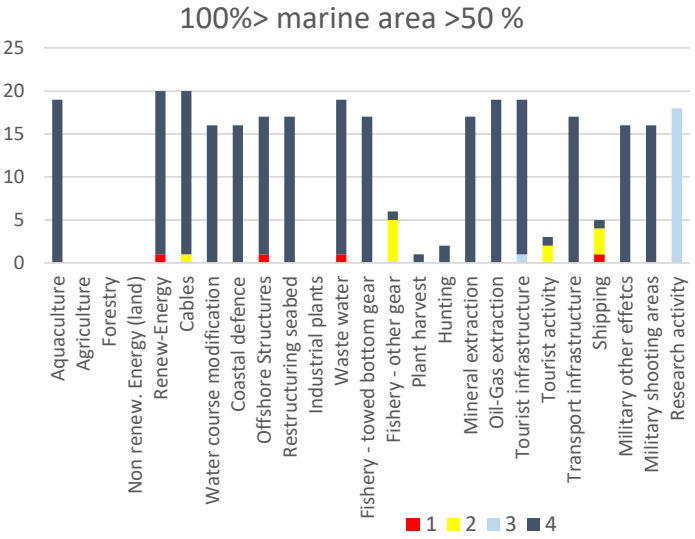
Generally well managed except fisheries and shipping

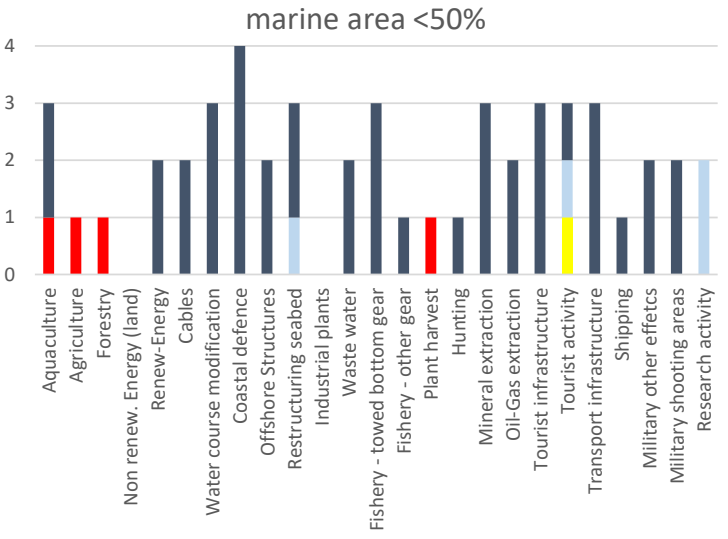
The larger is the marine area (closer to land), the less human activities and better management

Nearshore sandbanks and reefs are very similar in the management extent

Reefs (1170)







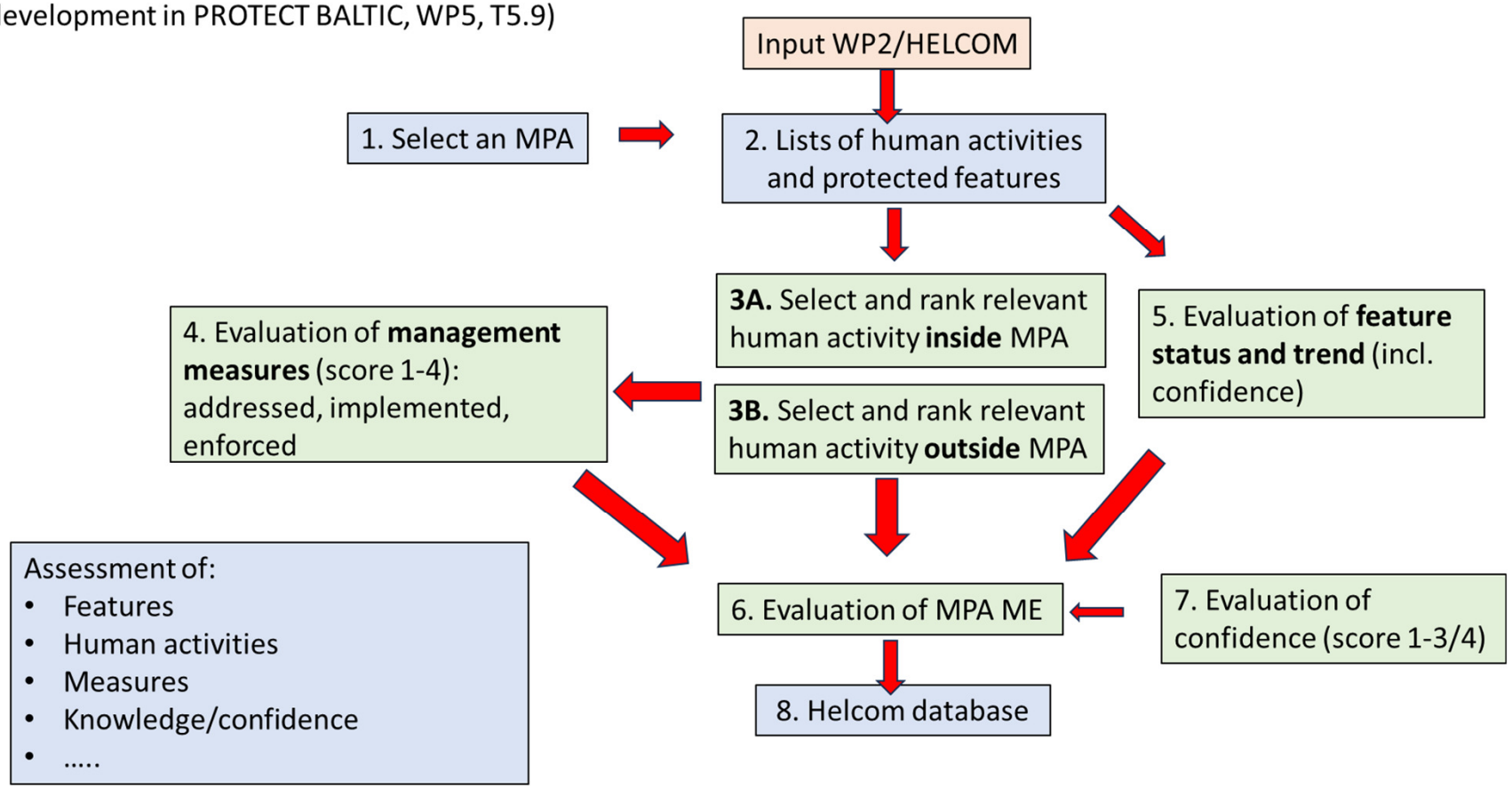
Conclusions on method for ME assessment

- Method provides interpretable results
- Method is more suitable for management effectiveness analysis of the network than single MPA assessment (potential for integrated scoring for MPA)
- Method does not prioritize human activities and conservation features
- Possible errors due to different interpretation of the questionnaire statements

Conclusions on ME assessment results

- Majority of human activities are well managed, *i.e.* half of human activities received category “4” in more than 90% of MPA’s
- Most of human activities are managed by other instruments than management plans.
- Three fourths of human activities are relevant to more than half of analysed MPA’s
- Number of relevant human activities is lower in fully marine MPA’s, but they are better managed
- Fishery (primarily by bottom gears) and shipping are worst managed activities
- Infrastructures are better managed compared to activities.
- “Large Shallow Inlets and Bays” and “Estuaries” are least managed habitat types

Figure 1: General scheme of Management effectiveness assessment (development in PROTECT BALTIC, WP5, T5.9)



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Tänud tähelepanu
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