



Co-funded by the
European Union

Workshop on MPA network effectiveness

under

HELCOM ACTION (Actions to evaluate and identify effective measures to reach GES in the Baltic Sea marine region)

The ACTION project is a HELCOM coordinated project, co-financed by the EU.

Management effectiveness assessment study: results

Questionnaire development:

- first presentation of approach in HELCOM State & Conservation meeting (Hamina, Finland): May 9, 2019
- tested by independent experts: 14 September, 2019;
- sent out to countries representatives in HELCOM State & Conservation: September 20, 2019
- questionnaires received: November 4, 2019

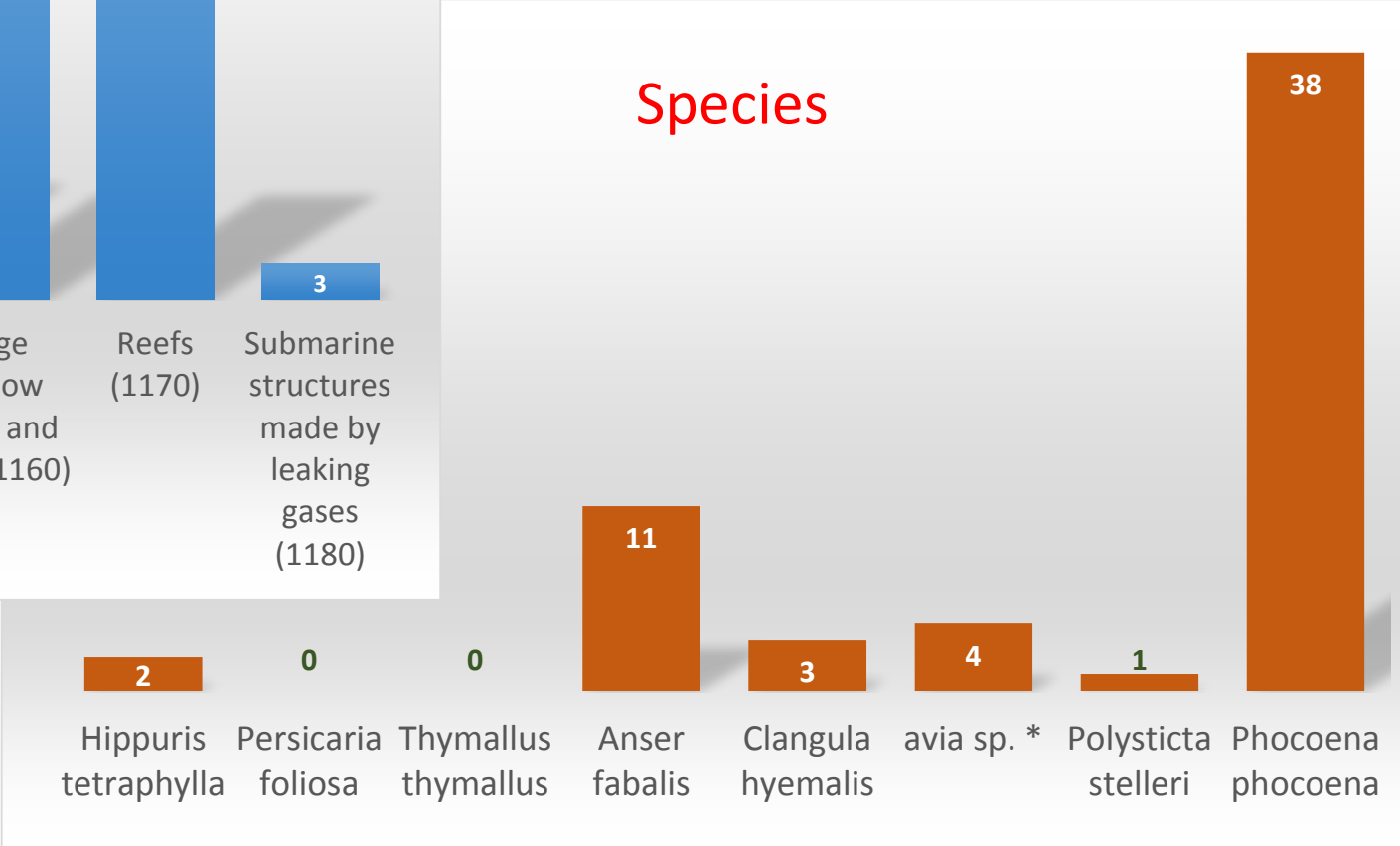
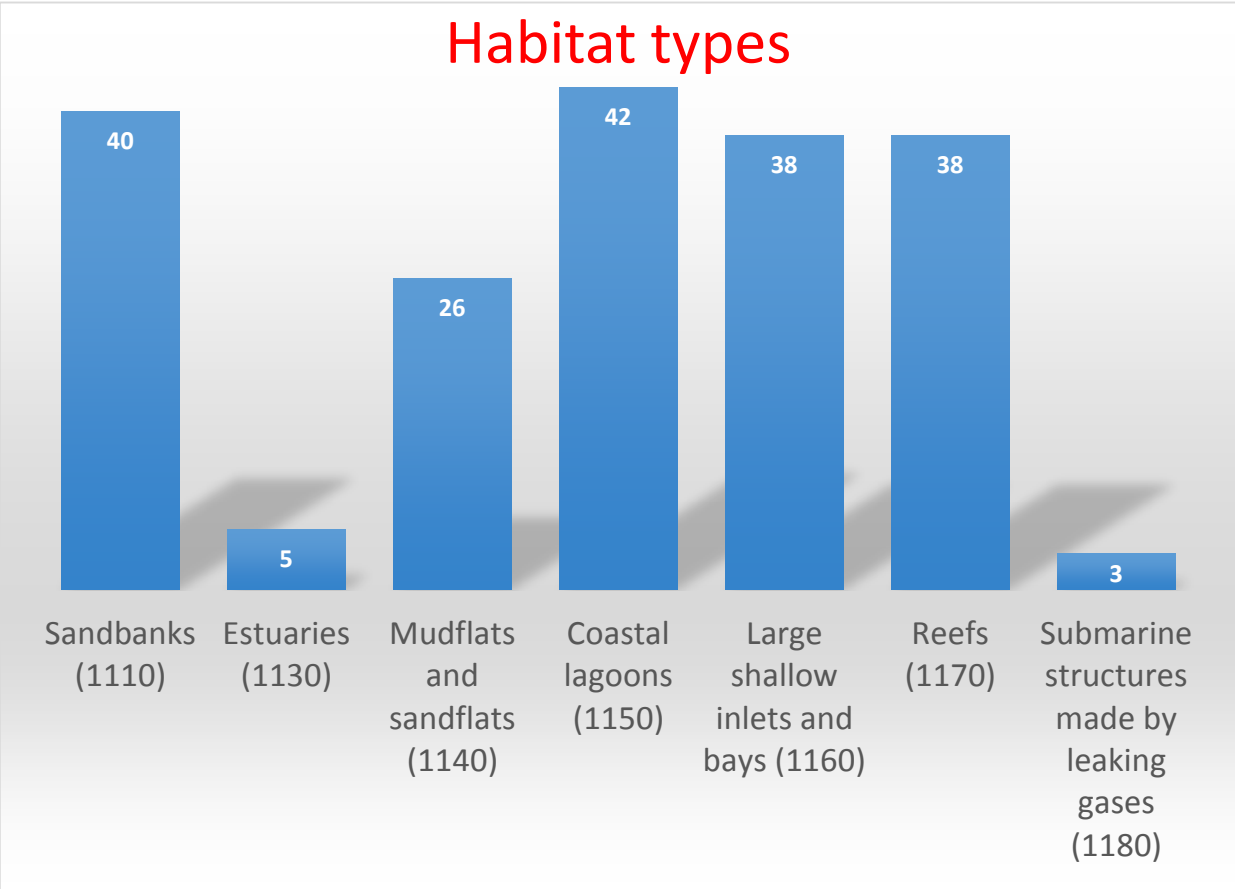
Number of planned and received QS responses

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

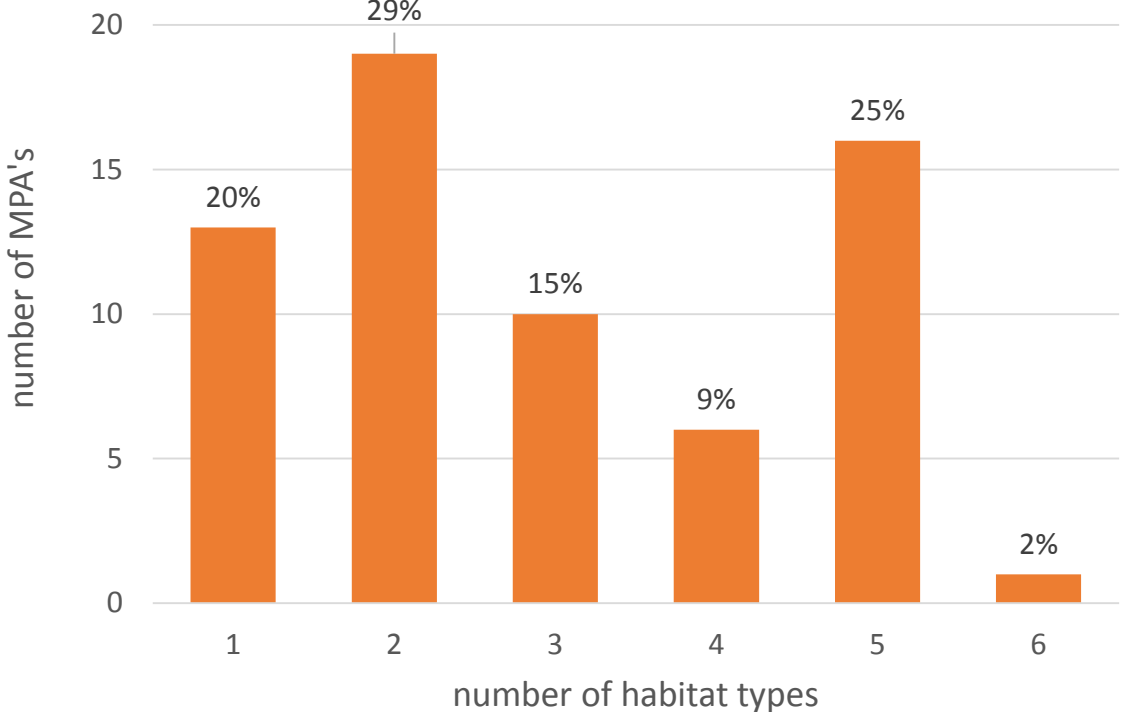
198

68

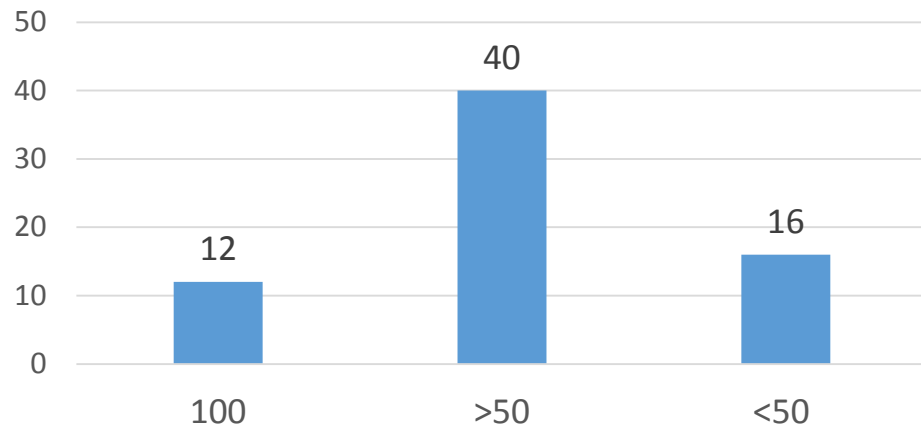
Number of QS responses covering targeted habitat types and species



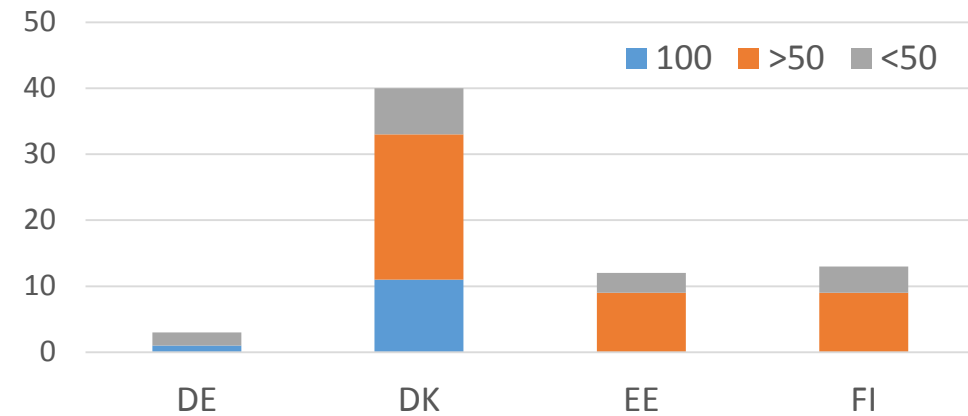
Number of habitat types present per MPA (QS results)



Number of MPA entries according to proportion of marine area



Number of MPA entries according to proportion of marine area and country

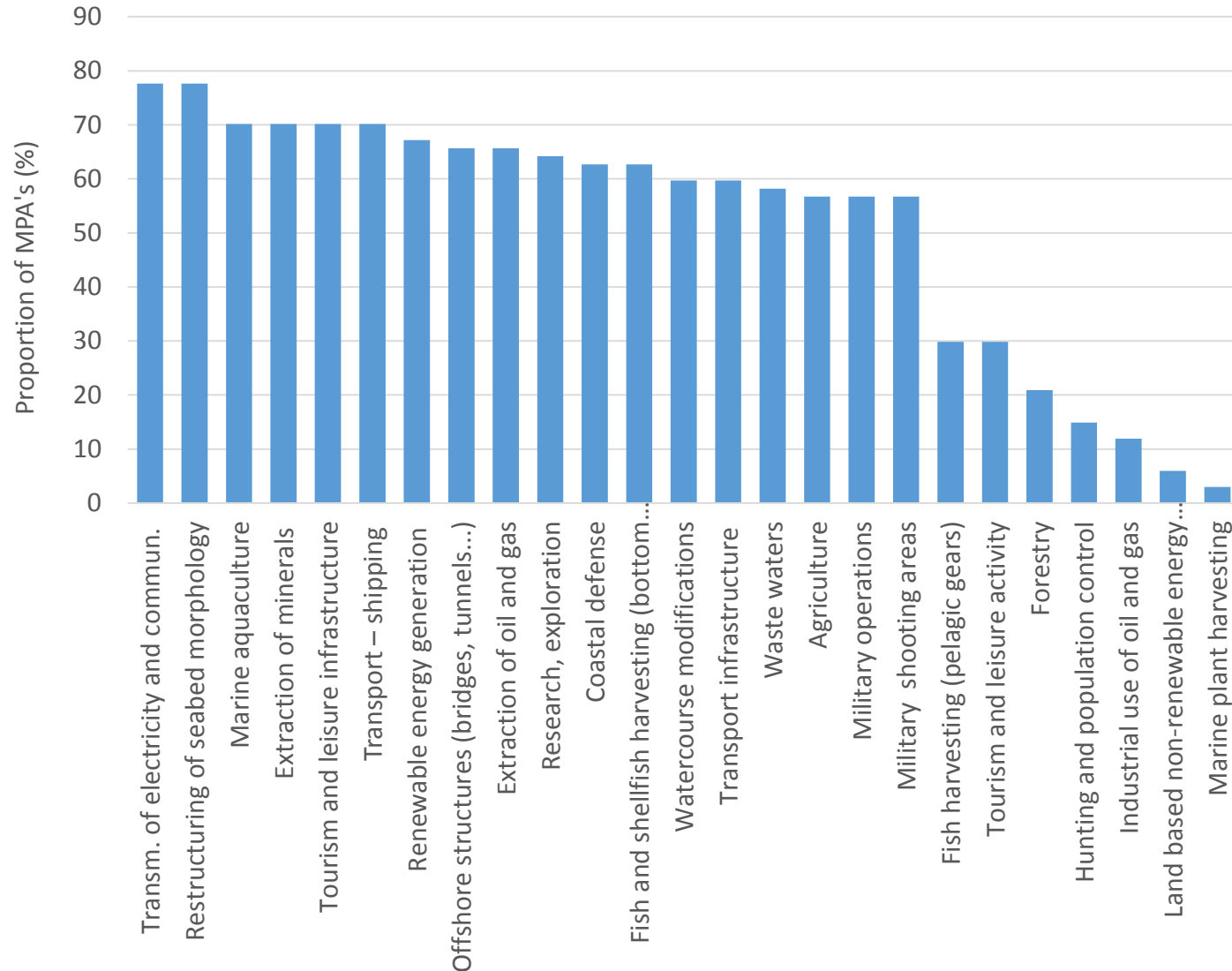


- Most of the responses covered MPA's in the 50%-100% marine area interval
- Most of the responses from DK
- EE and FI did not report on MPAS having 100% of marine area

Management status according to QS management categories:

- **fully managed MPA** (management category “4” for all conservation features): 1 MPA
- **partly managed MPA** (management category <“4” for any of the present conservation feature): 60 MPA’s
- **not managed MPA** (management category “1” for all conservation features): 4 MPA’s

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”

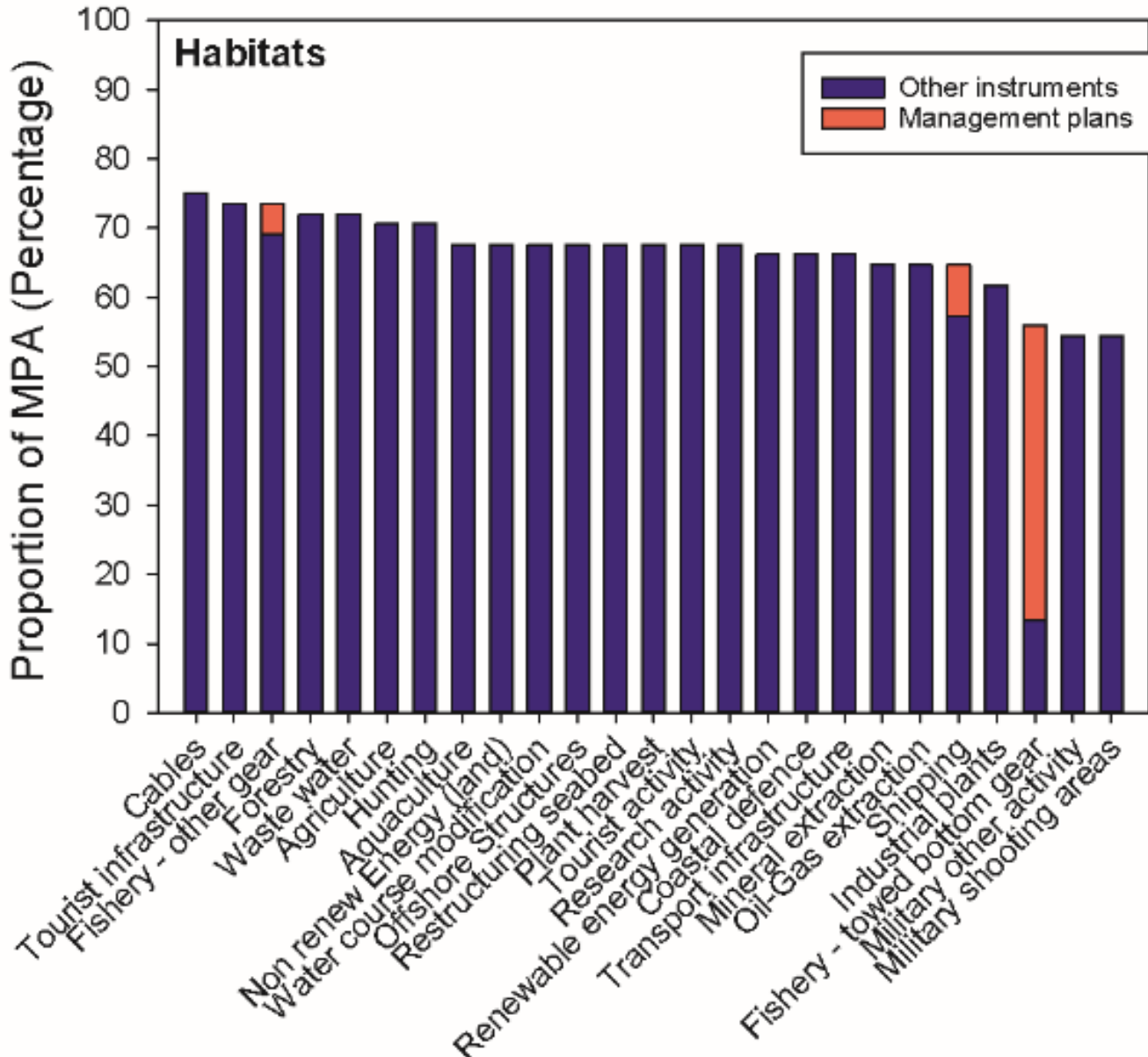
Relatively low relevance of “Pelagic fishing” (30%)

“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)

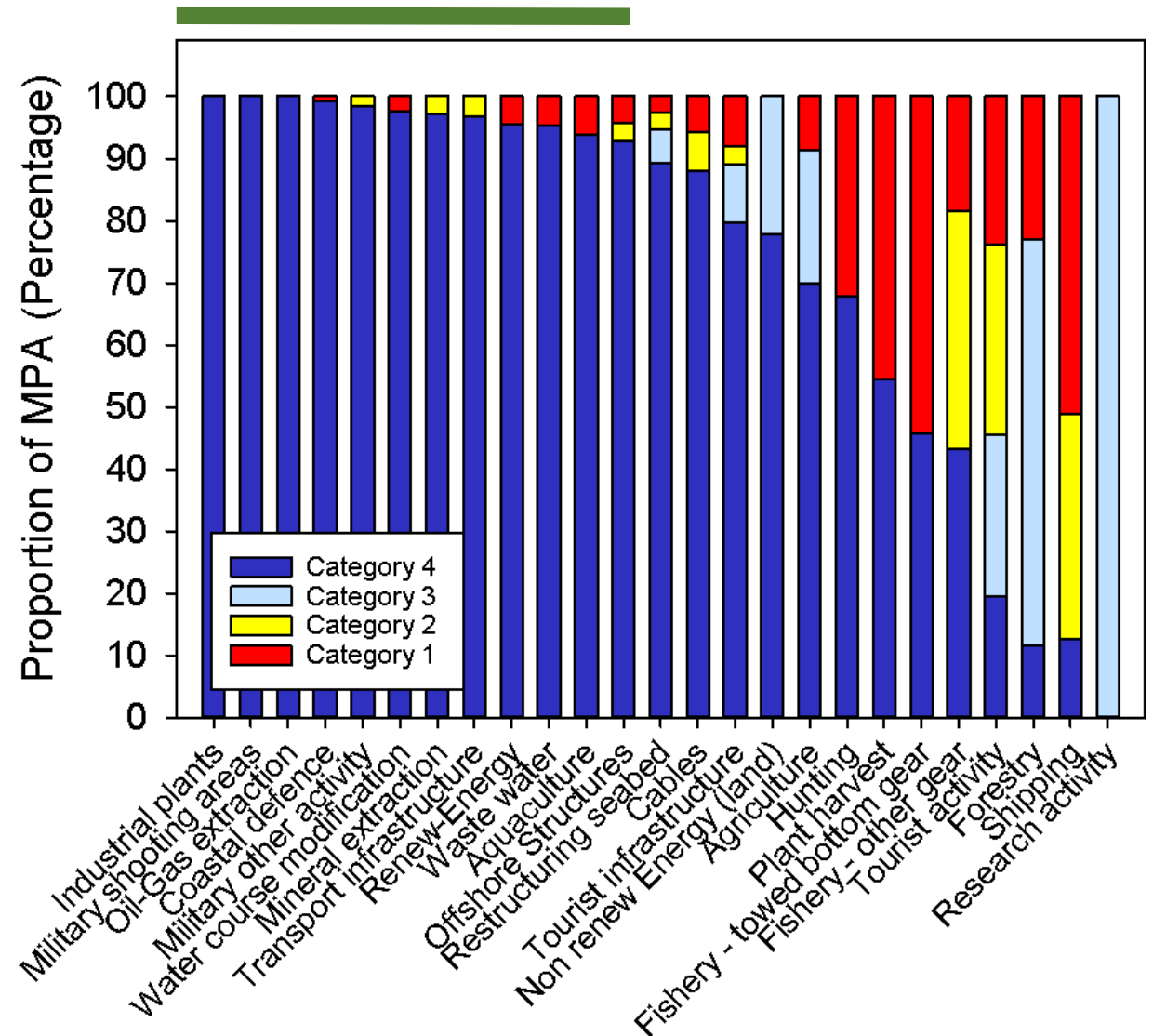
NOTE:
 In DK either OI (and MP) is given for all possible entries
 In Estonia and Finland its given only for entries given rating from 1 to 4



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

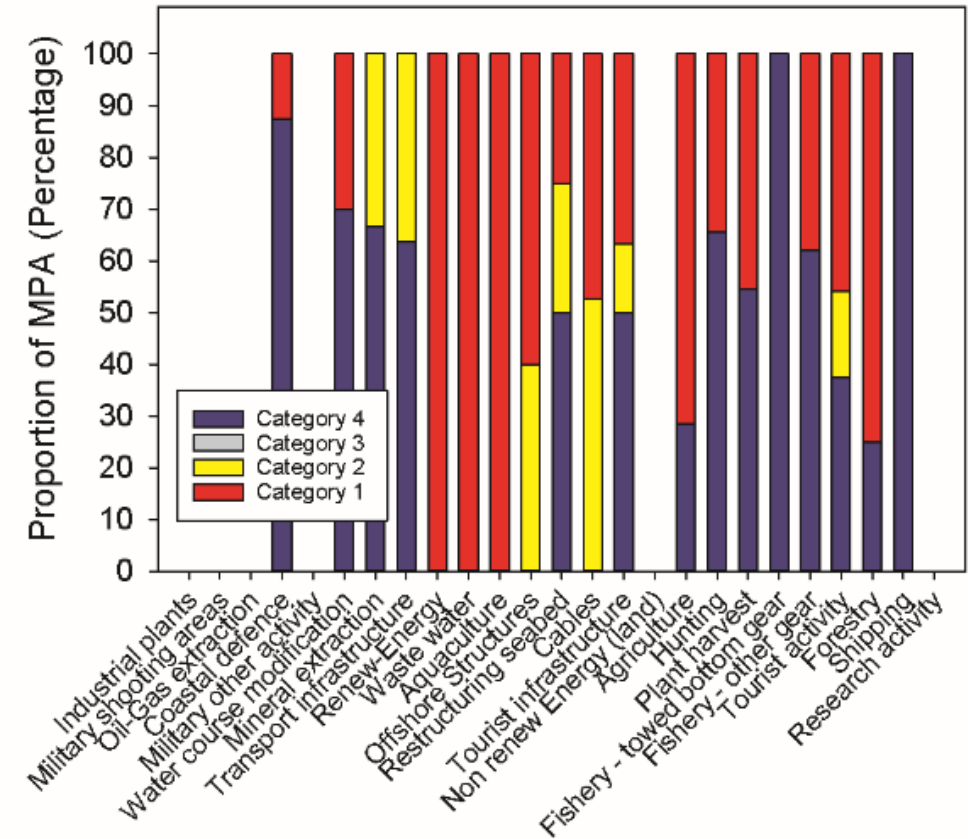
- Completely or almost completely managed relevant human activities (category 4):
 - *Industrial plants*
 - *Military activities (both groups)*
 - *Coastal defense*
 - *Oil and gas extraction.*
- Relevant activities less efficient managed (>50% MPA's with category 1 and 2):
 - *Shipping*
 - *forestry*
 - *tourist activities*
 - *Towed Bottom gear*
 - *Fishery - other gear*

Half of human activities are well managed (category "4" for >90% MPA's)



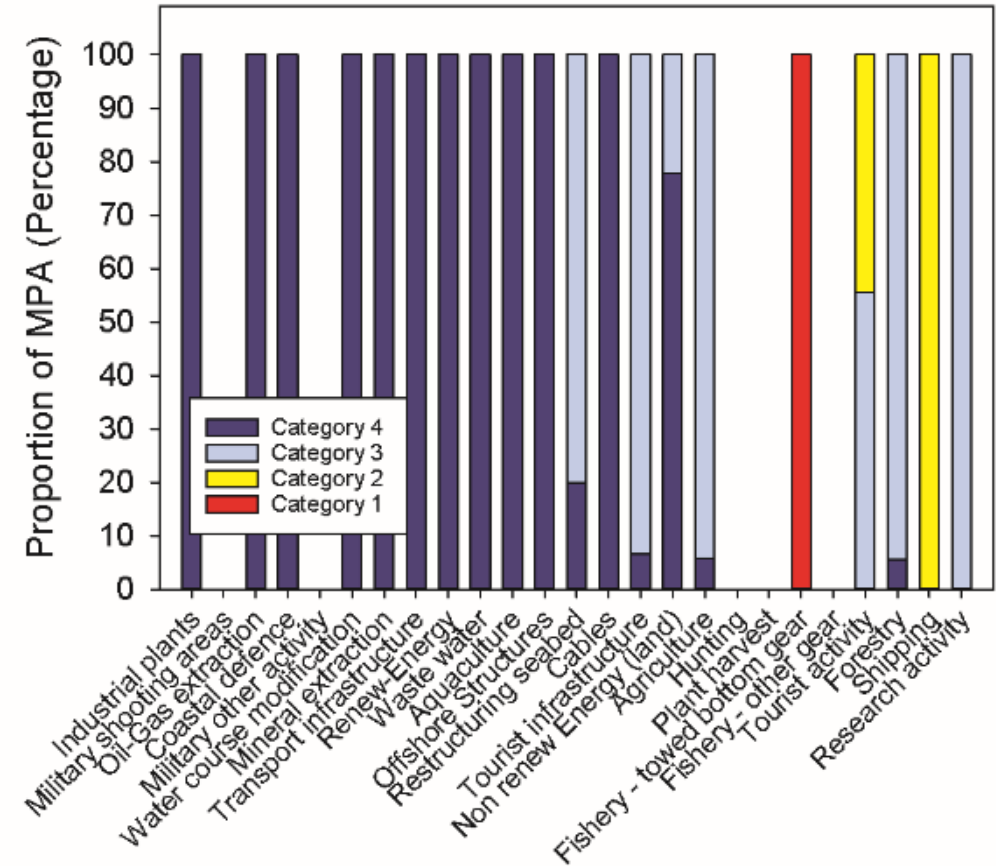
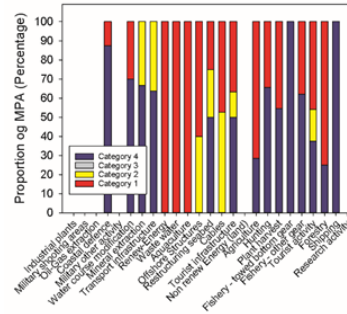
National differences in Management efficiency

- Estonia (12 mpa's):
 - 6 activities judged as not important
 - A relative high number of relevant activities not managed in selected MPA



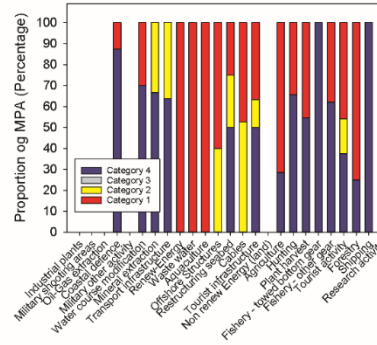
National differences in Management efficiency

- Estonia (12 mpa's):
 - 6 activities judged as not important
 - A relative high number of relevant activities not managed in selected MPA
- Finland (13 MPA's)
 - 5 activities judged as not important
 - 11 activities fully managed
 - Bottom fishery (step 1) and shipping (step 2) is not managed in selected MPA's

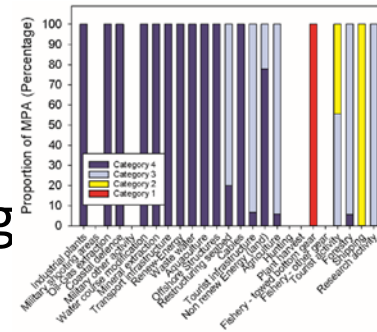


National differences in Management efficiency

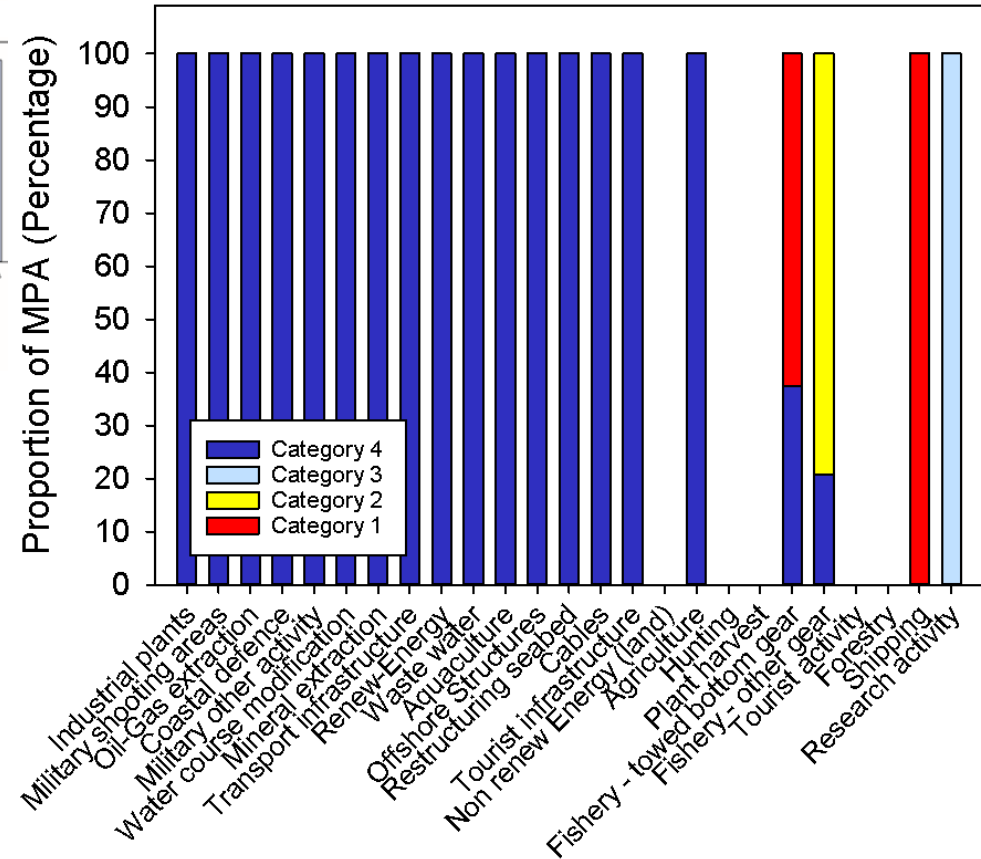
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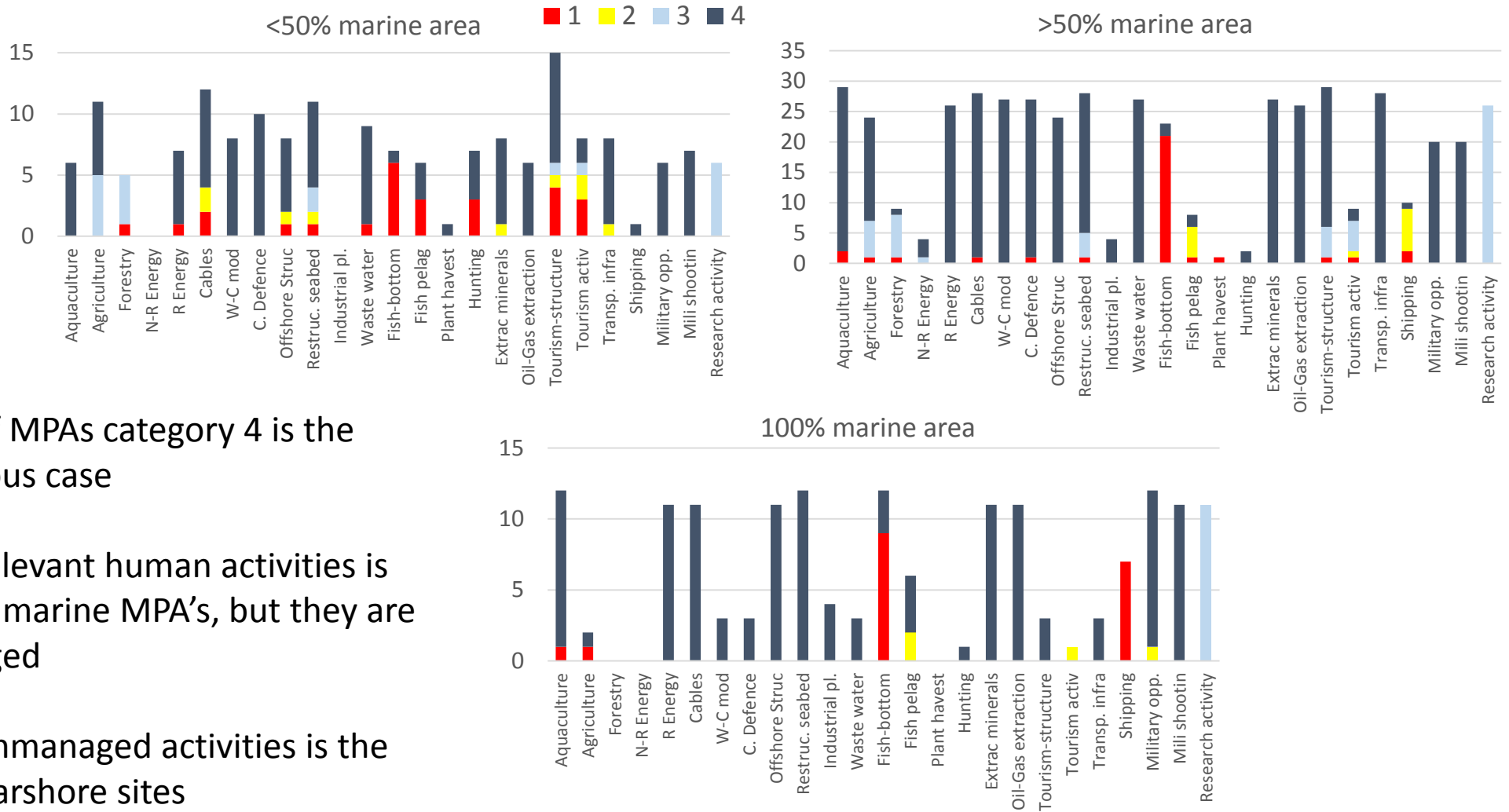
- Finland (13 MPA's)
 - 5 activities judged as not important
 - 11 activities fully managed
 - Bottom fishery (step 1) and shipping (step 2) is not managed in selected MPA's



- Denmark (40 MPA's)
 - 5 activities judged as not importance
 - 15 activities fully managed
 - Shipping not managed and fishery less managed



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

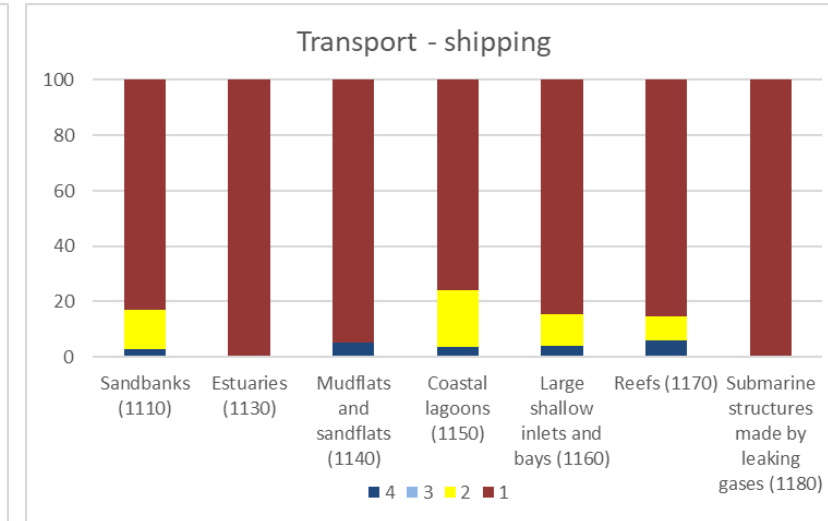
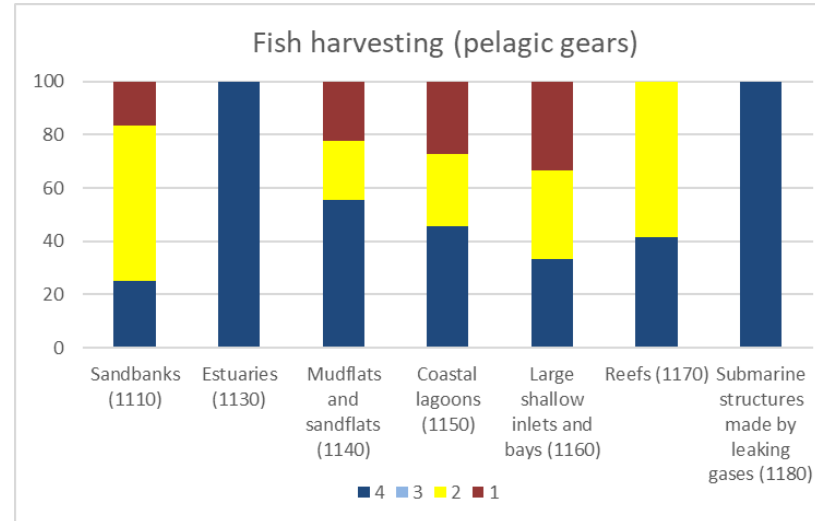
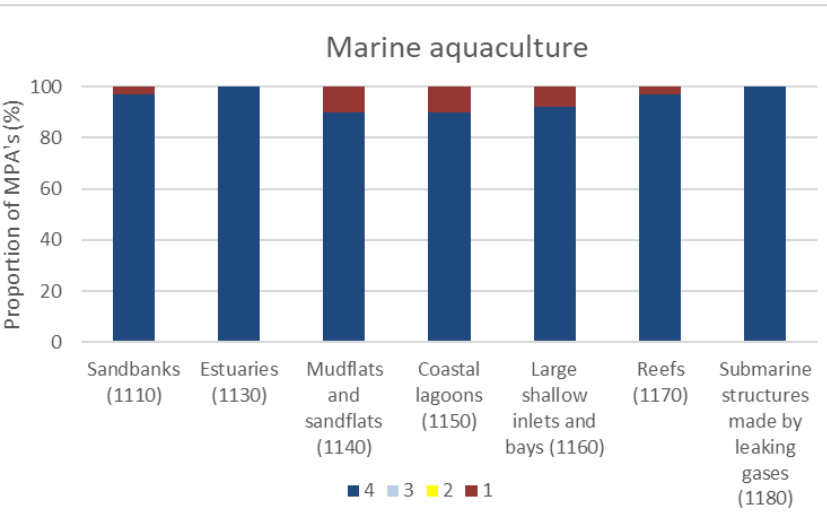
Number of unmanaged activities is the highest in nearshore sites

ME of human activities for different habitat types

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

Management extent differs between habitats

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



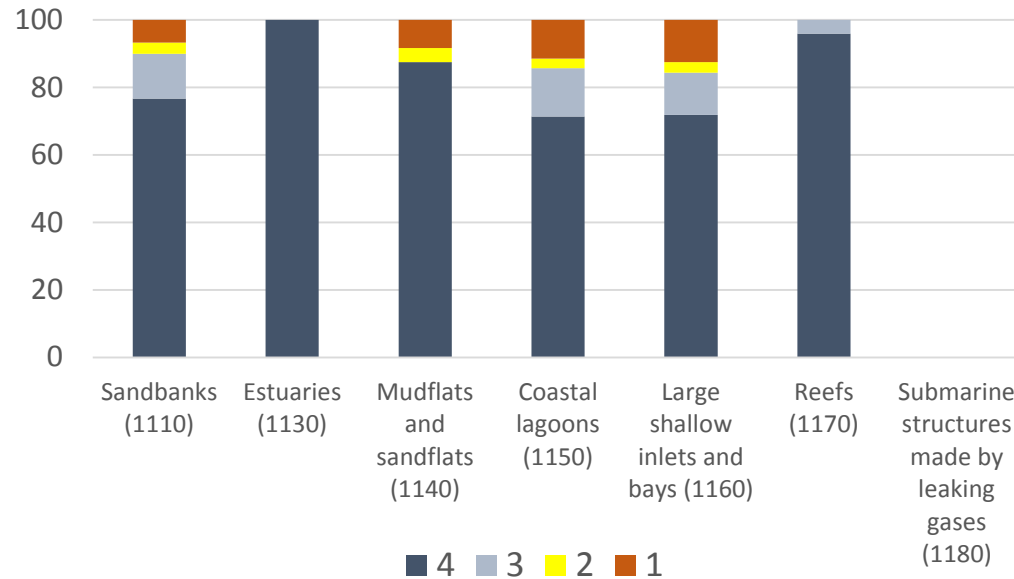
- Industrial use of oil and gas
- Coastal defense
- Restructuring of seabed morphology
- Extraction of minerals
- Extraction of oil and gas, incl. infrastructure
- Tourism and leisure infrastructure
- Transport infrastructure
- Transmission of electricity and communications
- Watercourse modification

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

- Hunting and population control
- Marine plant harvesting
- Tourism and leisure activity

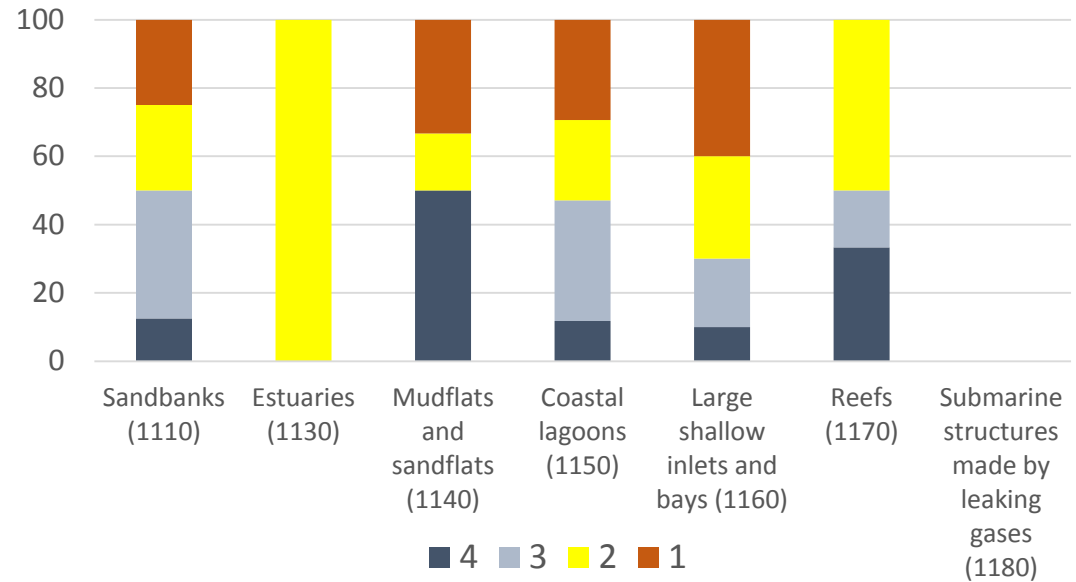
N=47 (70% of total analysed MPA's)

Tourism and leisure infrastructure

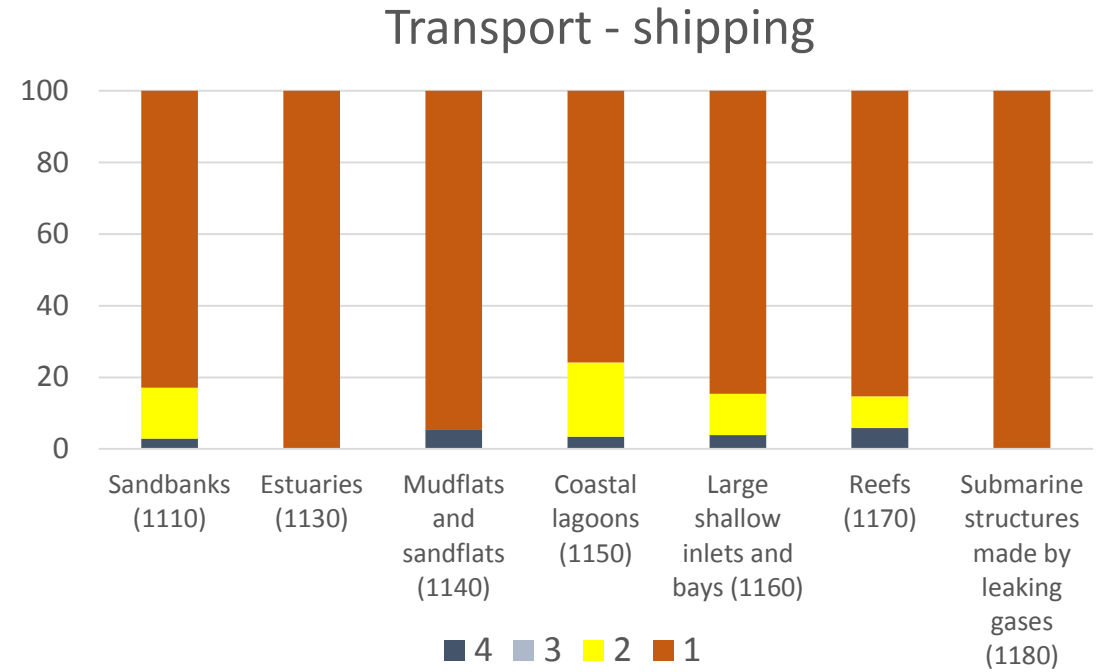
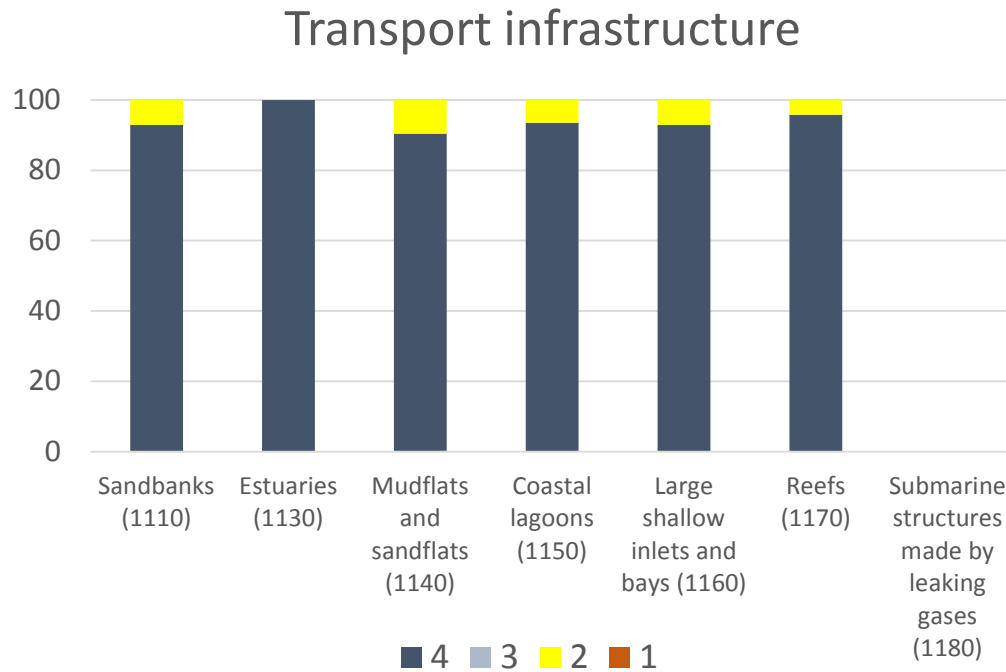


N=20 (30% of total analysed MPA's)

Tourism and leisure activity



Well managed tourism infrastructure (80% of MPA's have category "4"), but not tourism activity (19% of MPA's have category "4"): particularly in case of Estuaries, Sandbanks, Coastal lagoons and Large Shallow Inlets and Bays



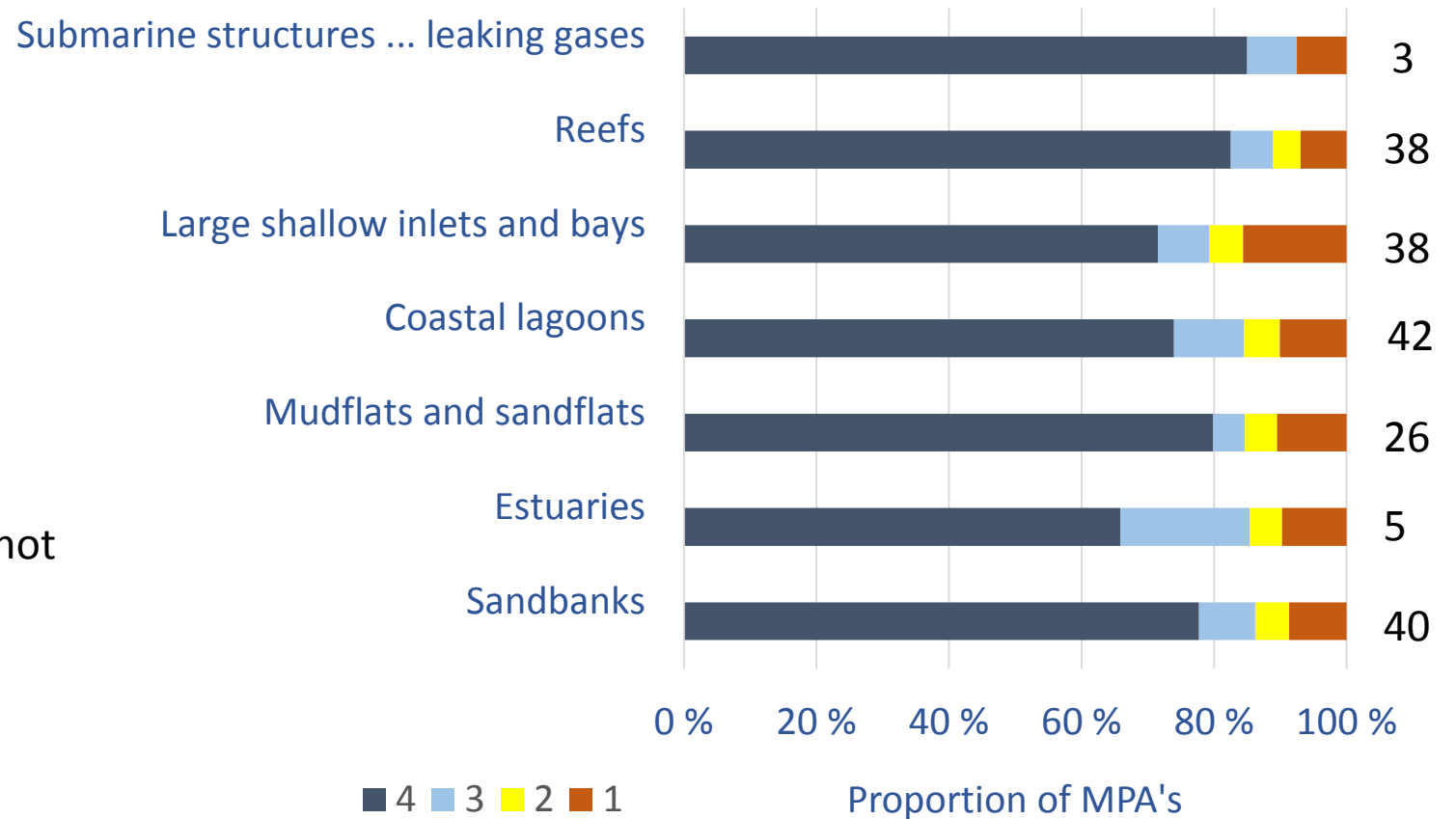
Well managed transport infrastructure (93% of MPA's have category "4"), but not activity (4% of MPA's only have management category "4" and 84% category "1")

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)

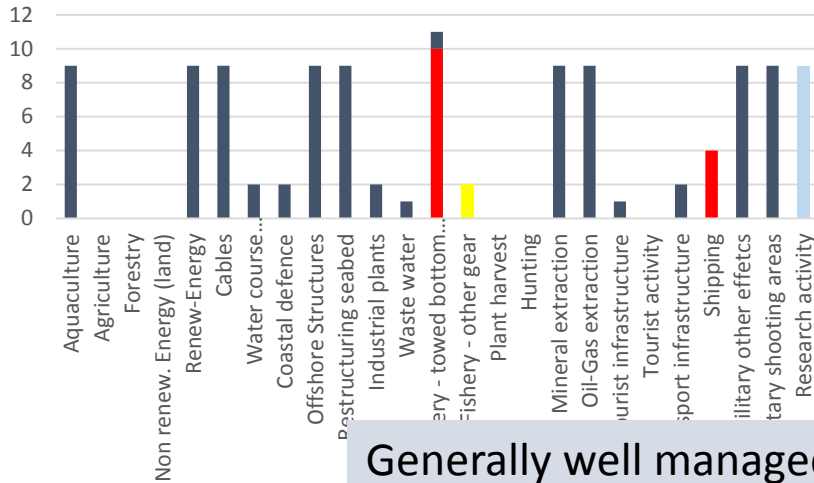
“Large Shallow Inlets” have the highest proportion (16%) of MPA’s with unmanaged human activities (management category “1”)

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

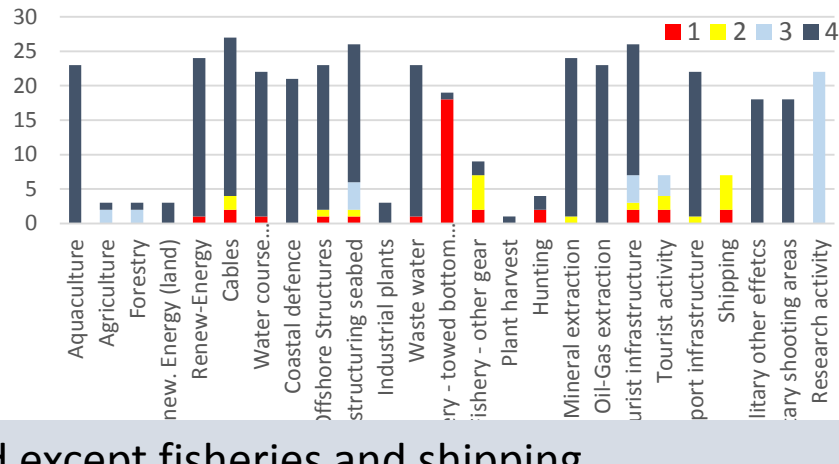


Sandbanks (1110)

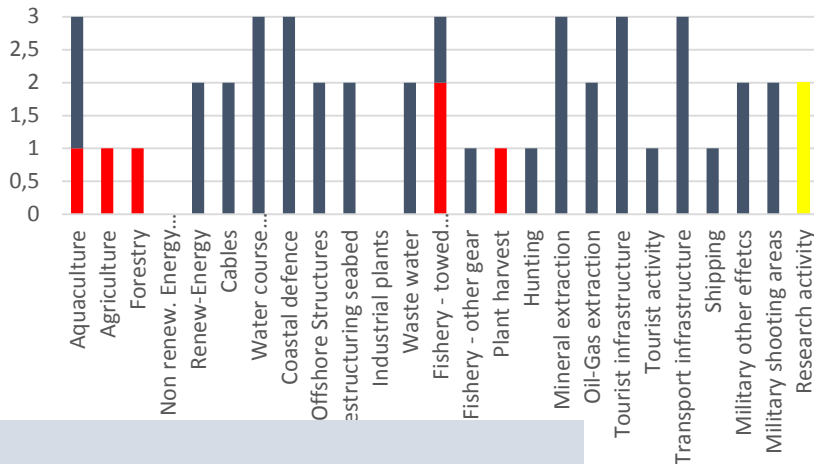
100% marine area



100%> marine area >50 %



marine area <50%



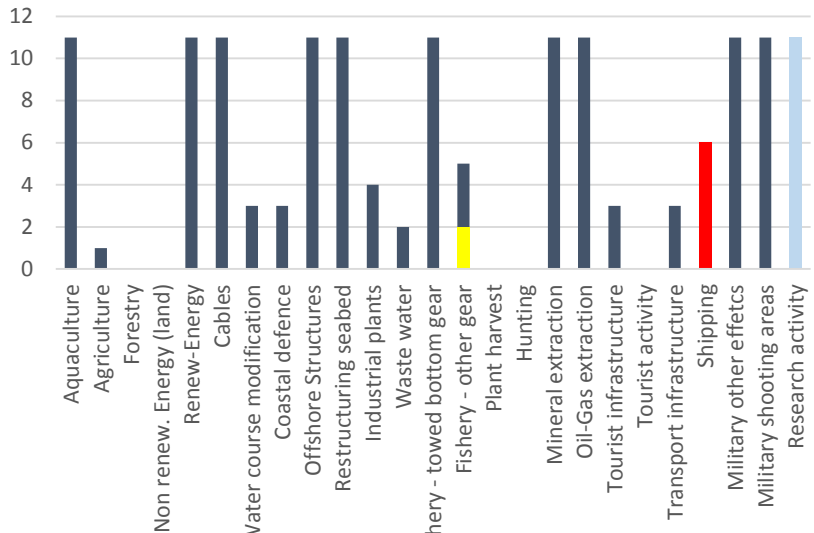
Generally well managed except fisheries and shipping

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

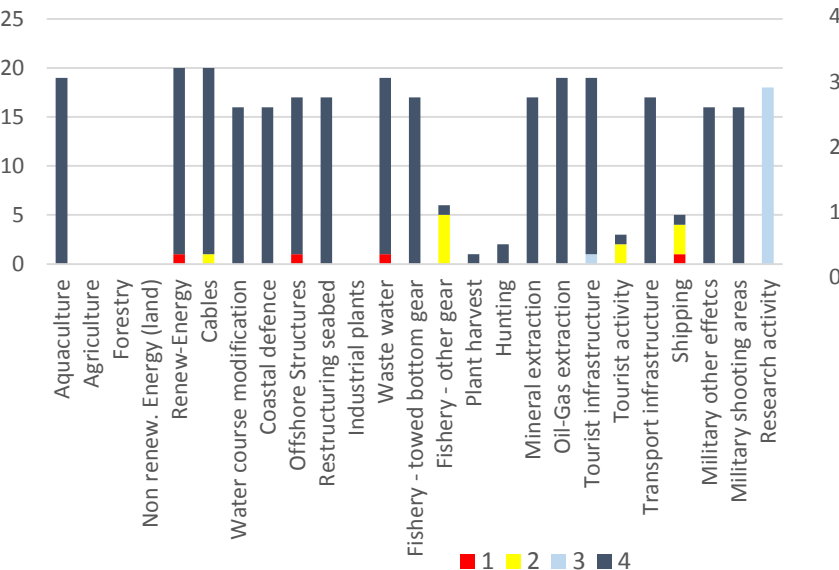
Nearshore sandbanks and reefs are very similar in the management extent

Reefs (1170)

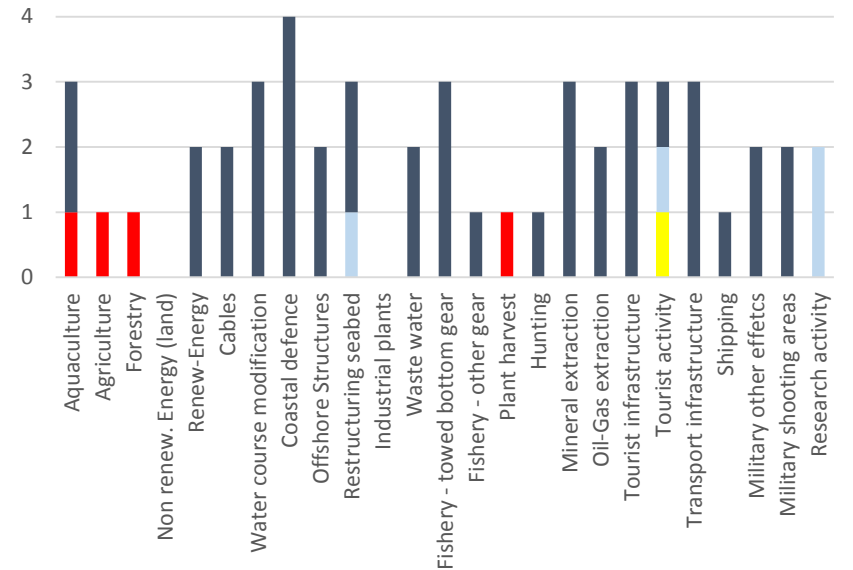
100% marine area



100%> marine area >50 %



marine area <50%



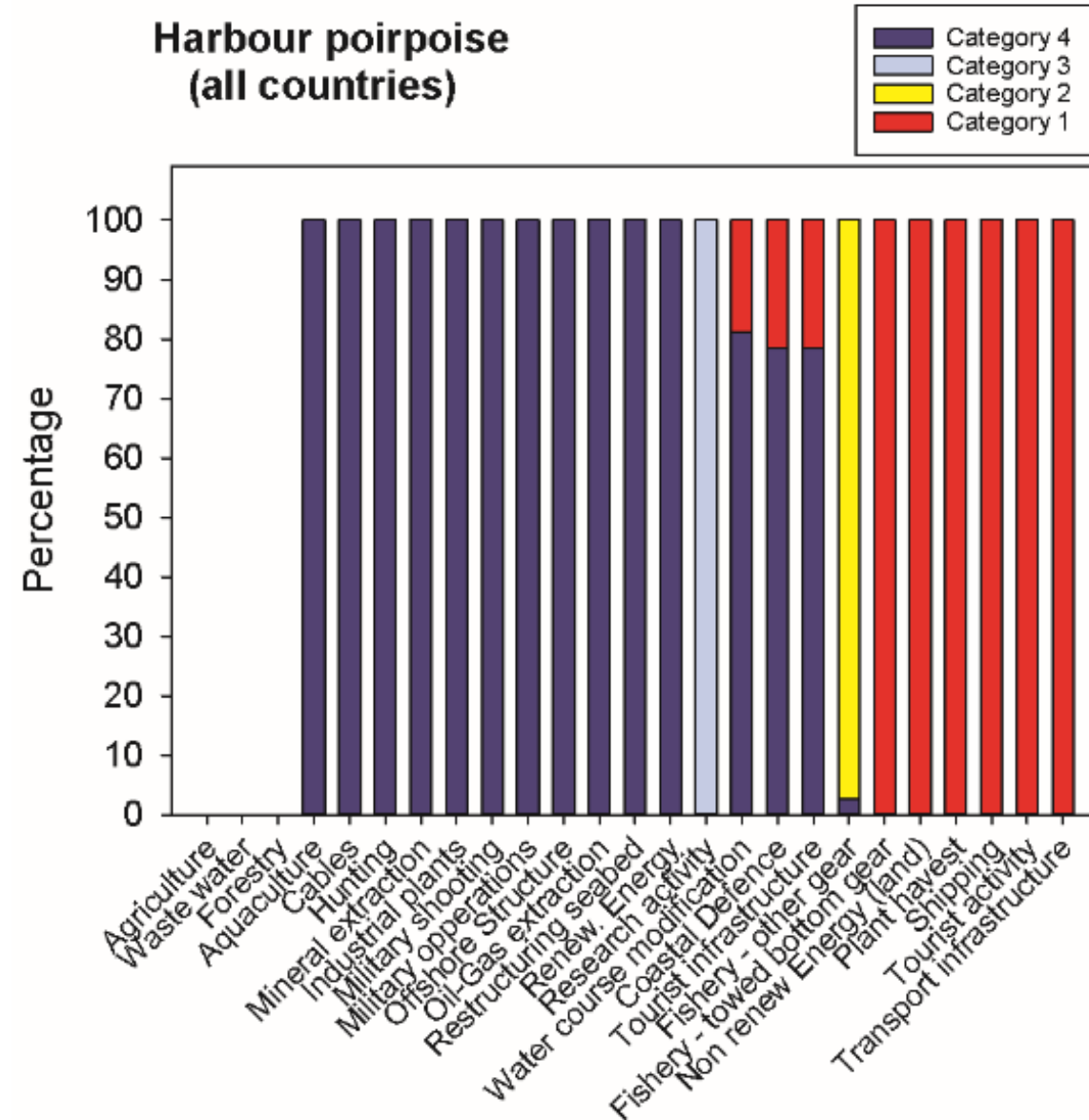
Danish Case - examples on present differences in MPA management

- Most human activities are managed in general covering all MPA's where it is relevant (like sand and gravel extraction)
- Fishery management a special case
 - Adopting regulation is prioritized for Reef (1170) and bubbling reef (1180) and MSFD soft bottom areas in Kattegat. (Prober mapping a "show stopper" for years)
some off-shore areas >12nm still in international consultation process according to the Common Fisheries Policy Framework.
 - Mussel fishery in 1160 is now pending mapping of biogenic reef areas (Definition of biogenic reef now accepted)
 - Regulation of fishing activities on sandbanks is pending finalization of reef and bubbling reef regulation



Harbour porpoise management effectiveness

- Data from 38 Danish MPA and 1 German
- Management: Exclusively OI
- 3 activities judged without importance
- A large group of activities managed in all MPA
- 5 activities partly managed.
Fishery management (other gear) is conducted in just one (German) MPA. In DK the risk of entangling in gillnets is noted in a MP so far having focus on “finding best solutions”.
- Activities without management:
 - Fishery-towed bottom gear
 - Non renewable energy plants
 - Plant harvesting (???)
 - Tourist activities
 - Transport infrastructure
 - shipping



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