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Marine protected areas in the European Union

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photo: Erwan Amice

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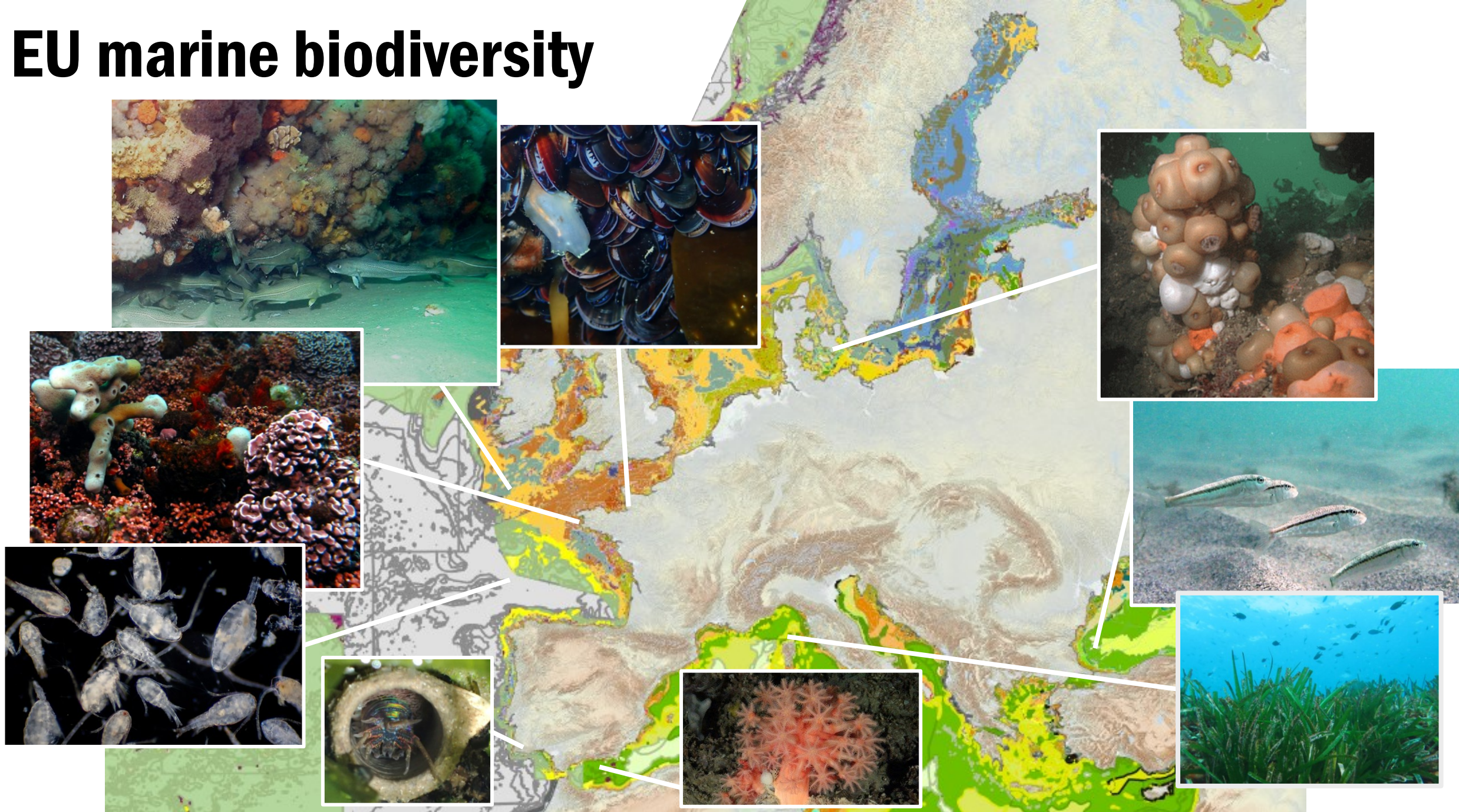
marha
marine habitats



protectedseas

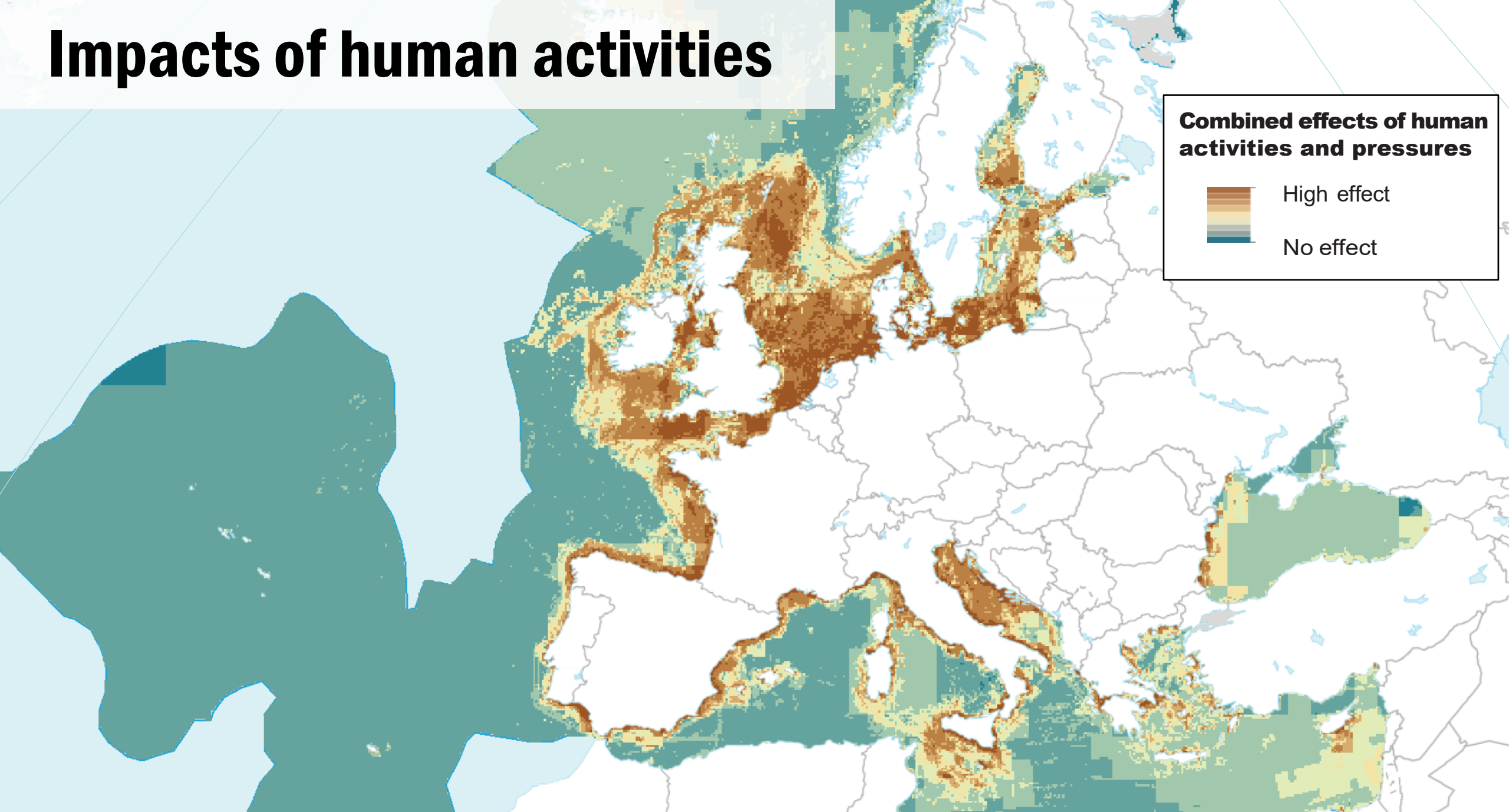
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EU marine biodiversity



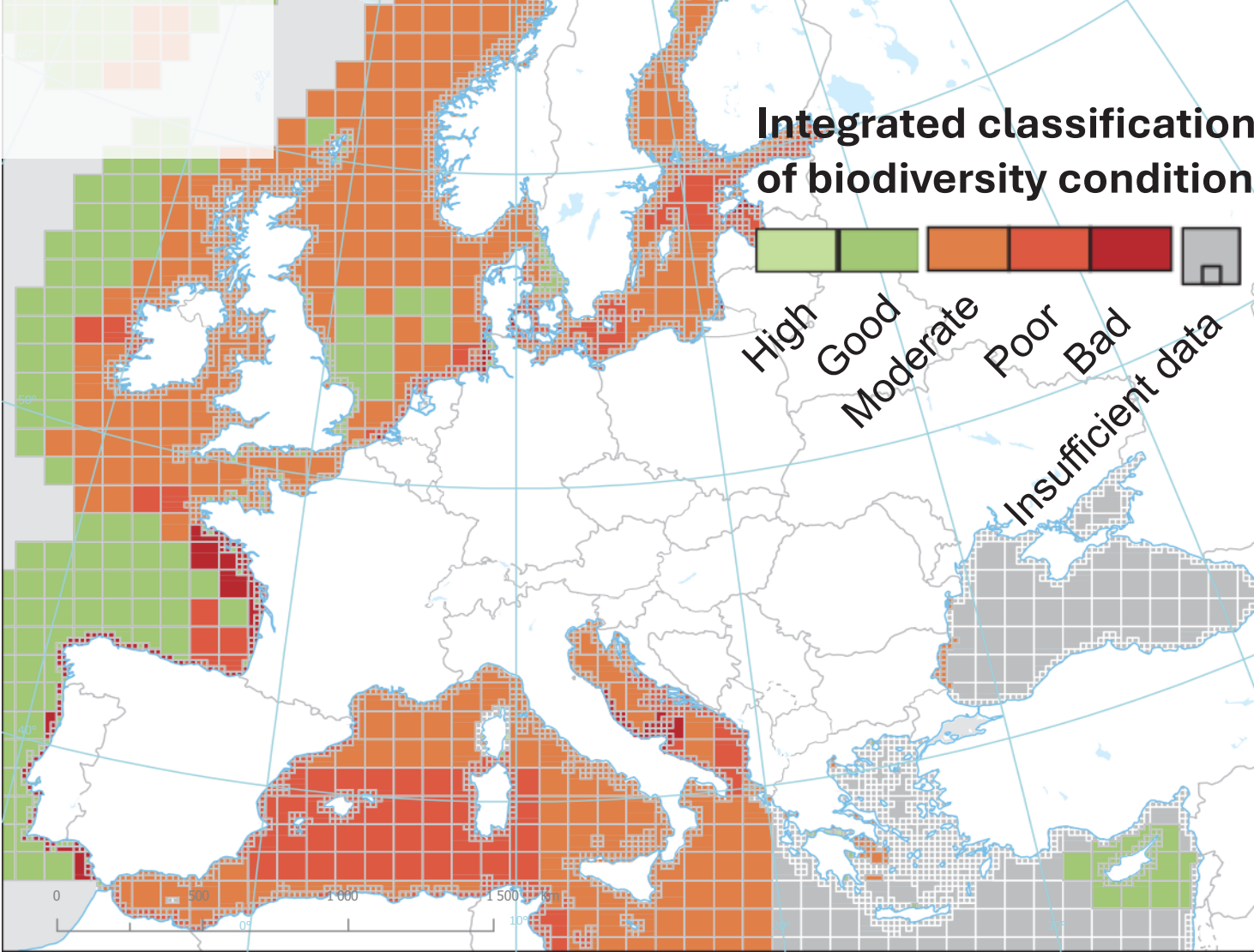
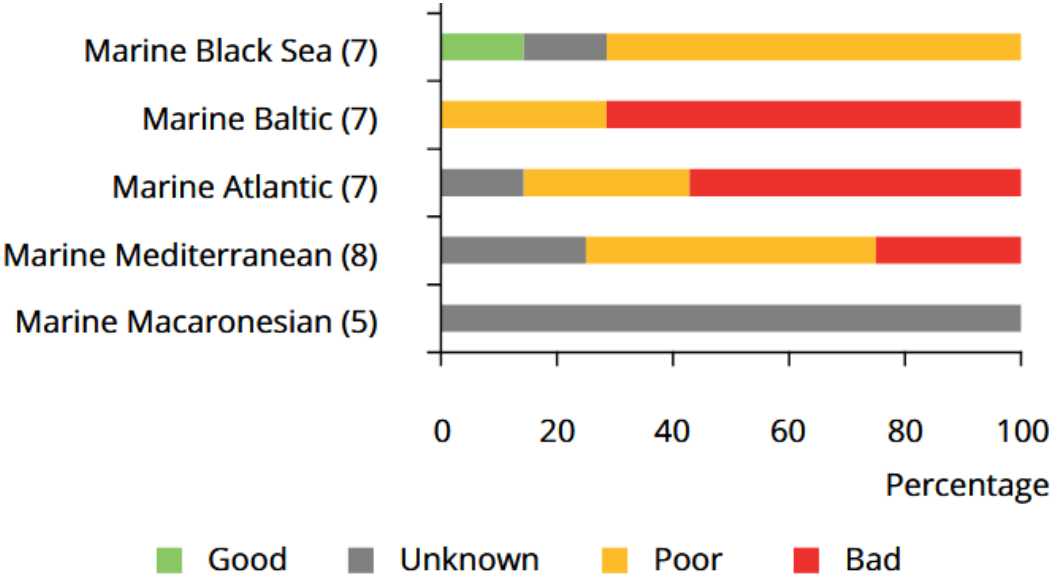
Map: EMODnet. Photos : Hans Christian Andersen ; NOAA ; Marta Terry; Oceana; Life Marha; OSPAR; & my own

Impacts of human activities



Biodiversity condition

Conservation status of habitats



Map: (BEAT+) Korpinen et al. ETC/ICM Technical Report 4/2019

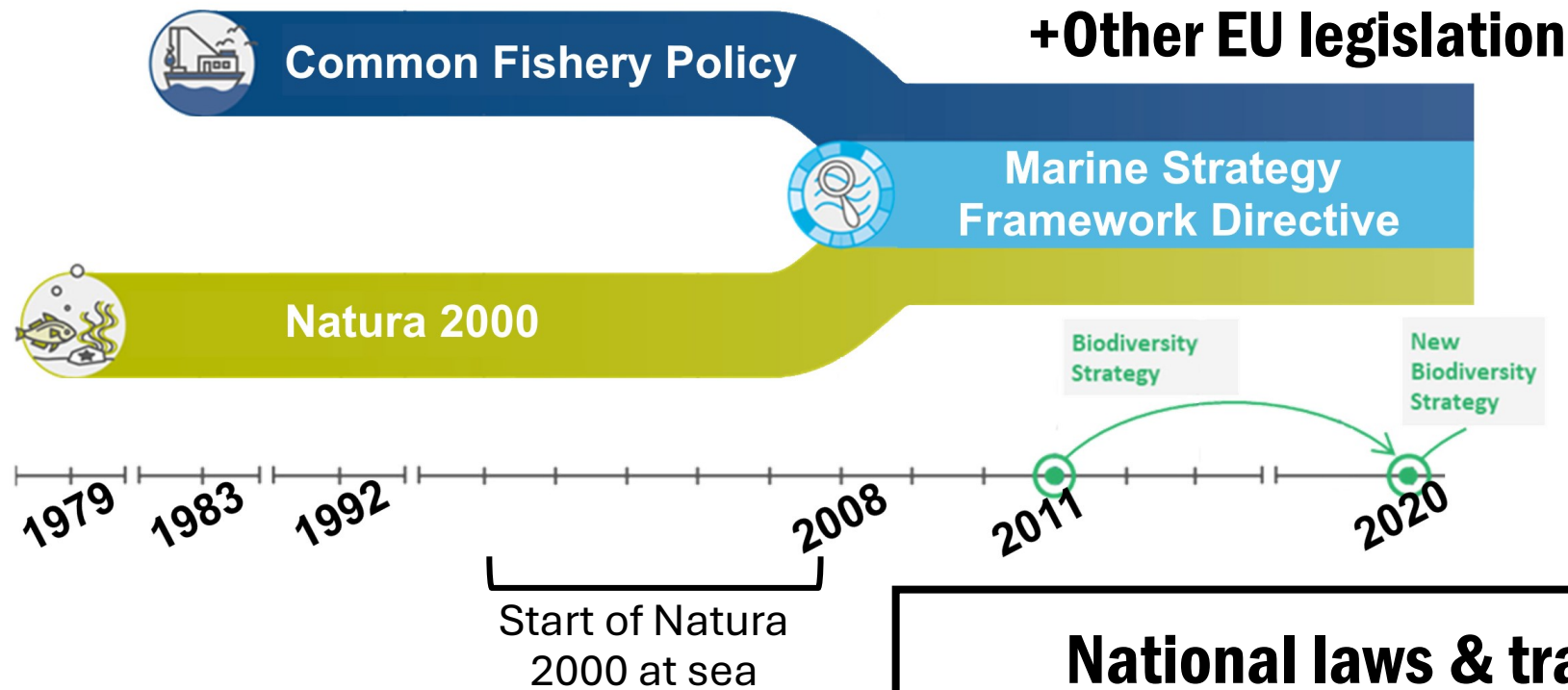
State of nature in the EU. Results from reporting under the nature directives 2013-2018, 2020

Marine Protected Areas as a conservation tool

“MPAs”:

- area [, volume] of the ocean set aside for **long-term conservation** aims...
 - and **socio-economic benefits**,
 - where human **pressures are reduced**

Marine Protected Areas in EU legislation

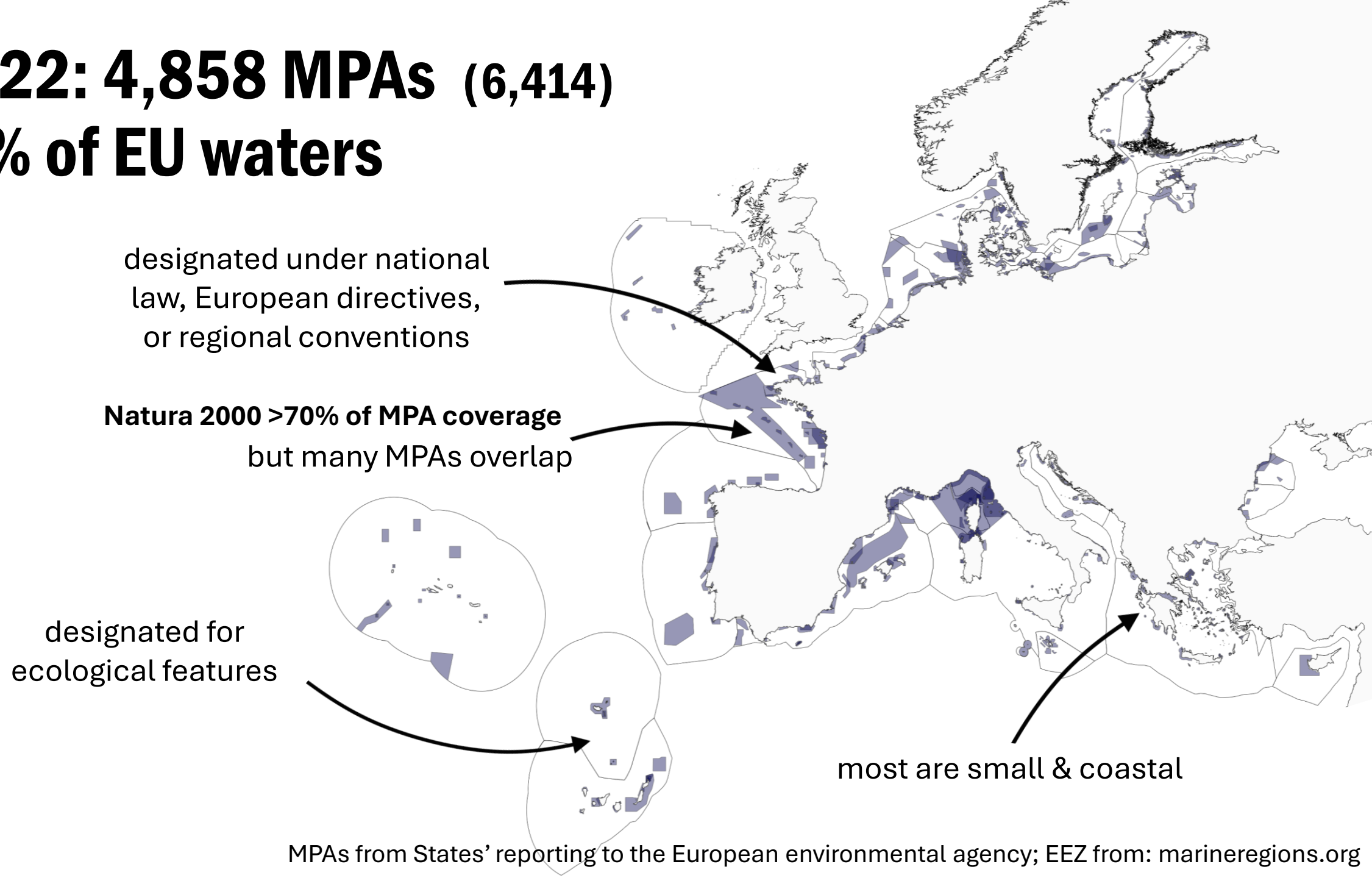


- International treaties like the 30x30 target from the Global Biodiversity Framework (CBD),
- Regional environmental (e.g., HELCOM) & fisheries (RFMOs) conventions

National laws & transposition

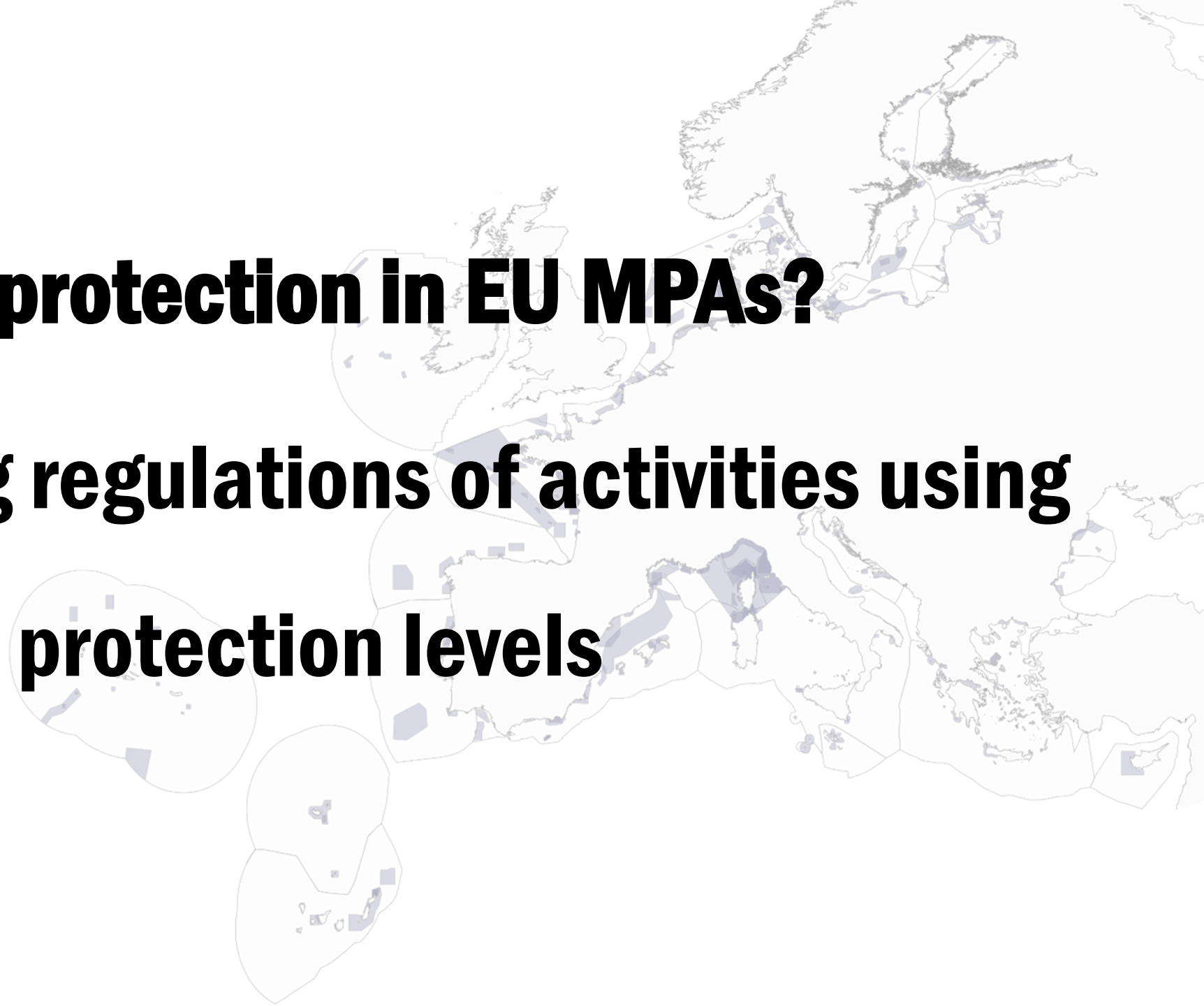
**>30 types of MPAs
across EU countries**

In 2022: 4,858 MPAs (6,414) 11.4% of EU waters



What protection in EU MPAs?

**Summarizing regulations of activities using
protection levels**



Data sources

MPA polygons from States' reporting to the European Environmental Agency



Management plans, up to 2021
3,312 MPAs, 460 zones

- Publicly available documents, websites & digital maps
- Contact with management authorities to request information

including from

MSP+



MSP and additional databases:
publicly available and downloadable,
up to 2022

2,164 MPAs , 172 zones

- EU MSP platform + EMODnet
- Ministries and MSP national platforms
- Regional platforms
- Additional non-comprehensive search

Expert-based assessments

Management plans, MSP (include additional bylaws), surveys

- OSPAR MPA assessment (Roessger et al. 2022); 93 MPAs, 8 zones
- Portugal MPA assessment (update from Horta e Costa et al. 2019); 58 MPAs, 14 zones

Combining regulations & activity data from multiple datasets, by keeping the most restrictive

Quality check
EU assessment

Activities
at MPA & zone scale

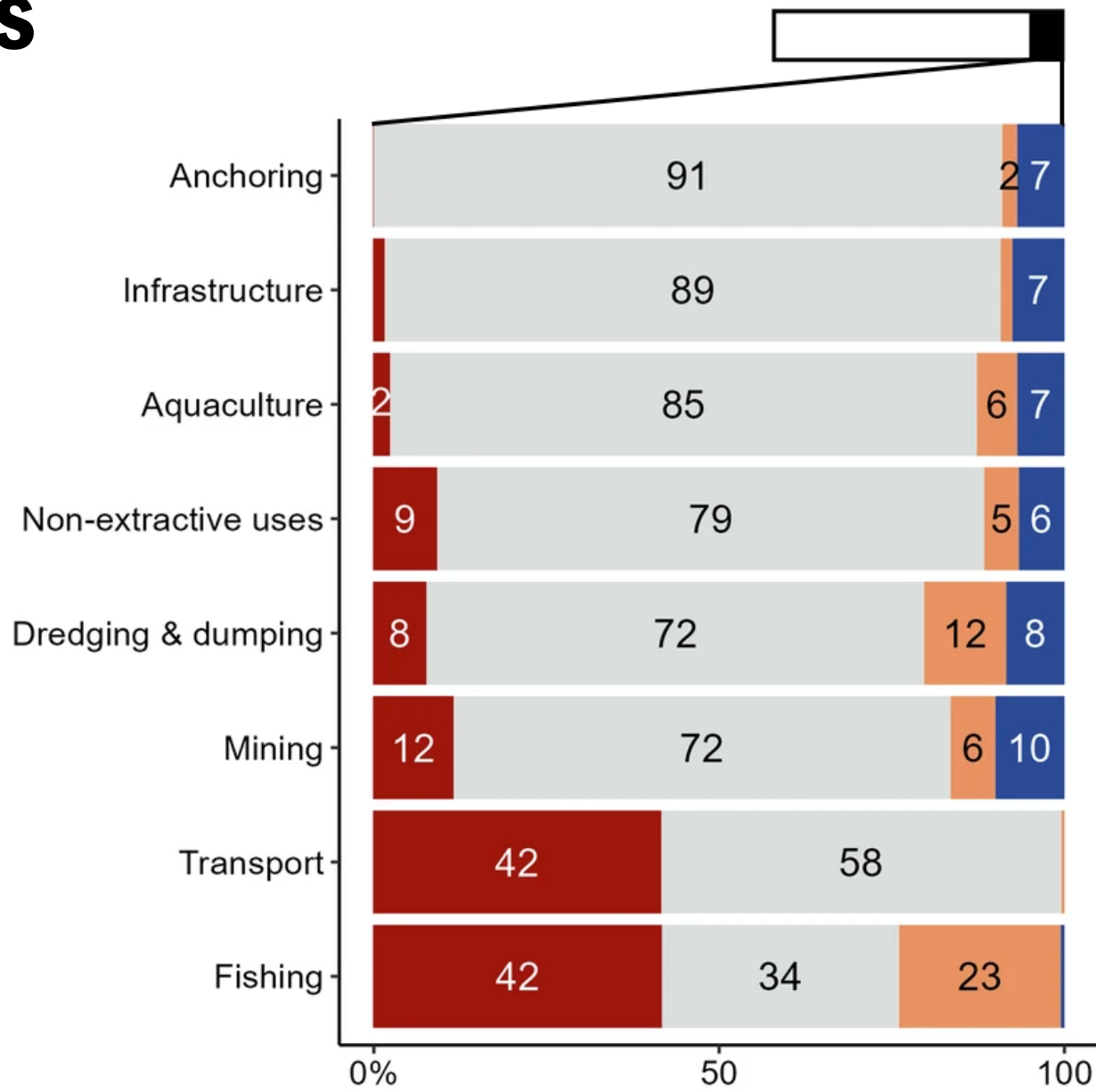
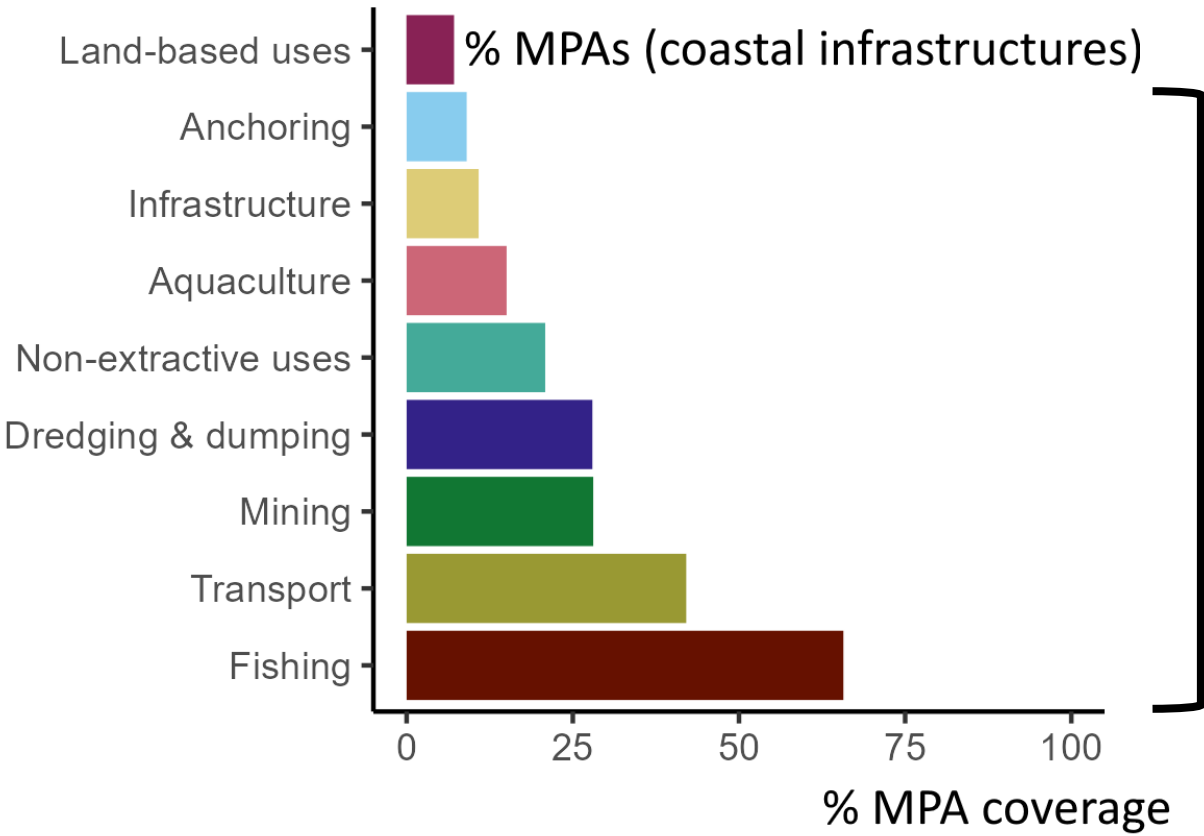
MPA info from WDPa, Medpan, ProtectedSeas

Methods, all sources, & database : Aminian Biquet et al., Data in Brief, 2025



Mapping MPAs' regulations

MPAs: 12% of EU waters



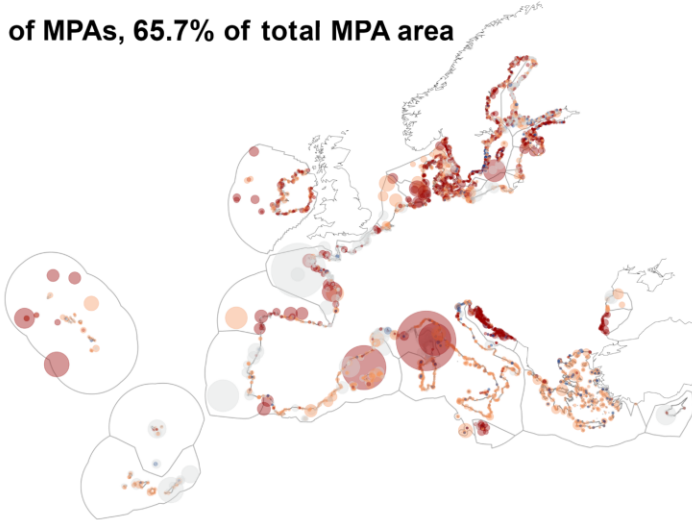
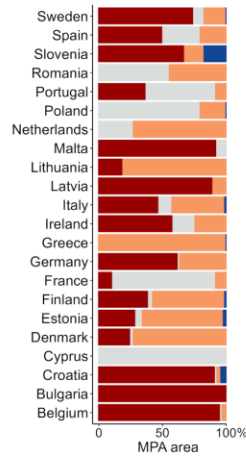
See also Lippi et al. 2024

Regulations Allowed Restricted Prohibited Unknown

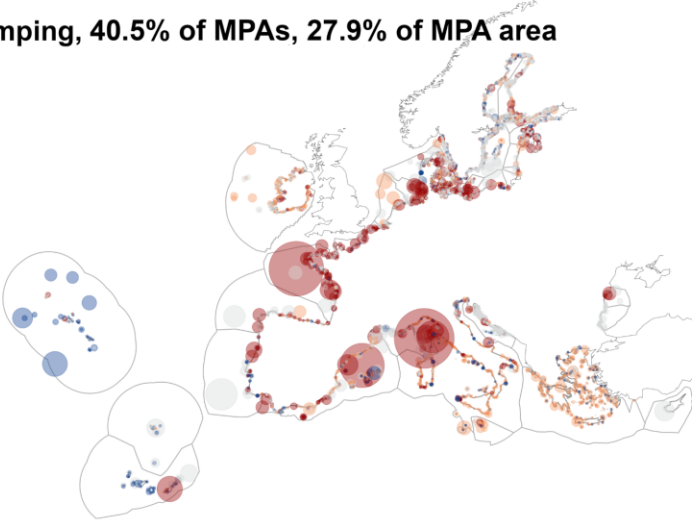
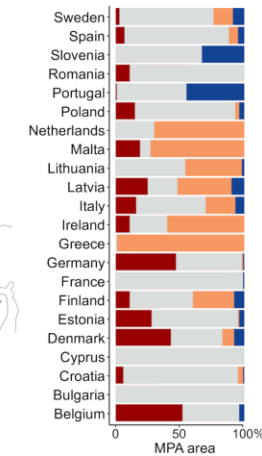
What are MPAs made for?

- Allowed
- Restricted
- Prohibition
- Unknown

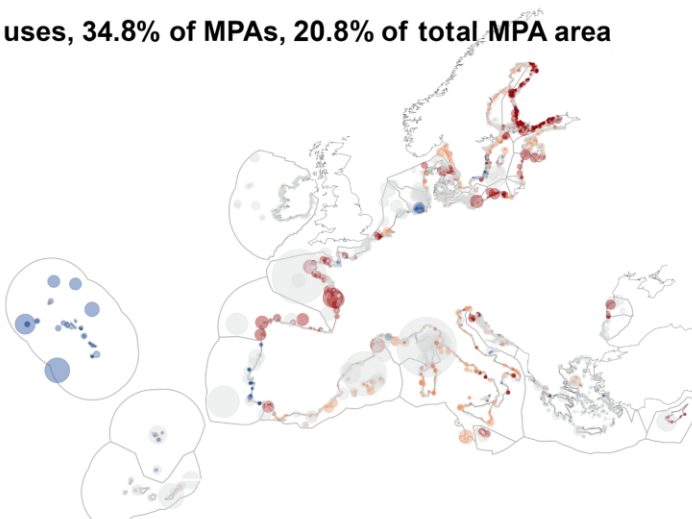
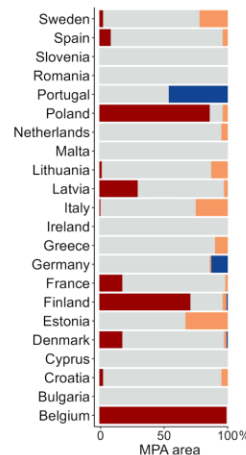
A. Fishing, 69.4% of MPAs, 65.7% of total MPA area



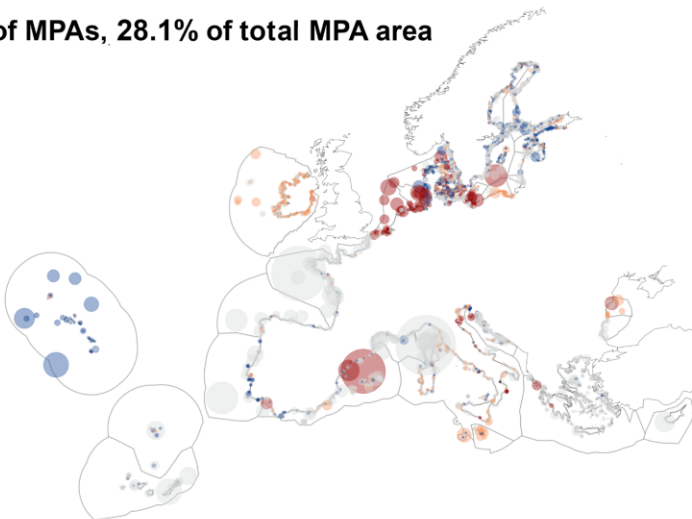
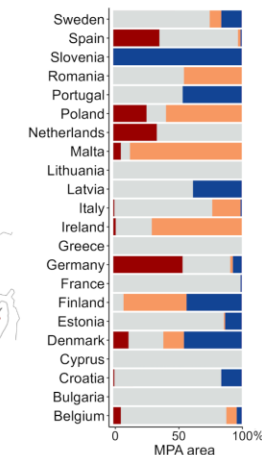
B. Dredging & dumping, 40.5% of MPAs, 27.9% of MPA area



C. Non-extractive uses, 34.8% of MPAs, 20.8% of total MPA area



D. Mining, 28.0% of MPAs, 28.1% of total MPA area



Boundaries
— National waters

MPA area (km²)
40,000
10,000
1,000
50

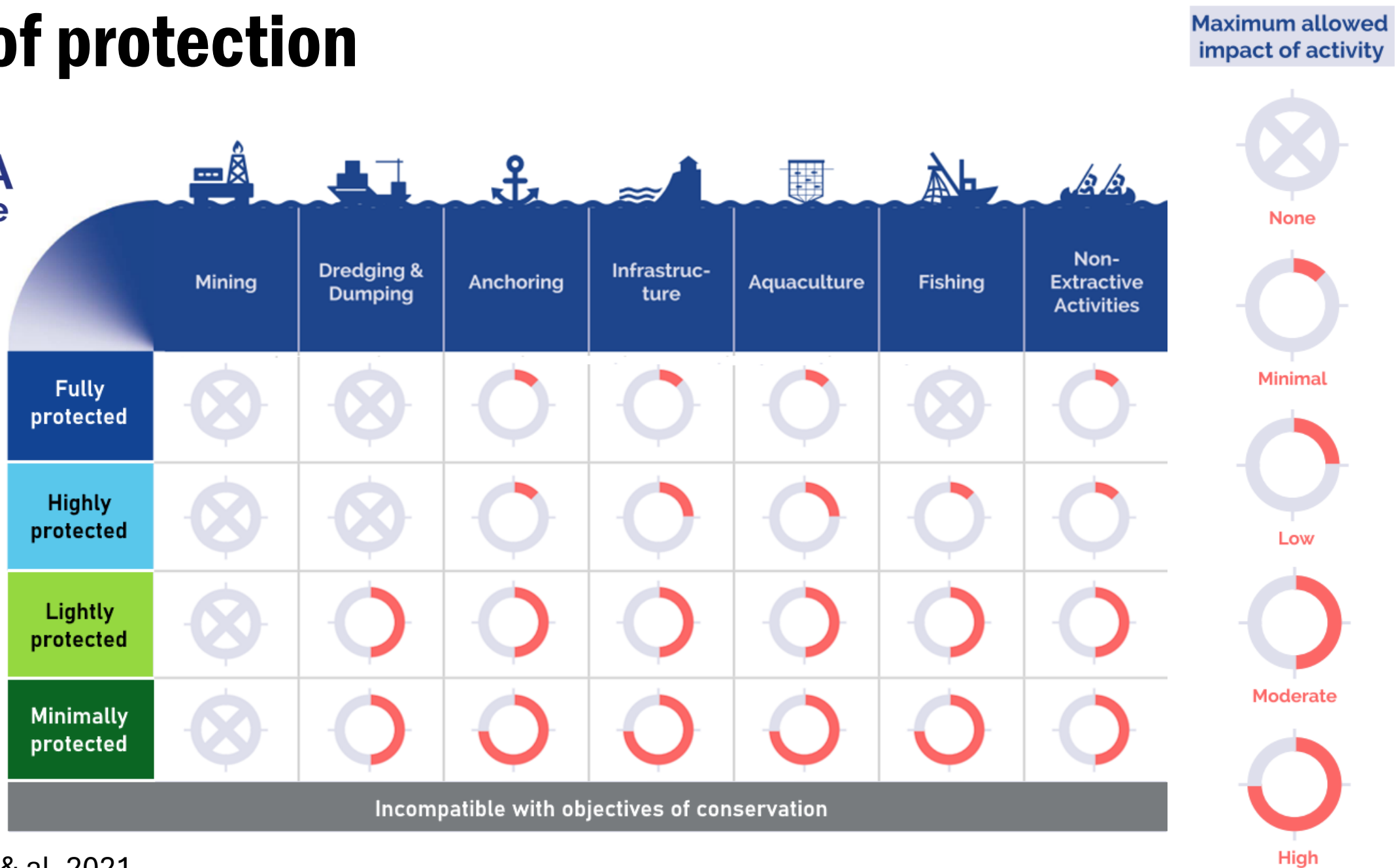
Regulations

Allowed Restricted Prohibition Unknown

Further analyses & recommendations: Aminian-Biquet et al; npj ocean sustainability, 2025



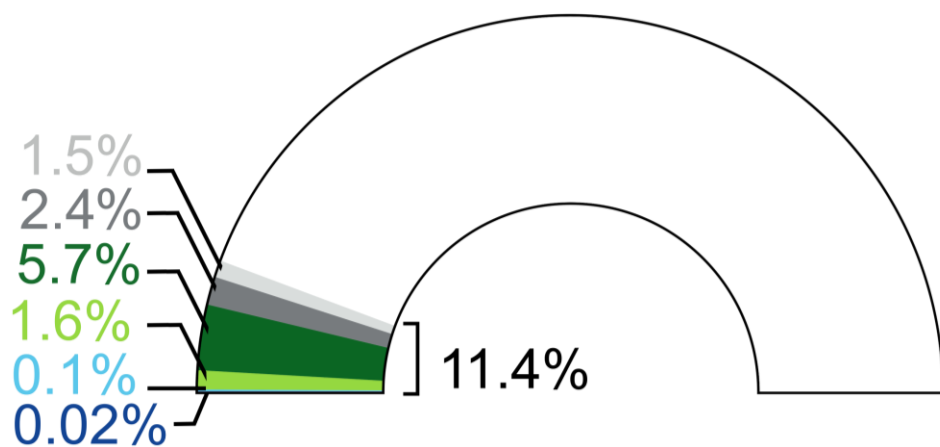
Levels of protection



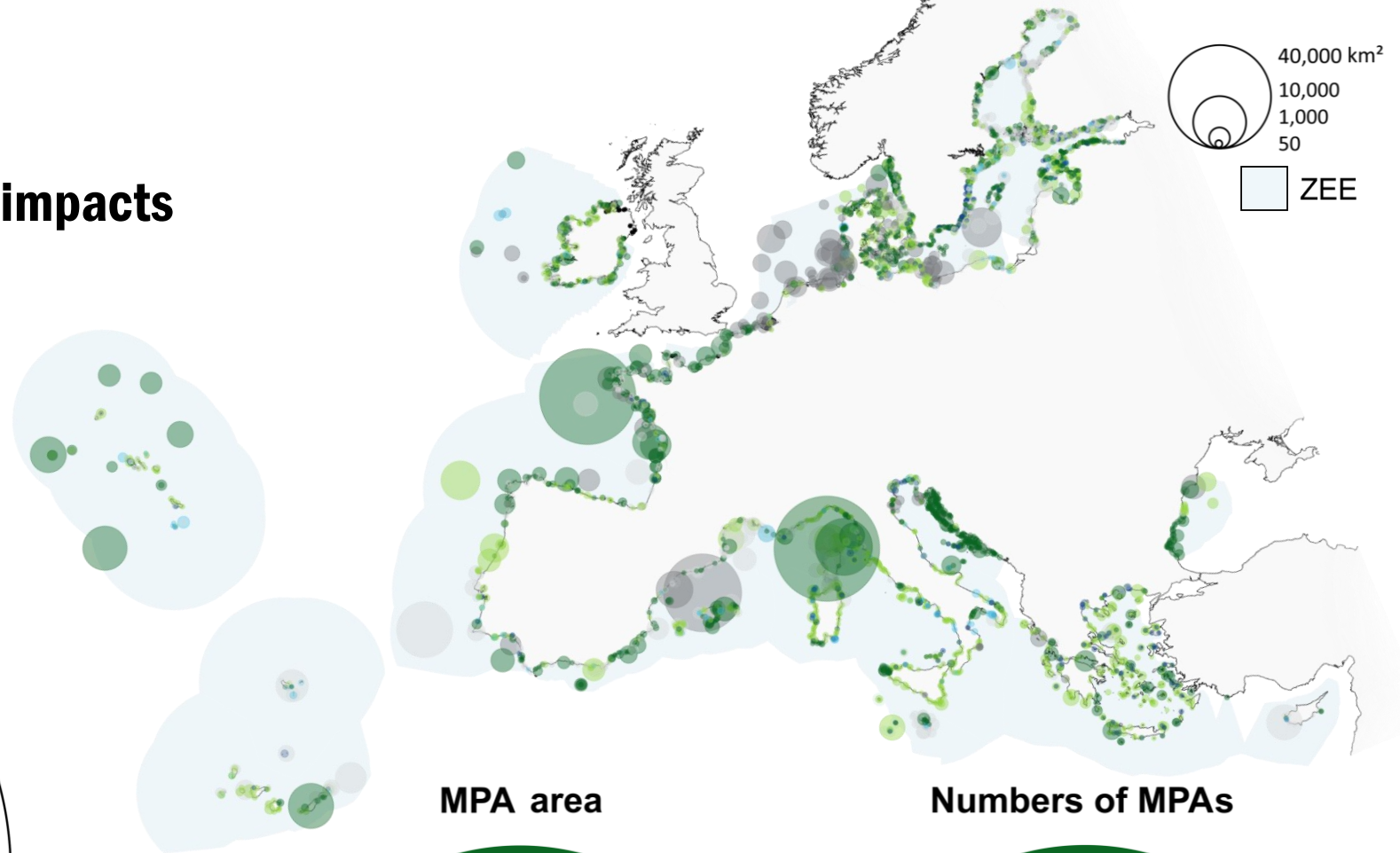
Main results

scenario 1: based on lowest range of impacts

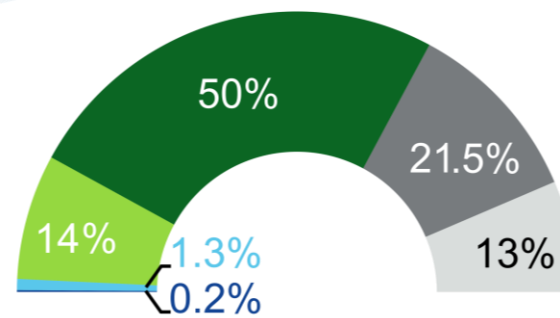
MPA coverage of EU waters



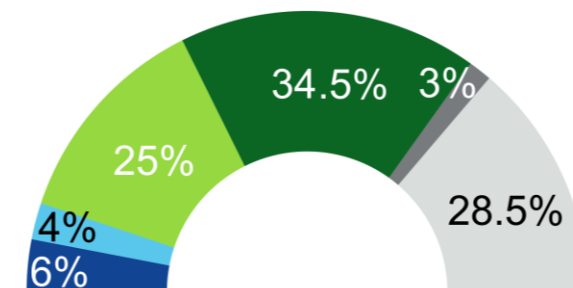
Protection levels



MPA area

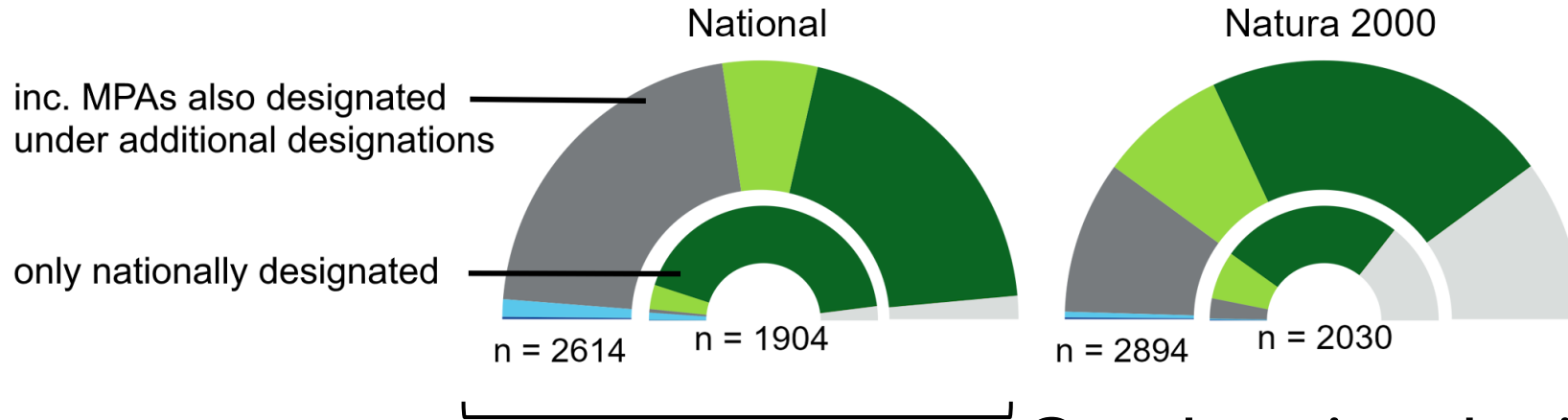


Numbers of MPAs

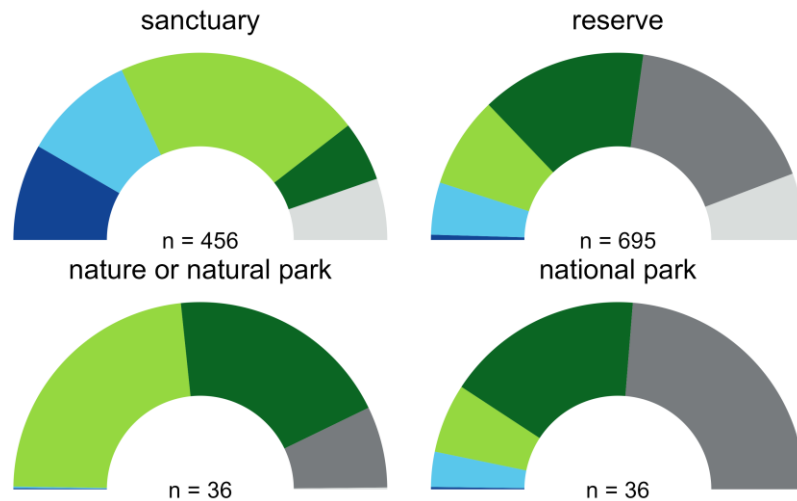


Across all designation types

B. Designations



Overlapping designations ≠ higher protection



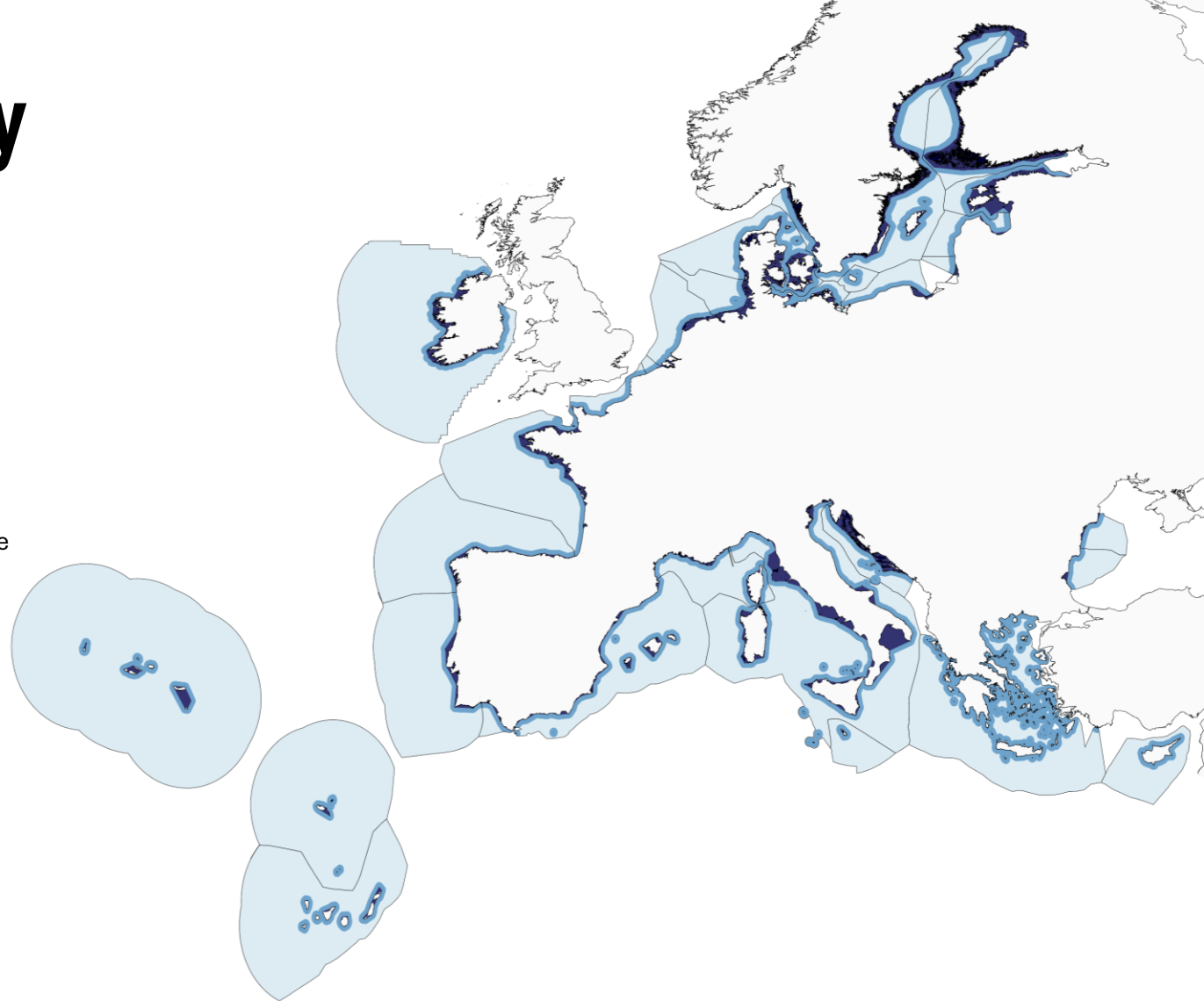
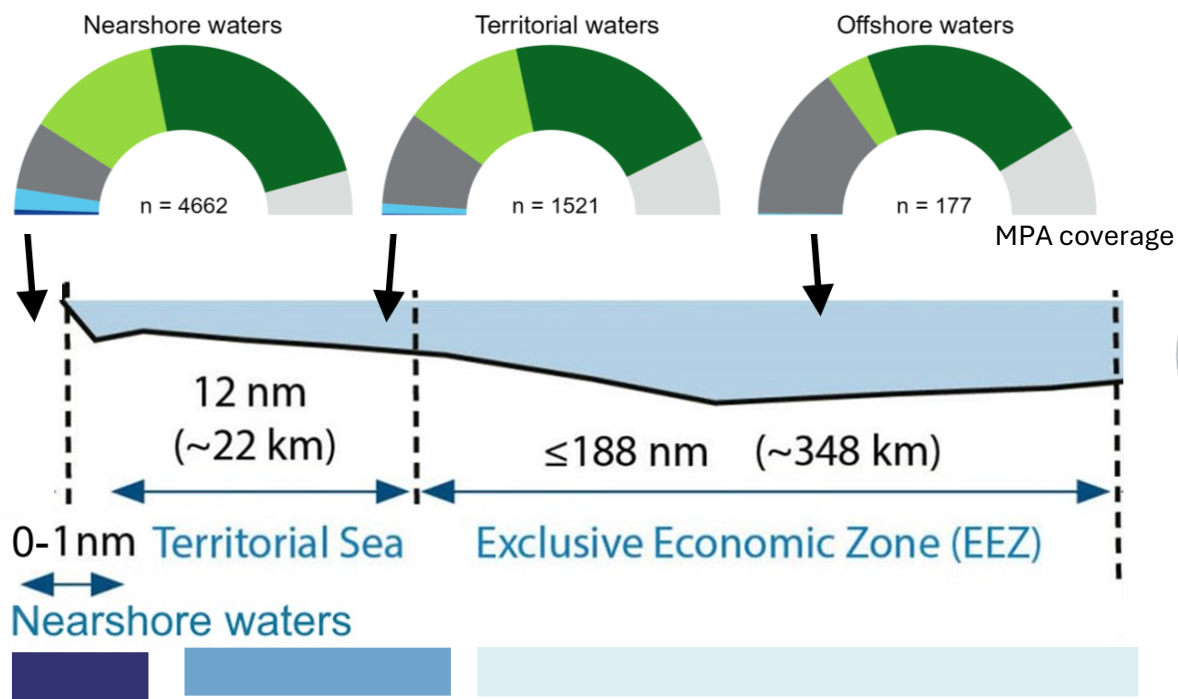
Protection levels



Same for IUCN categories

See also Dudley et al, 2017, Horta e Costa et al. 2016

Depending on sovereignty



Protection levels



Jurisdictions adapted from Mestahallitus 2020;
EEZ from marineregions.org;
for + see EEA healthy seas briefing 2025

High protection in the EU

500 highly or fully
protected MPAs

in national
designations

in nearshore
& territorial
waters

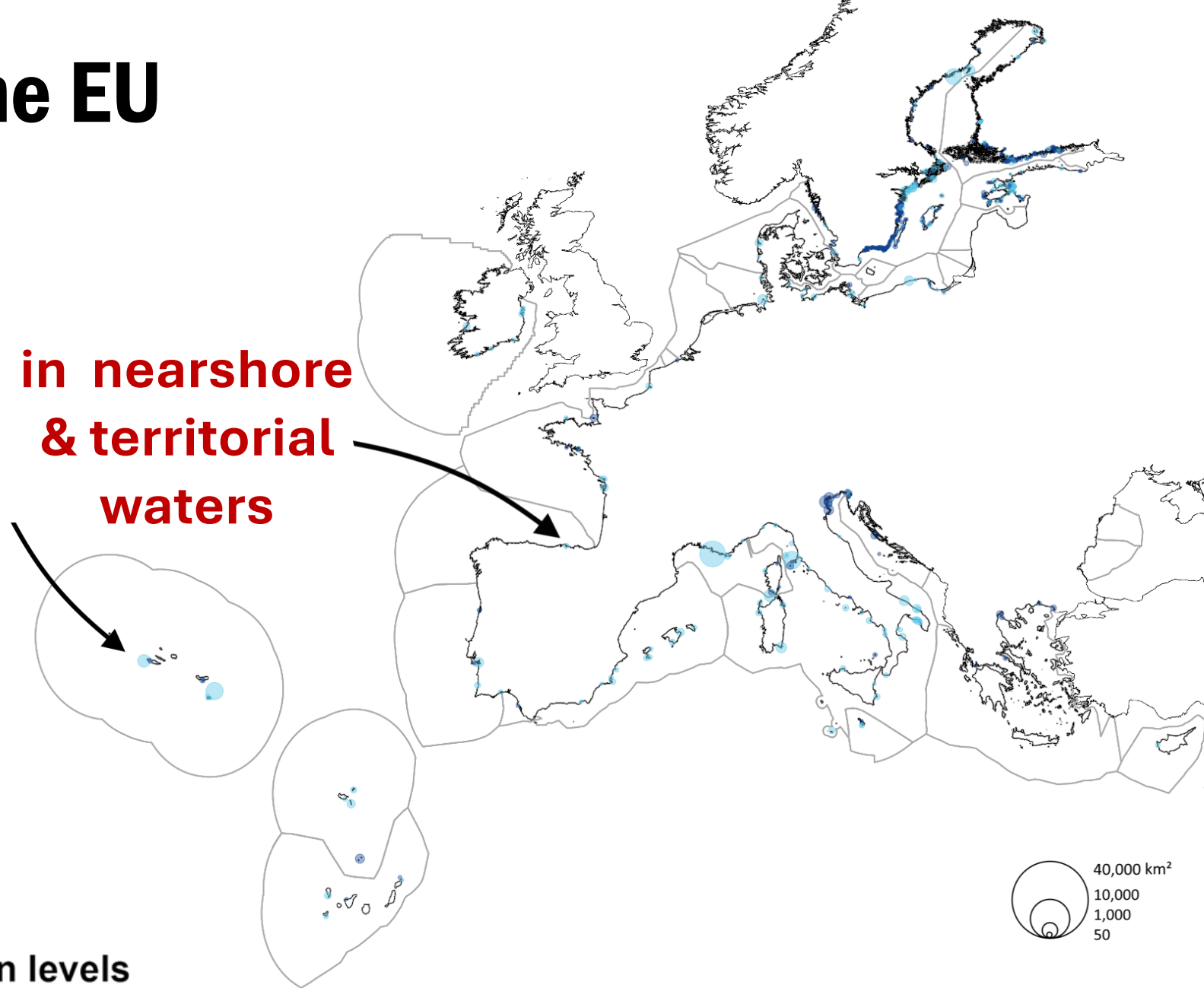
Regional & national results
Aminian-Biquet et al. One
Earth 2024



Publication
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MarHab



Protection levels



Overall, EU MPAs provide minimal protection

- MPAs showed restrictions
- No **legal obligation**: on specific measures & protection levels
- They are **made for this**: not exclusive & for the economy
- **MPAs are more than their regulations**

EU MPAs are failing in reaching their goals

What about now?

The EU biodiversity strategy for 2030:

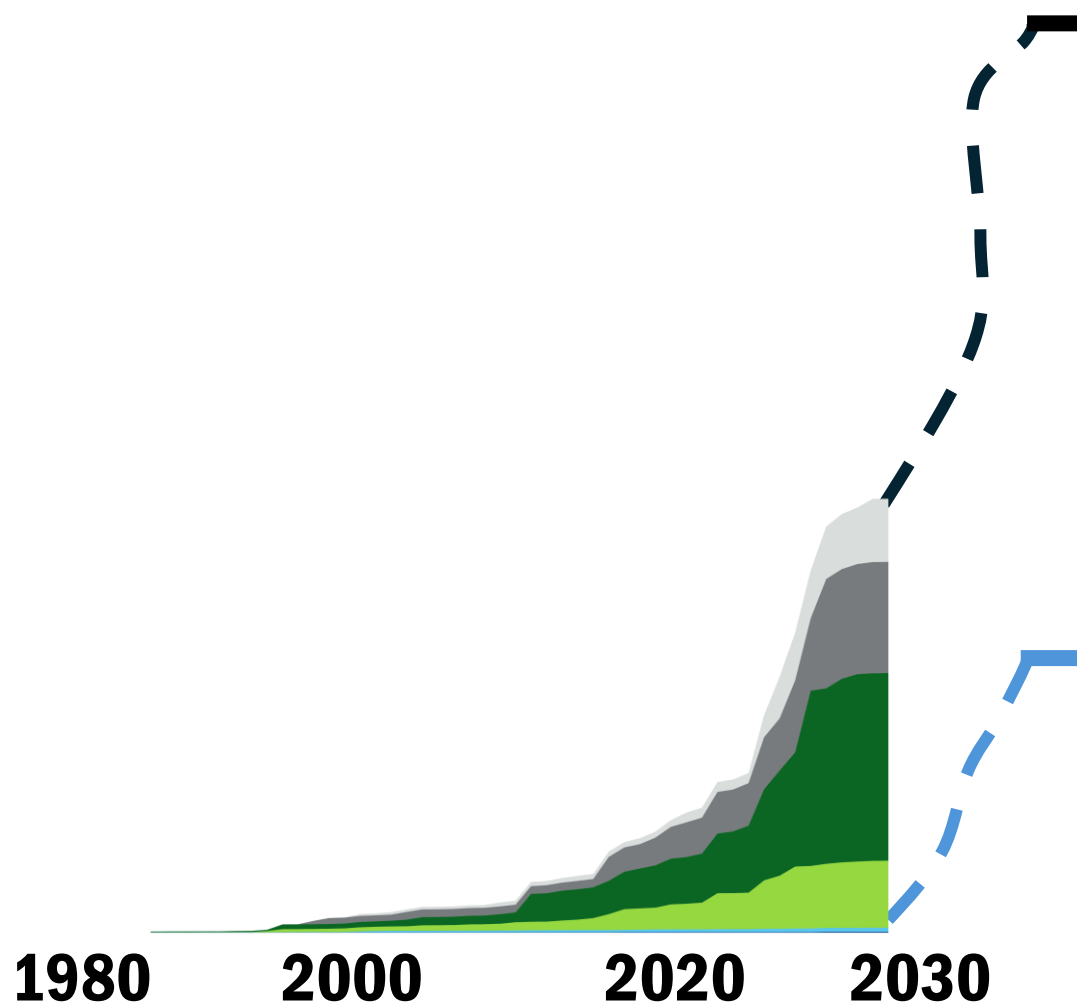
30% MPA by 2030

Clearly defined conservation objectives and measures and are effectively managed + appropriately monitored

10% strict protection

Natural processes are left undisturbed

Directives revision (MSFD, MSPD)
+ restoration regulation



MPA politics in France



- **Systematic vs case-by-case**
- **Backdoor politics:** opaque, unaccountable, and limited participation
- **High engagement** in MPA politics
- Use of **technical dimensions & sciences**
- Clear demand for **governance changes:** what decision process?

Interviews with key stakeholders (2023-2025)
qualitative analyses based on thematic coding

How do Member States implement the target of strict protection?

3 study cases on national implementation (France, Spain, Sweden) +1 regional case (Northern France)

- Strict protection definition & implementation
- Actors involved & strategies
- Influence of socio-historical context on implementation
- Consequences national strategy on local implementation of strict protection

Qualitative research based on interviews anchored in critical political ecology (considering power relations and politicization)

Thank you!

**Thanks to my team, in particular supervisors Juliette Young &
Barbara Horta e Costa**

Thanks to the ProtectedSeas & EMB teams!
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