



HAL
open science

Assessing the state of marine (benthic) biodiversity in the Northeast Atlantic

Laurent Guérin, Abigail McQuatters-Gollop

► **To cite this version:**

Laurent Guérin, Abigail McQuatters-Gollop. Assessing the state of marine (benthic) biodiversity in the Northeast Atlantic. 13th International Temperate Reefs Symposium, Jan 2023, Hobart, Tasmania, Australia. 10.1016/j.marpol.2018.01.003 . mnhn-04148845

HAL Id: mnhn-04148845

<https://mnhn.hal.science/mnhn-04148845>

Submitted on 3 Jul 2023

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Contents lists available at ScienceDirect

Ecological Indicators

journal homepage: www.elsevier.com/locate/ecolind

Scan me for the paper



Assessing the state of marine (benthic) biodiversity in the Northeast Atlantic

* laurent.guerin@mnhn.fr



@DrLaurentGuerin

<https://www.researchgate.net/profile/Laurent-Guerin-3>
<https://orcid.org/0000-0002-7020-5812>
<https://www.patrimoine-naturel.fr/annuaire/laurent-guerin-6118>

A. McQuatters-Gollop^{a,*}, L. Guérin^{b,c}, N.L. Arroyo^d, A. Aubert^{c,e}, L.F. Artigas^e, J. Bedford^{a,f}, E. Corcoran^{g,h}, V. Dierschkeⁱ, S.A.M. Elliott^{b,j}, S.C.V. Geelhoed^k, A. Gilles^l, J.M. González-Irusta^d, J. Haelters^m, M. Johansenⁿ, F. Le Loc'h^o, C.P. Lynam^p, N. Niquil^q, B. Meakins^r, I. Mitchell^r, B. Padegimas^g, R. Pesch^{s,t}, I. Preciado^d, I. Rombouts^{c,e}, G. Safi^q, P. Schmitt^s, U. Schückel^u, A. Serrano^d, P. Stebbing^v, A. De la Torre^d, C. Vina-Herbon^r

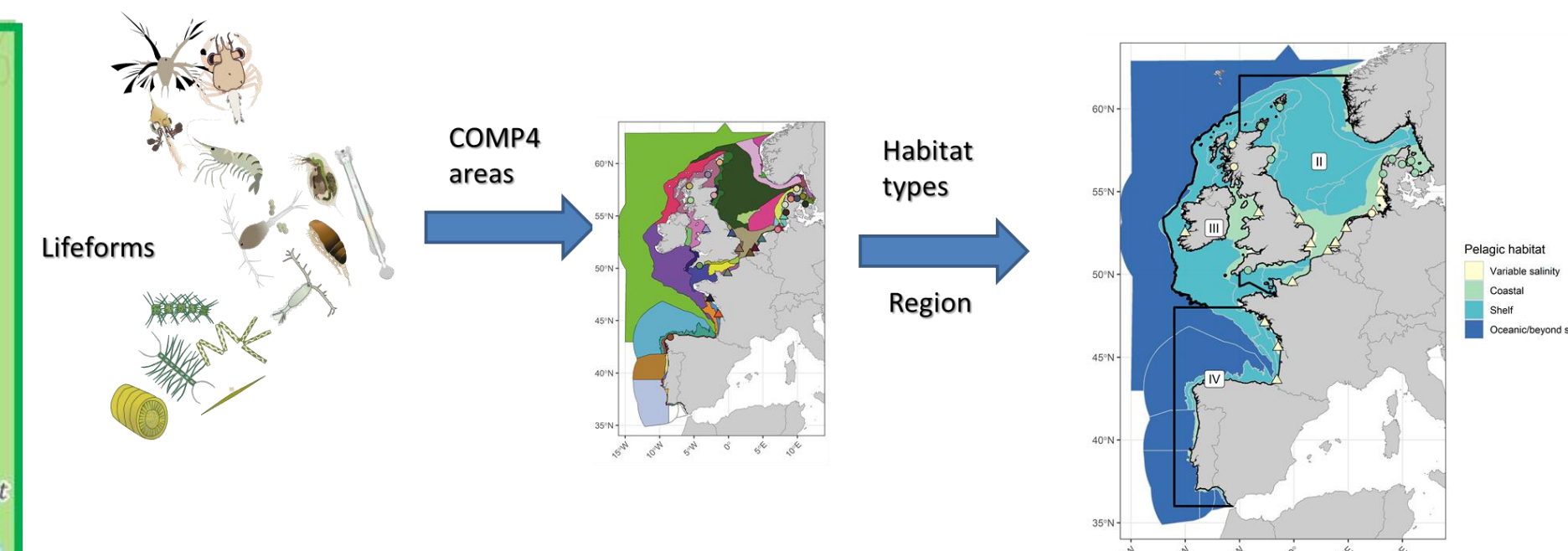
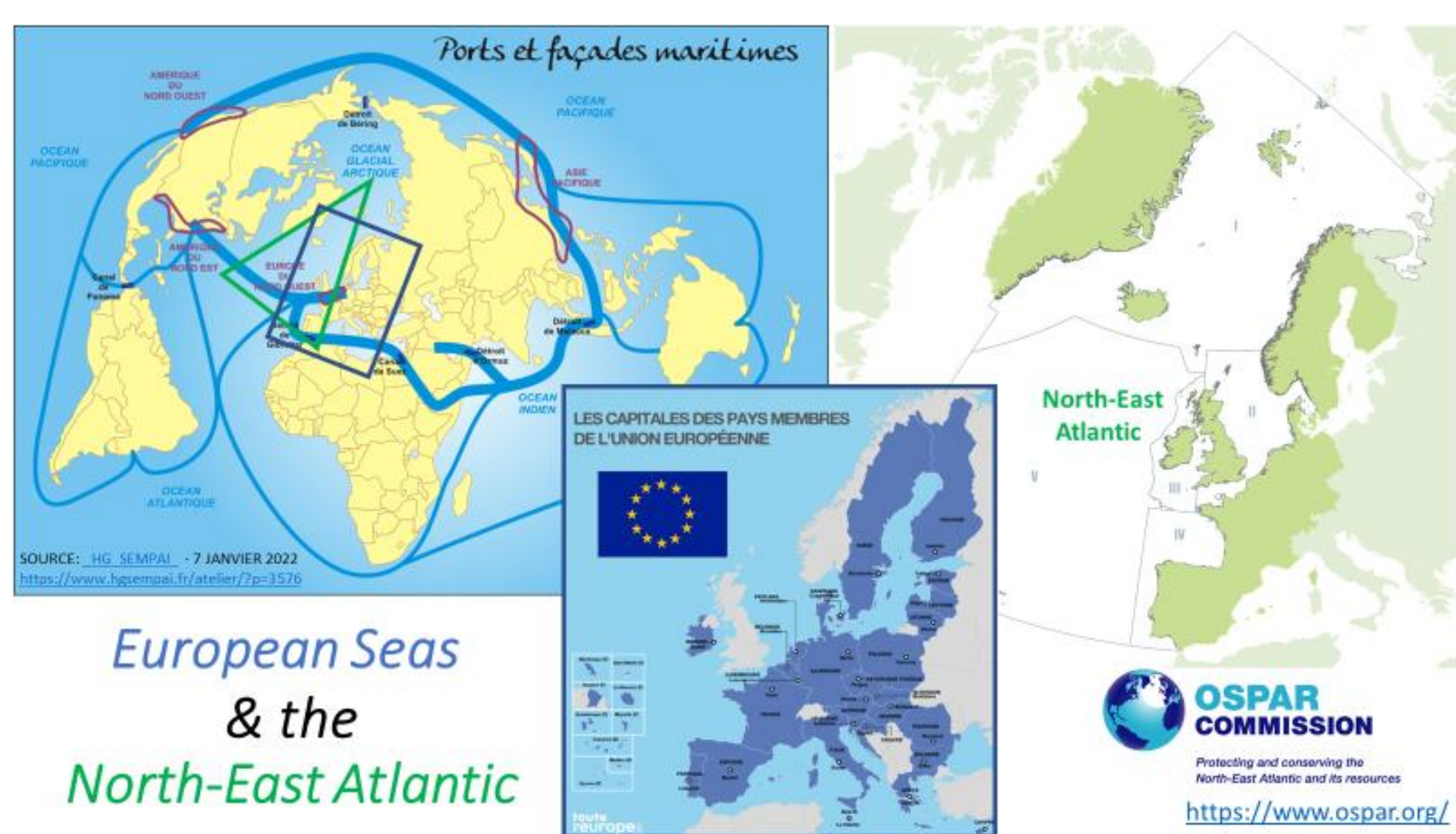
^a Marine Conservation Research Group, School of Biological and Marine Science, University of Plymouth, Drake Circus, Plymouth PL4 8AA, United Kingdom
^b Muséum National d'Histoire Naturelle, Service des Stations Marines. Station Marine de Dinard. 38 rue du Port Blanc, Dinard, Brittany 35800, France
^c Patrimoine Naturel Joint Unit (OFB, MNHN, CNRS), Station Marine de Dinard, 38 Rue du Port Blanc, Dinard, Brittany 35800, France
^d Instituto Español de Oceanografía (CNIEO-CSIC), Centro Oceanográfico de Santander, Promontorio San Martín, s/n, 39080 Santander, Spain
^e Laboratoire d'Océanologie et de Géosciences (LOG), UMR 8187 CNRS, Université du Littoral Côte d'Opale, Université de Lille, 62930 Wimereux, France
^f UN Environment Programme World Conservation Monitoring Centre, 219 Huntingdon Road, Cambridge CB3 0DL, United Kingdom



See some other related aspects in the ITRS 2023 talk on Monday 09 January (11:15) by Guérin, Lizińska and Schmitt, Long term series & broad spatial scales session

Assessment scales and methods

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



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.



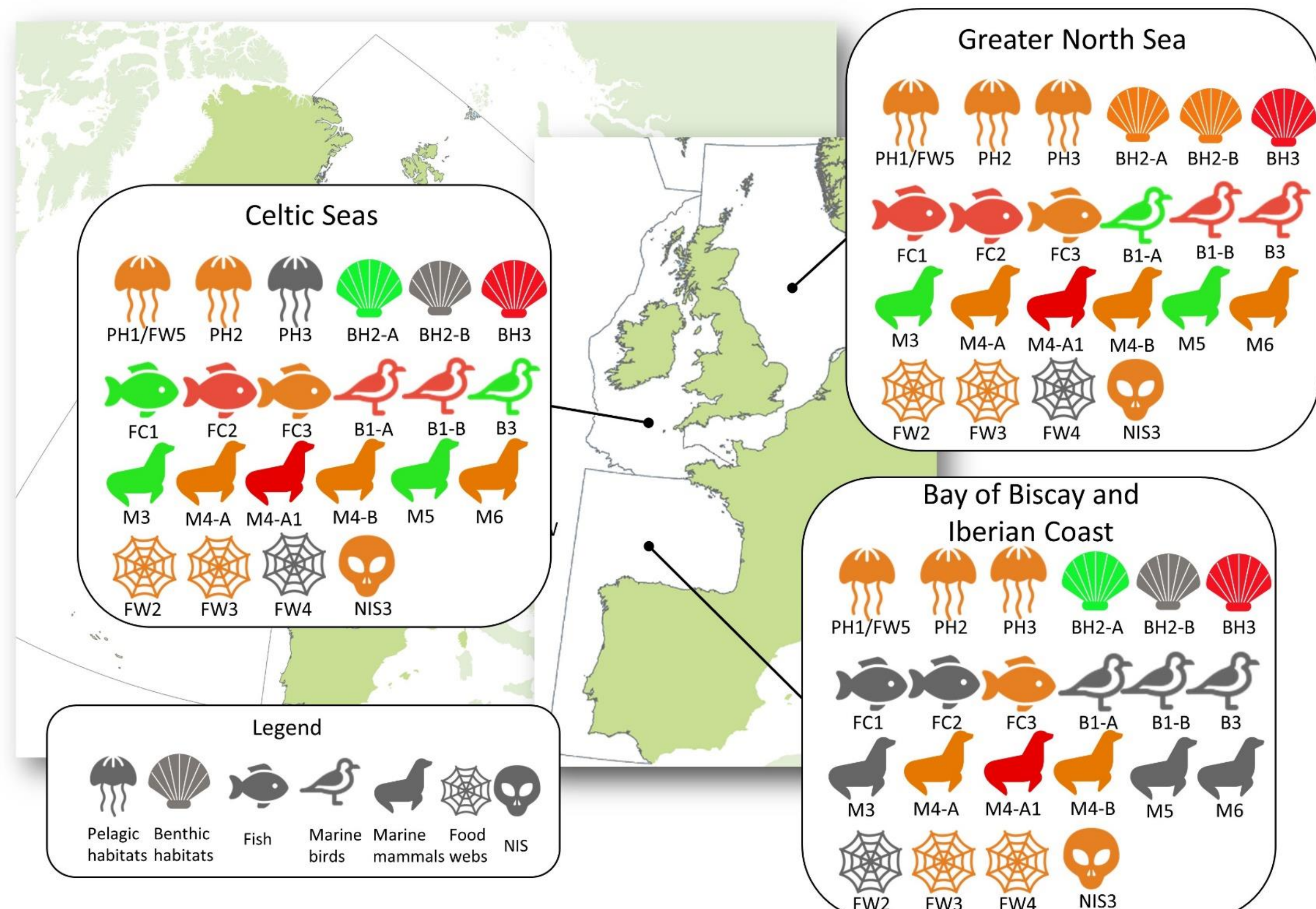
Main results

The status of Northeast Atlantic marine biodiversity indicators varies between indicators, ecosystem components, and OSPAR regions. Indicator short codes are given – full indicator names and documents are detailed in McQuatters-Gollop et al (2022). Icons in red represent poor status, orange represent uncertain status, and green represent good status. Some indicators were not assessed in some regions (grey) due to lack of data, lack of expert resource, or lack of policy support. The Greater North Sea region had the most assessed indicators, and the Bay of Biscay and Iberian Coast the fewest. The Celtic Seas region had the most indicators categorised as in good status, but most of the assessed biodiversity indicators are uncertain or poor for any of the OSPAR regions.

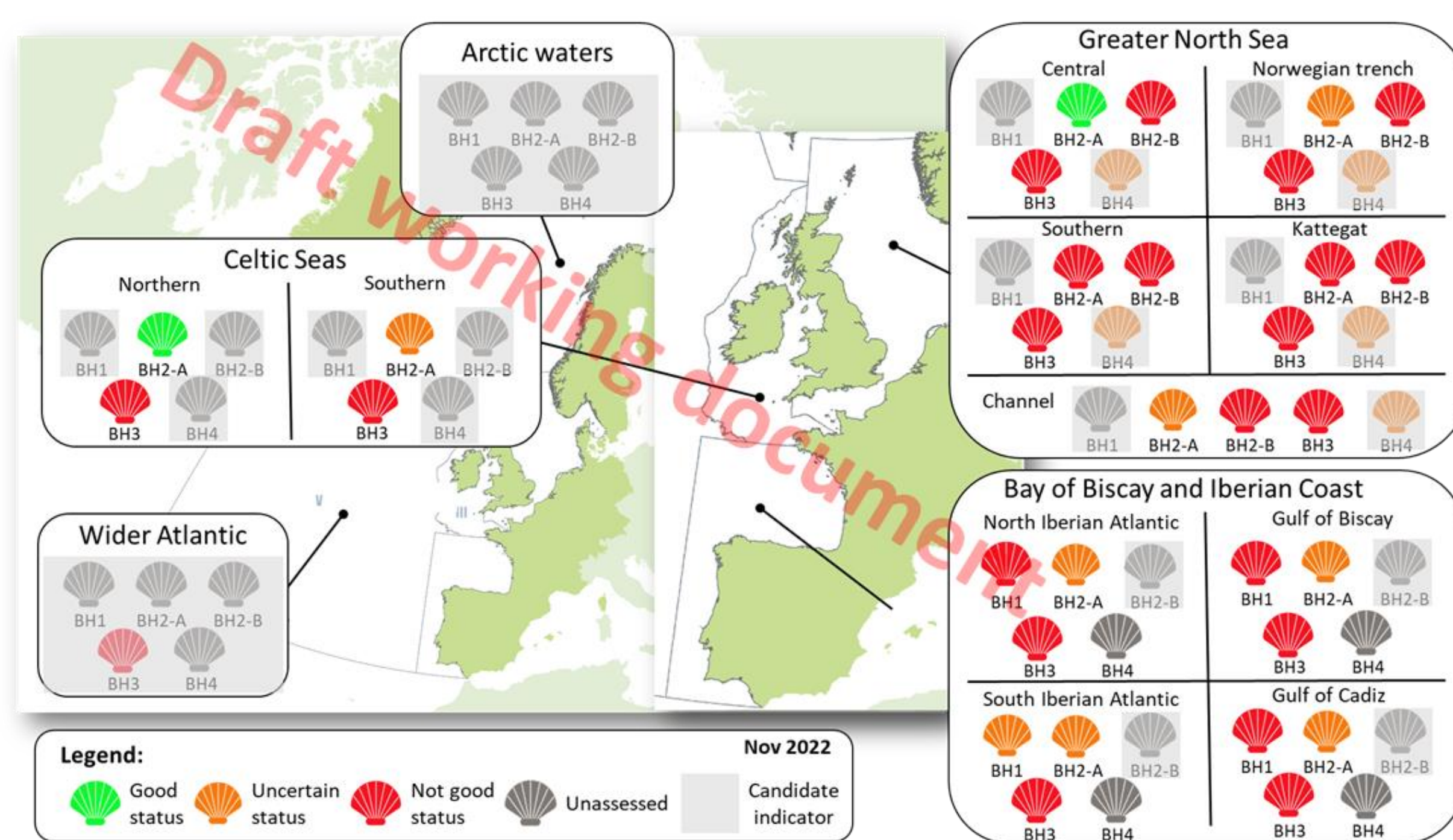
PH = Pelagic Habitats; BH = Benthic Habitats; FC = Fish & Cephalopods; B = Seabirds; M = Marine Mammals; FW = Food Webs; NIS = Non Indigenous Species

OSPAR 2017 assessment

<https://oap.ospar.org/en/>



2023 (draft) assessment - benthic habitats

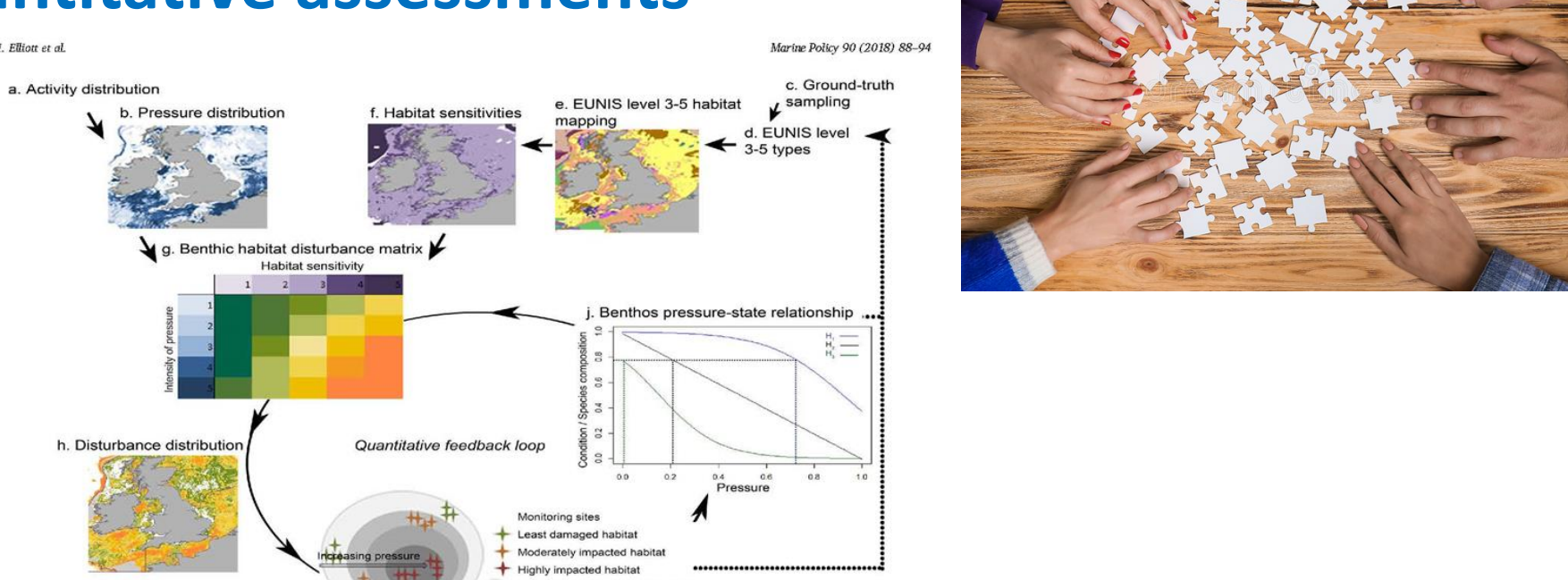


Science perspectives

Towards more integrated quantitative assessments

Overarching conceptual approach for an integrated assessment of benthic habitat indicators at a sub-regional scale, to highlight the feedback of information gathered across indicator assessment and to provide increased confidence in benthic indicator assessment. (Elliott et al, 2018)

<https://doi.org/10.1016/j.marpol.2018.01.003>



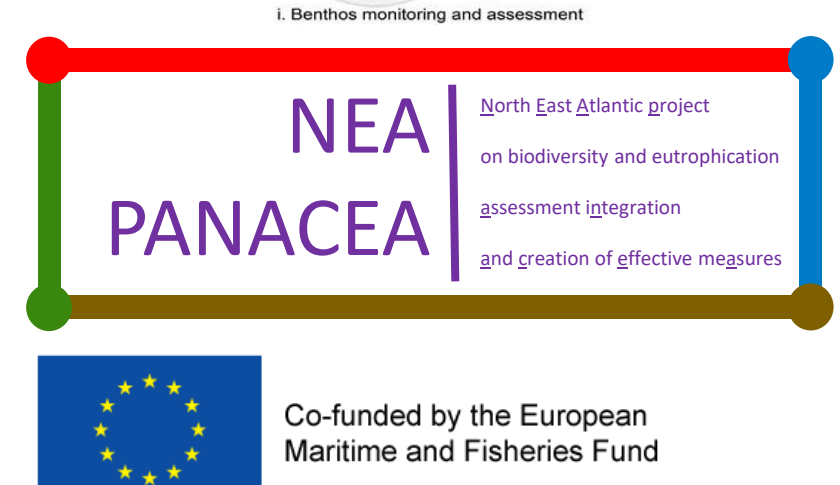
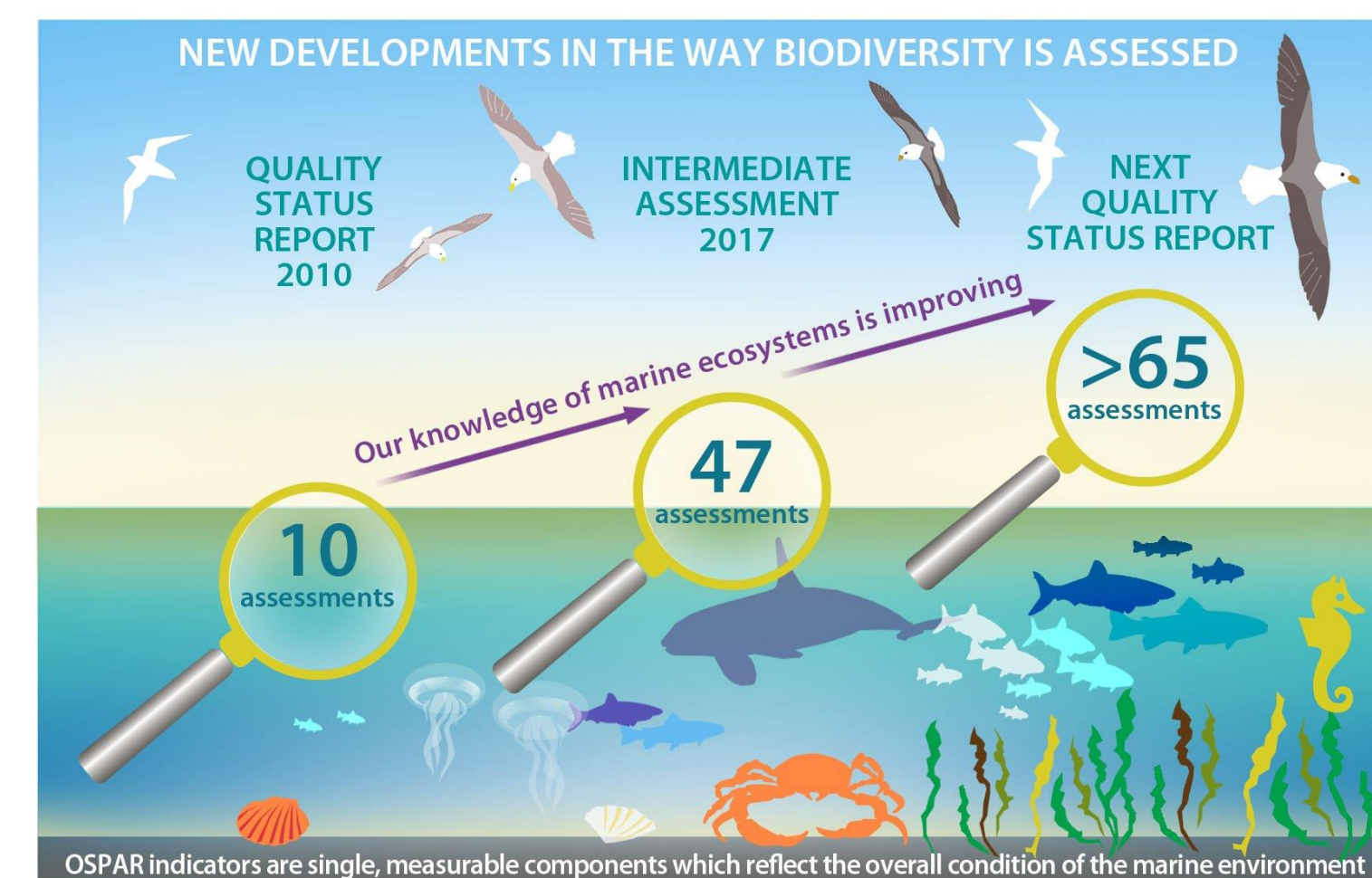
Policy perspectives

OSPAR Quality Status Report 2023

More data + more indicators = better evidence

Huge advances in knowledge since IA2017

Actually classing indicators as in GES or not is a big and still challenging science-policy step!



Coming soon (2023): future publications of these collective works & processes

• **OSPAR 2023 Quality Status Report** (including Benthic Habitat assessment)
<https://oap.ospar.org/en/>

• **Science Journal articles:** Guérin et al, in prep (North-East Atlantic's benthic and biodiversity assessments & Science-policy processes)



<https://crisisrelief.un.org/ukraine>