Assessing the state of marine biodiversity in the Northeast Atlantic

Abigail McQuatters-Gollop, Laurent Guerin, Cristina Vina Herbon, Jose Gonzalez-Irusta, Matthew Holland

and the OSPAR 2017 Intermediate Assessment and OSPAR QSR2023 teams
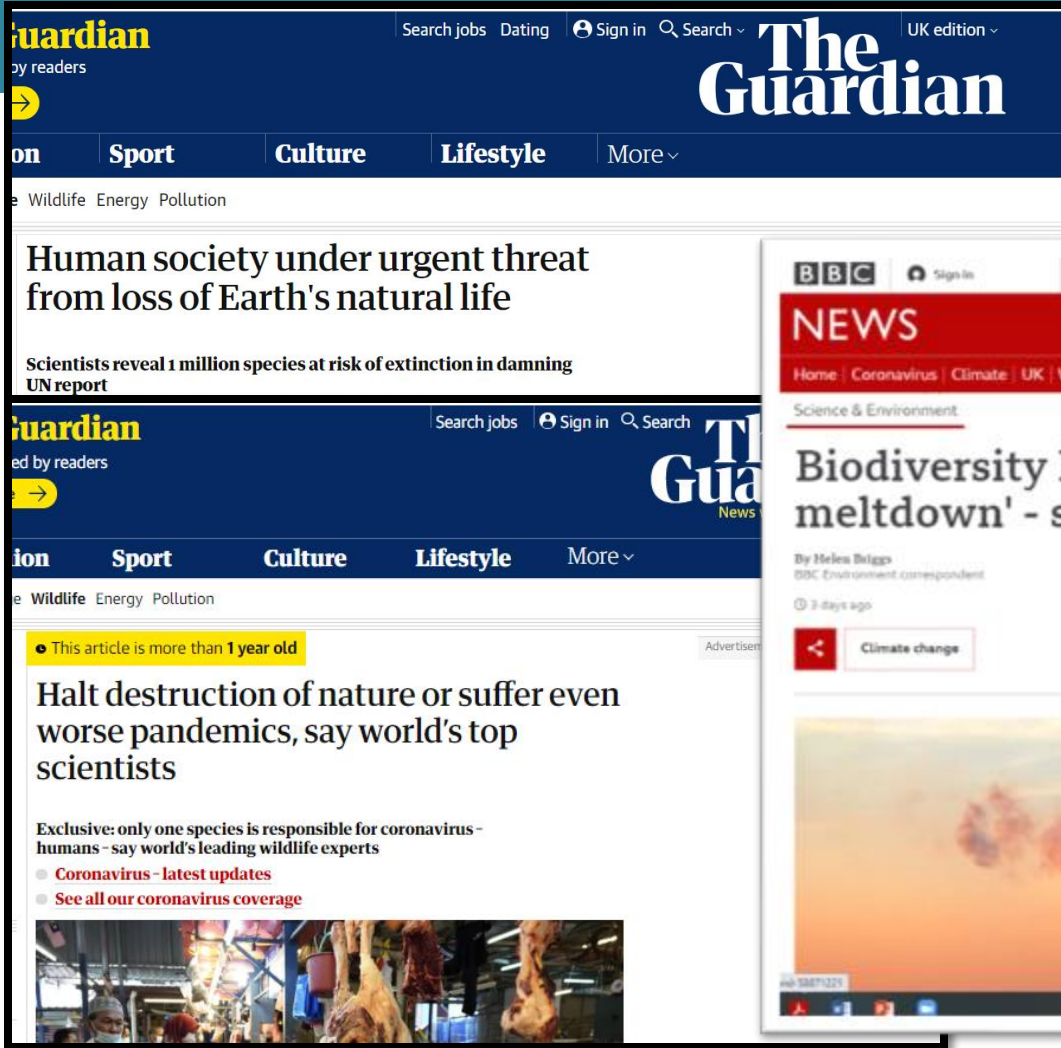
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NEA PANACEA

North East Atlantic project

on biodiversity and eutrophication

assessment integration

and creation of effective measures

EcApRHA an Ecosystem Approach to Regional Habitat Assessments

This project is co-financed by the European Union

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We are in a biodiversity emergency!

The Guardian

Wildlife Energy Pollution

Human society under urgent threat from loss of Earth's natural life

Scientists reveal 1 million species at risk of extinction in damning UN report

The Guardian

Wildlife Energy Pollution

This article is more than 1 year old

Halt destruction of nature or suffer even worse pandemics, say world's top scientists

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Science & Environment

Biodiversity loss risks 'ecological meltdown' - scientists

By Helen Briggs
BBC Environment correspondent

3 days ago

Climate change

ipbes
Science and Policy
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One in four species are at risk of extinction

Species assessed by the IUCN Red List

Amphibians **40%**

Conifers **34%**

Reef corals **33%**

Sharks and rays **31%**

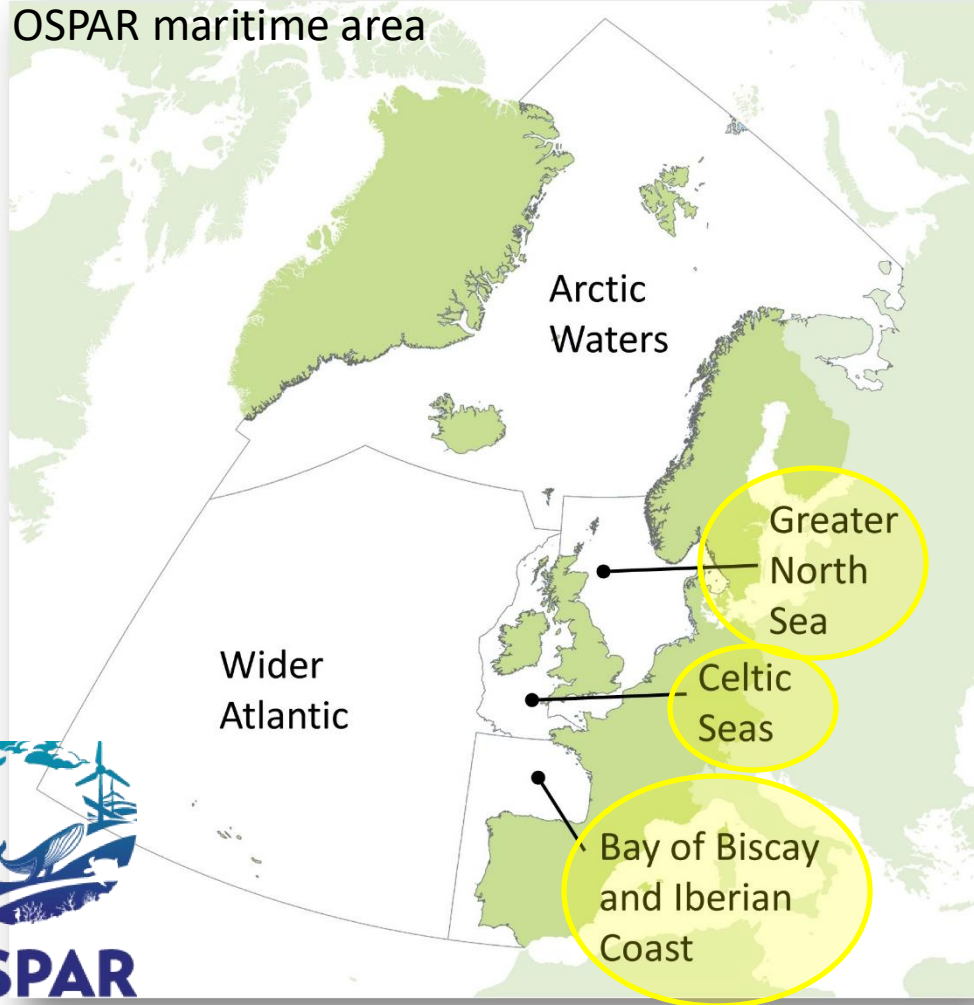Selected crustaceans* **27%**
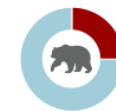
Mammals **25%**

Birds **14%**

*Assessed species include lobsters, freshwater crabs, freshwater crayfishes and freshwater shrimps

Source: IUCN Red List of Threatened Species

BBC

Biodiversity assessment in NE Atlantic – Marine Strategy Framework Directive

OSPAR maritime area

Arctic Waters

Wider Atlantic

Greater North Sea

Celtic Seas

Bay of Biscay and Iberian Coast

OSPAR

- **Objective: to achieve Good Environmental Status (GES) of Europe's seas**
- **Indicator approach to assessing environmental targets**
- **OSPAR leading biodiversity assessment process for Northeast Atlantic**
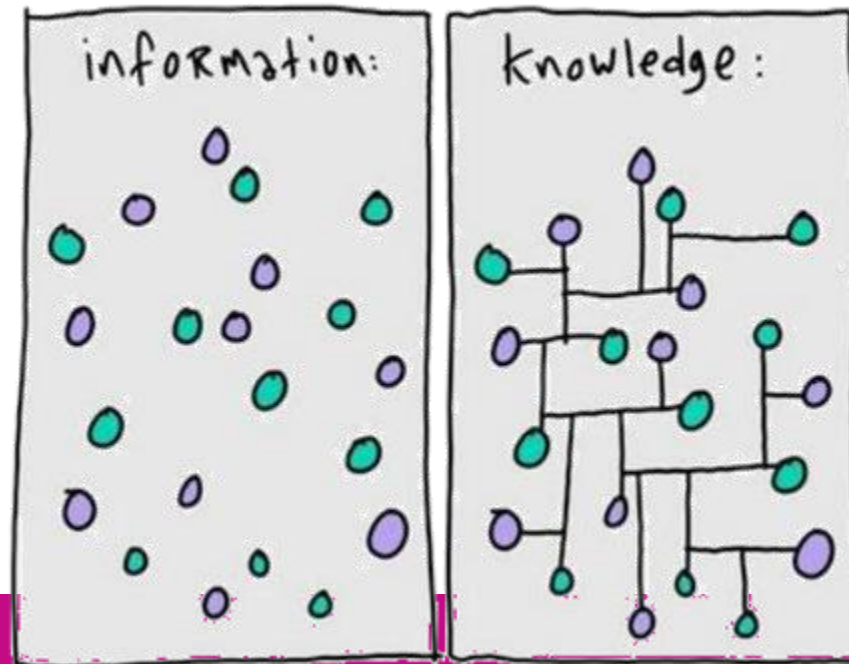
OSPAR Assessment 2017

- 2017 Intermediate Assessment (IA2017) -> first ever biodiversity assessment on this scale!

- 200 scientists and 40 policy-makers involved

- 52 biodiversity indicator assessments

IA2017 – GES or not?

- Lots of indicators but most indicators were not assessed for GES - biodiversity change was merely described

Our aim

- To assess the state of biodiversity across the 52 IA2017 indicators
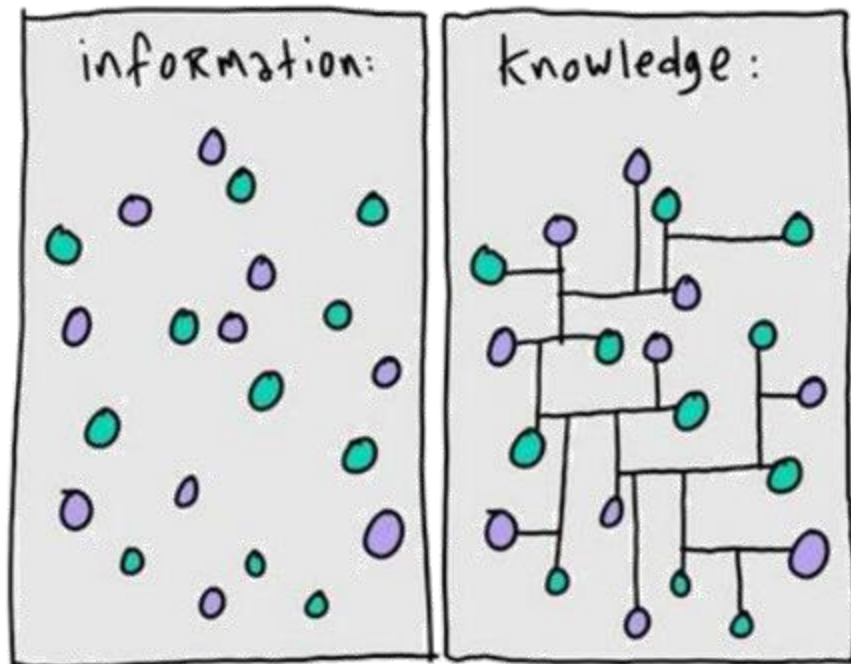
Biodiversity status?

Spatial distribution of indicators

Ecosystem component	Greater North Sea	Celtic Seas	Bay of Biscay
Pelagic habitats	3	2	3
Benthic habitats	3	2	2
Marine birds	3	3	0
Marine mammals	6	6	3
Food webs	2	2	2
Non-indigenous species	1	1	1
Fish	3	3	1

- Not all indicators assessed/applicable in all regions due to political or ecological reasons

Scan me for the paper!

McQuatters-Gollop, A., Guérin, L., Vina-Herbon, C., Gonzalez_Irusta, J., et al. (2022) **Assessing the state of marine biodiversity in the Northeast Atlantic.** Ecological Indicators. https://doi.org/10.1016/j.ecolind.2022.109148
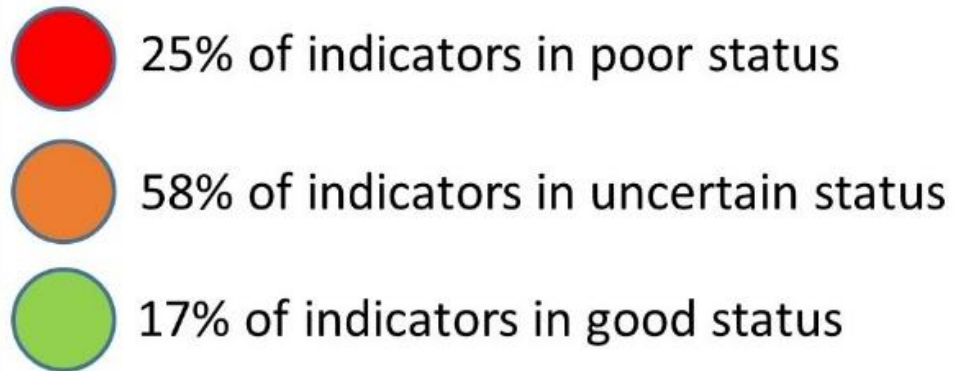
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Determining biodiversity status

|	
Poor	Indicator value is below assessment threshold, **or** change in indicator represents a declining state, **or** indicator change is linked to increasing effect of anthropogenic pressures (including climate change), **or** indicator shows no change but state is considered unsatisfactory
Uncertain	No assessment threshold **and/or** unclear if change represents declining or improving state, **or** indicator shows no change but uncertain if state represented is satisfactory
Good	Indicator value is above assessment threshold, **or** indicator represents improving state, **or** indicator shows no change but state is satisfactory
Unassessed	Indicator was not assessed in a region due to lack of data, lack of expert resource, or lack of policy support.

- Semi-quantitative method
- Thresholds used where available (i.e. some birds, some fish)
- Expert opinion/weight of evidence used in absence of thresholds

Northeast Atlantic biodiversity is not in a good state

- 25% of indicators in poor status
- 58% of indicators in uncertain status
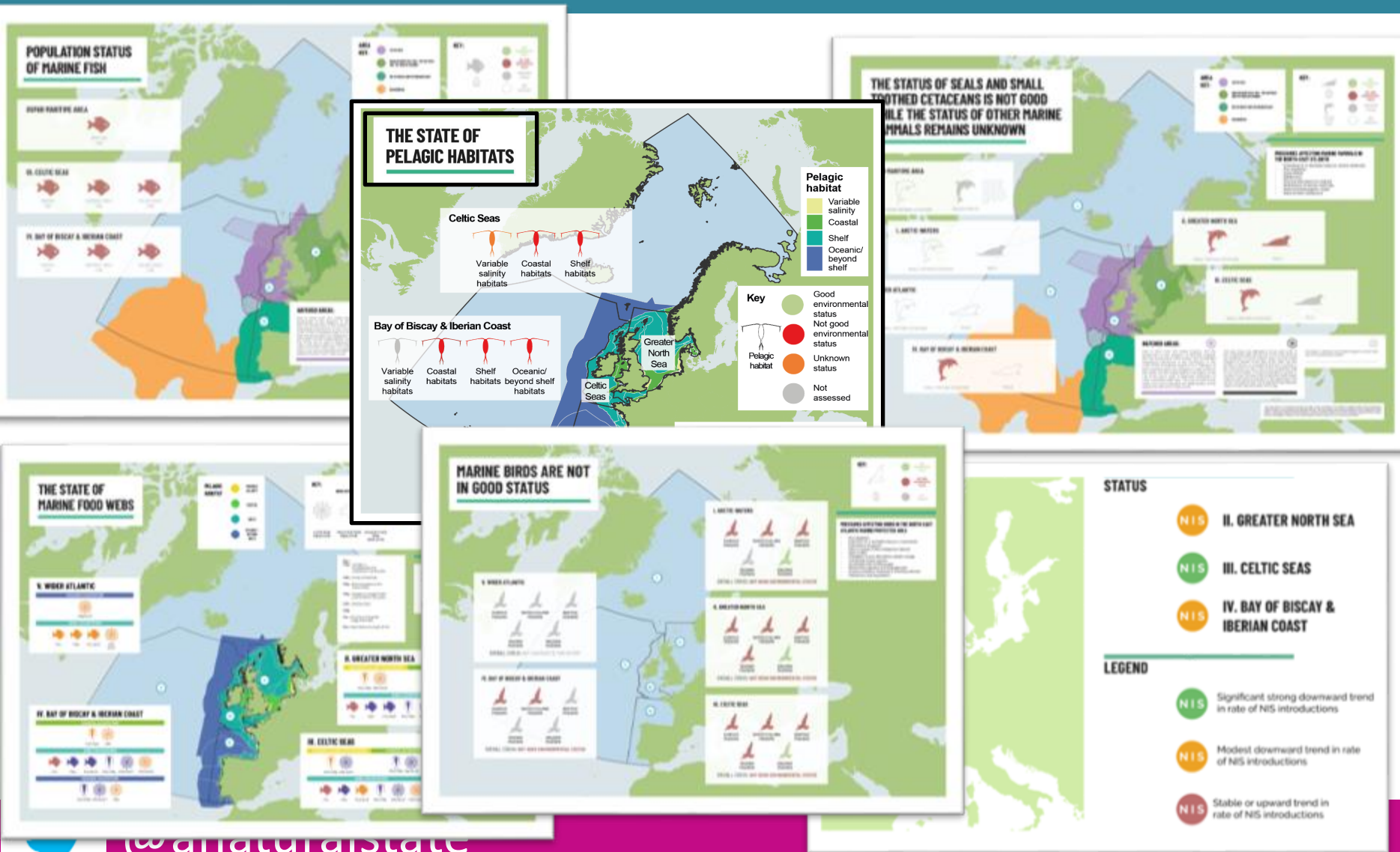- 17% of indicators in good status

- Good status: marine mammals (seals) in CS and GNS, some fish, some birds
- Poor status: due to habitat loss, fishing, climate change
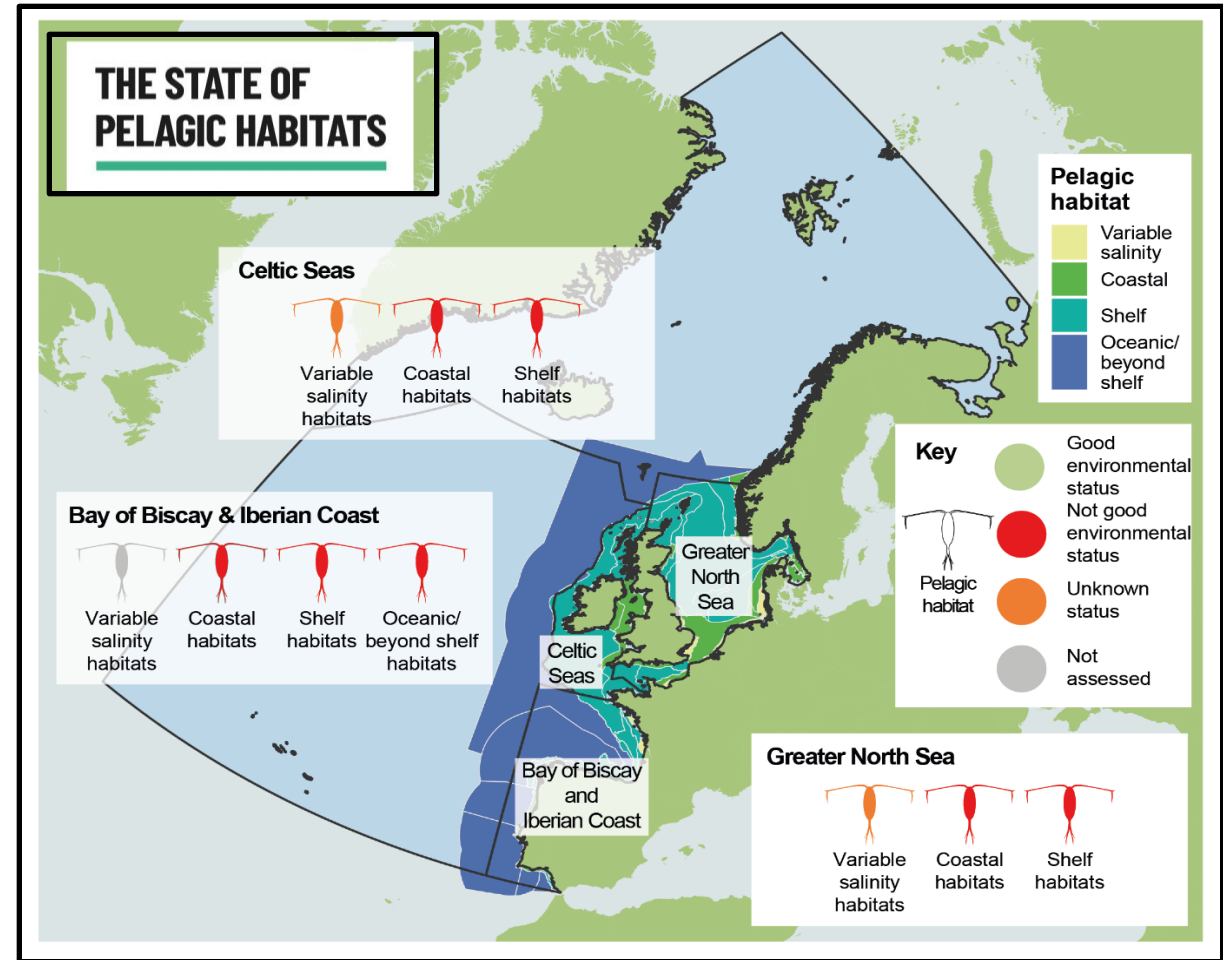- Uncertain status: due to data gaps, novelty of work, resource limitations
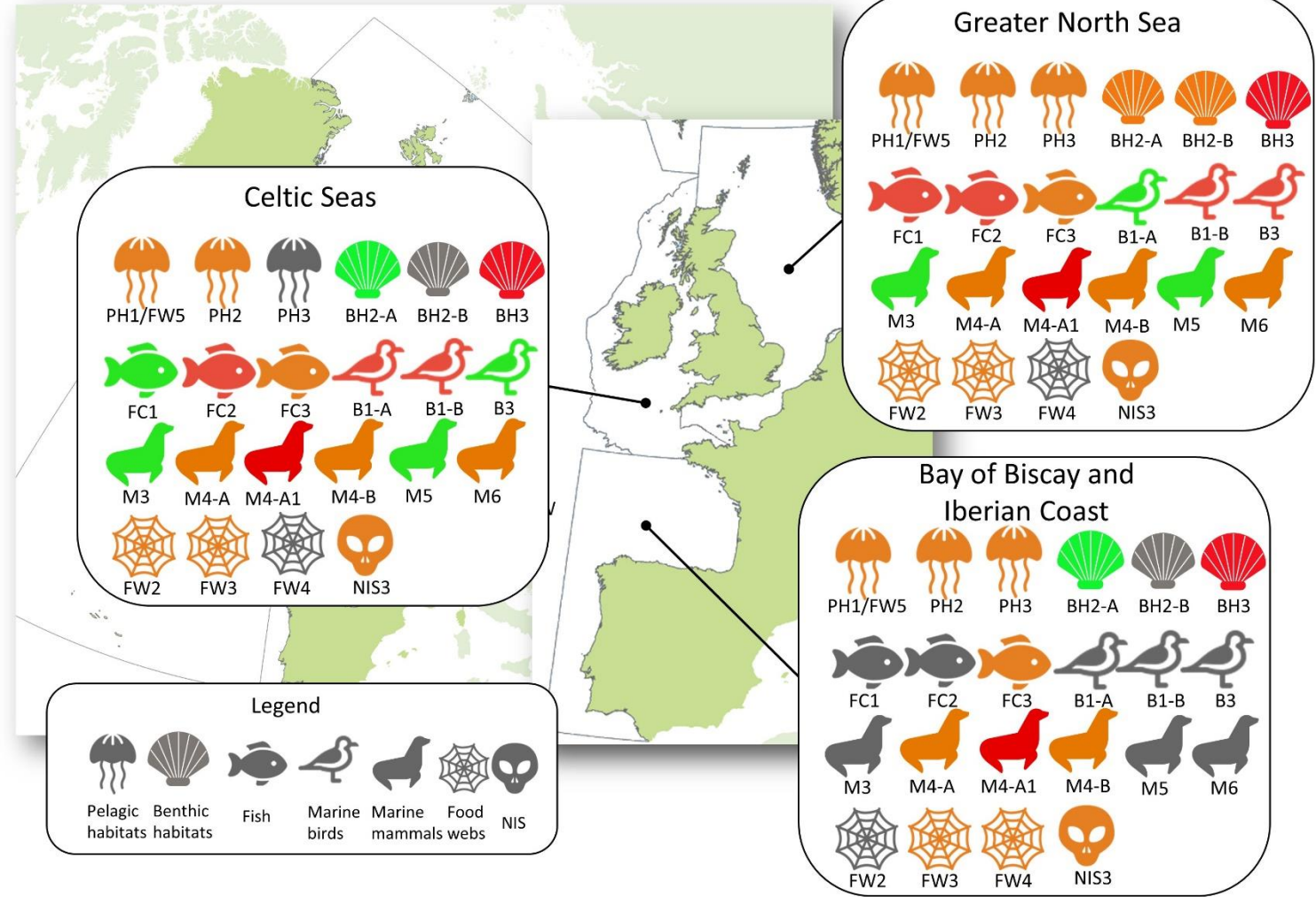
Method applied to OSPAR 2023 Assessment

- **Reassess indicators every 6 years – 2023 Assessment**
- **This time we determined GES for most indicators!**

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Conclusions

- We are getting better at assessment!

- Better at pressure-state relationships, integration

- We can show links to pressures and ecosystem services in some cases

- But the state of Northeast Atlantic biodiversity is really not good ☹

THE STATE OF PELAGIC HABITATS

Celtic Seas
- Variable salinity habitats
- Coastal habitats
- Shelf habitats

Bay of Biscay & Iberian Coast
- Variable salinity habitats
- Coastal habitats
- Shelf habitats
- Oceanic/beyond shelf habitats

Greater North Sea
- Variable salinity habitats
- Coastal habitats
- Shelf habitats

Pelagic habitat
- Variable salinity
- Coastal
- Shelf
- Oceanic/beyond shelf

Key
- Good environmental status
- Not good environmental status
- Pelagic habitat
- Unknown status
- Not assessed

Thank you!　　ありがとうございます

Scan me for the paper!

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