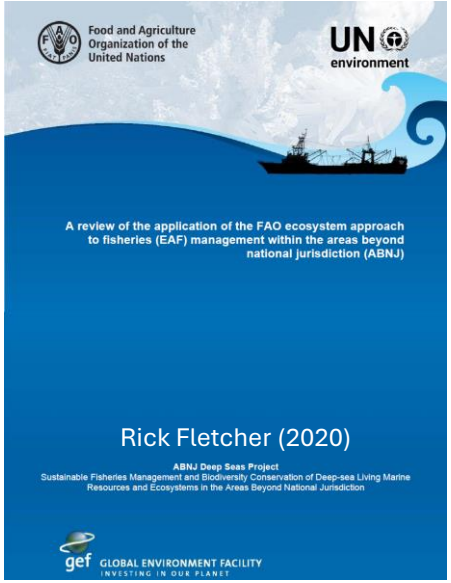
EAFM and biodiversity conservation

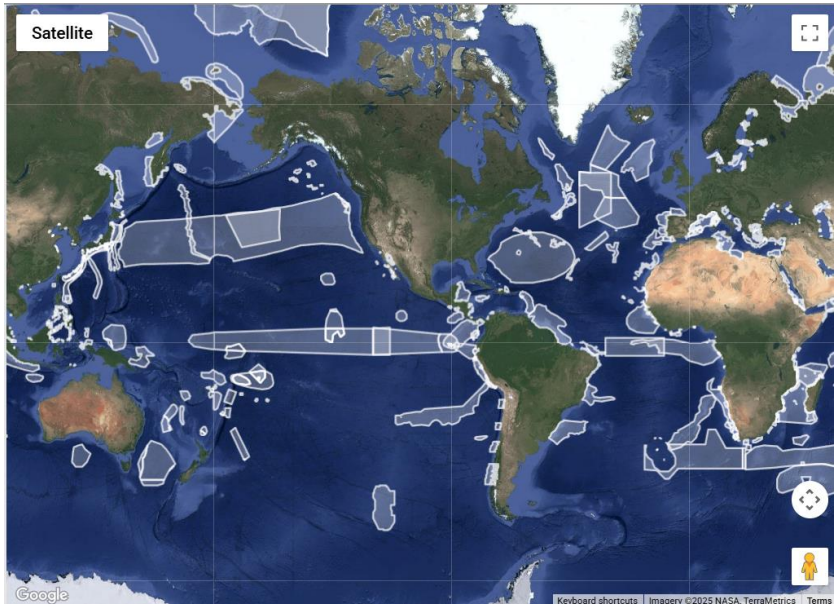
EAFM measures in ds-RFMO: a summary (and the importance of maps)

Tony Thompson
Deep-sea Fisheries Project, FAO



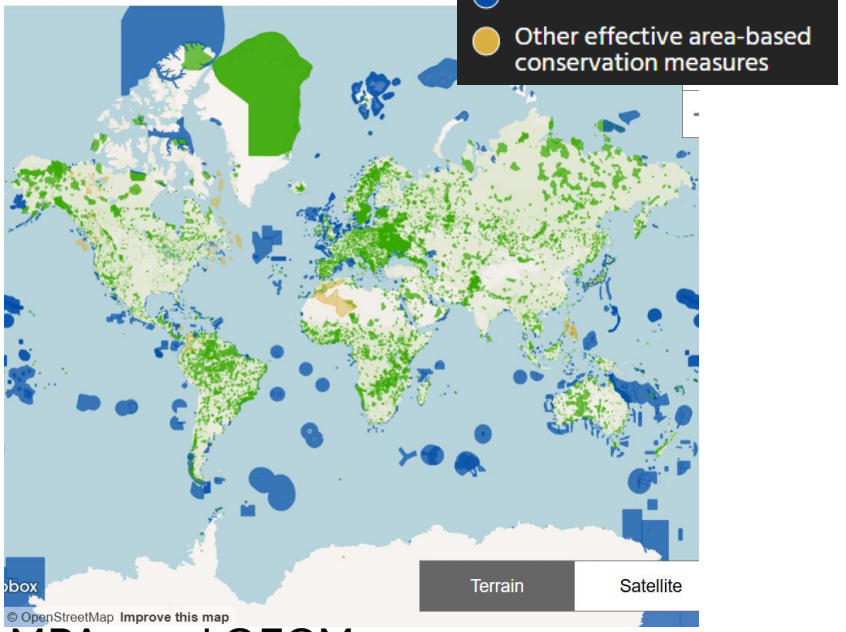
Largely based on above

Biodiversity maps with boundaries



CBD EBSA map https://www.cbd.int/ebsa/

No management

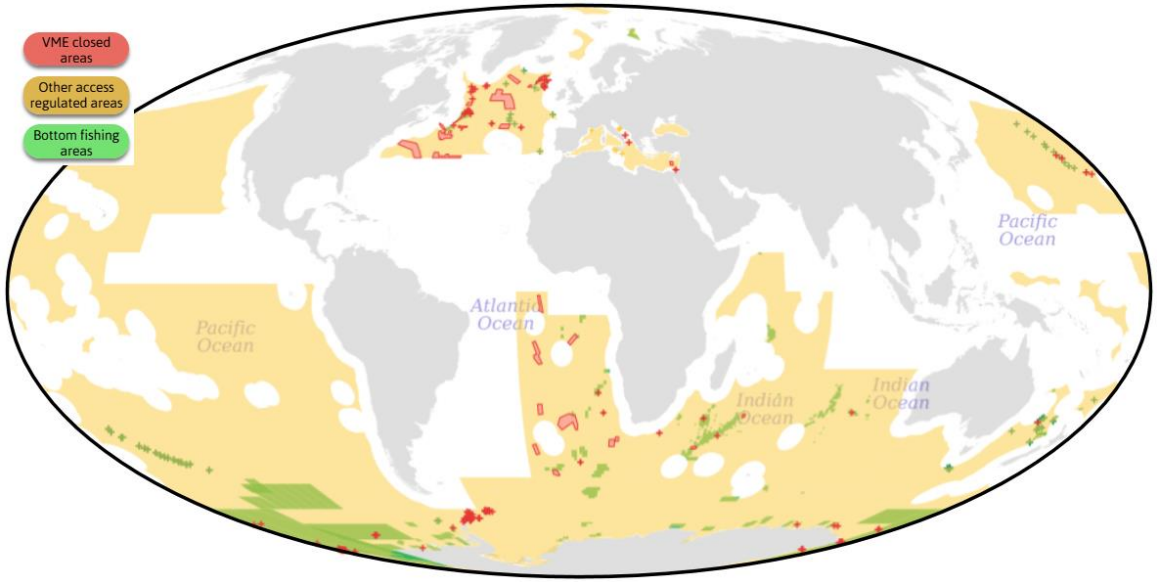


MPAs and OECMs https://www.protectedplanet.net/

Management for biodiversity protection

Lots of people look at these maps and believe this is ocean management

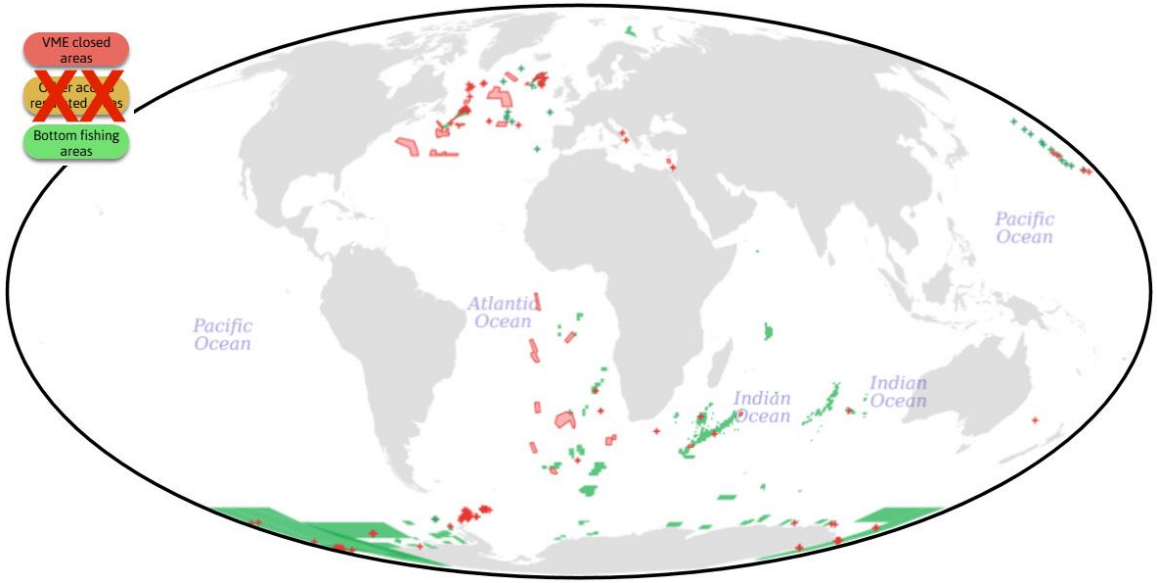
Bottom fisheries maps with boundaries



Bottom fisheries management map https://www.fao.org/in-action/vulnerable-marine-ecosystems/en/

Measures for managing fishing and avoiding impacts on benthic biodiversity

Bottom fisheries maps with boundaries



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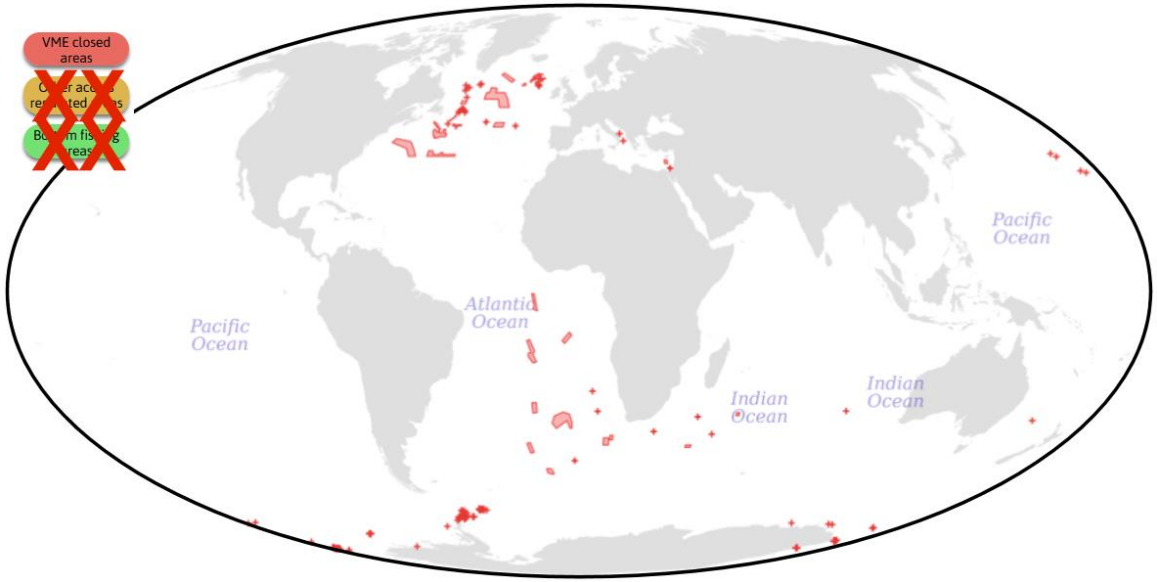
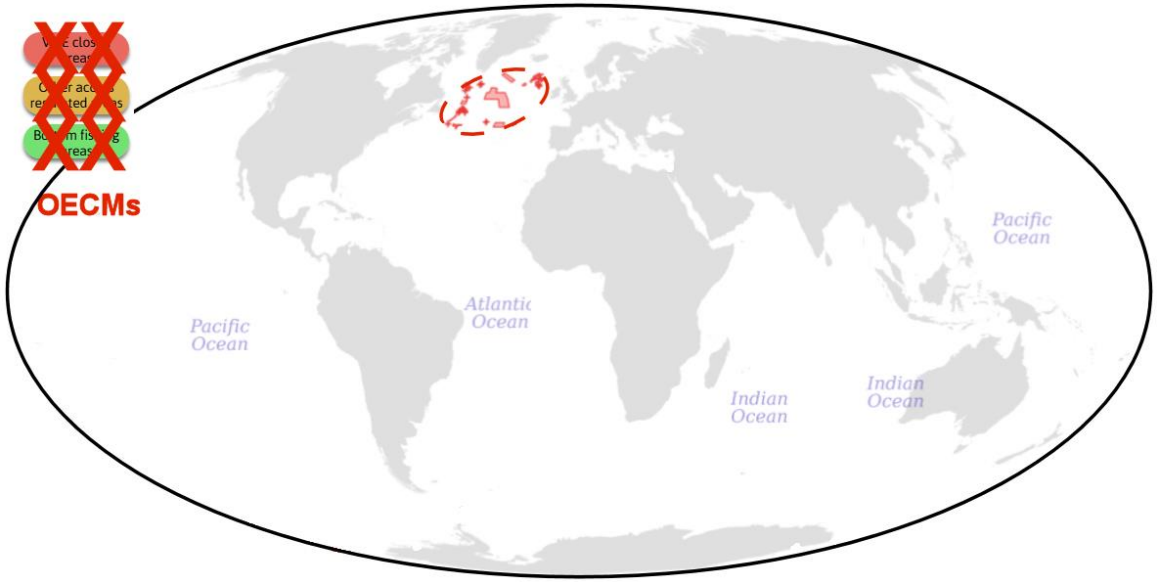


Bottom fisheries management map https://www.fao.org/in-action/vulnerable-marine-ecosystems/en/

Measures for managing fishing and avoiding impacts on benthic biodiversity

Bottom fisheries maps with boundaries

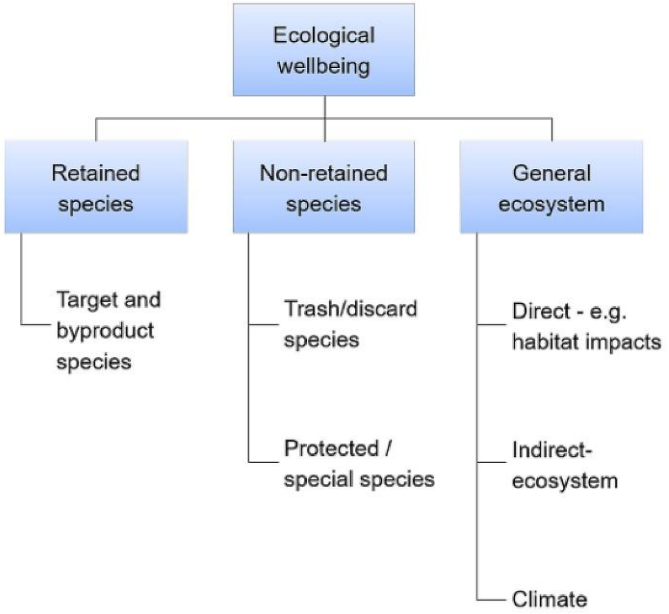
This is what much of the world will see as ABNJ fisheries management



Bottom fisheries management map https://www.fao.org/in-action/vulnerable-marine-ecosystems/en/

Measures for managing fishing and avoiding impacts on benthic biodiversity

RFMOs, EAFM and maps

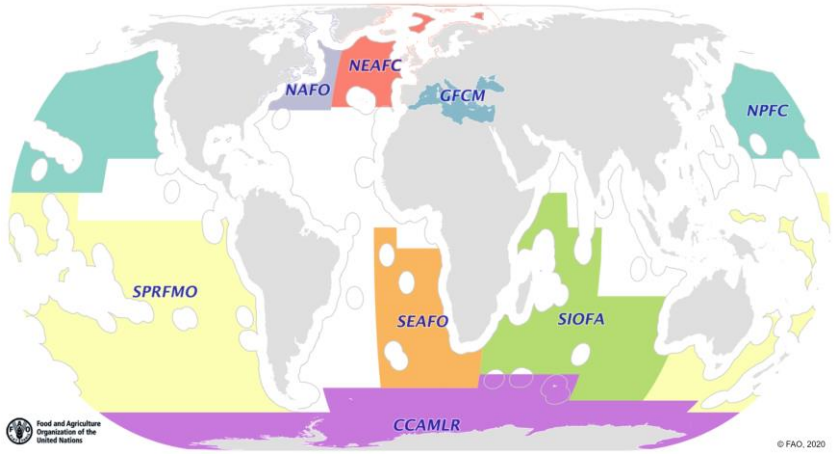


Fletcher (2020)

Using this diagram as a template, and going through the elements in the next six slides …

RFMO managed areas – the start of EAFM

Do you need an RFMO for high seas fisheries management?



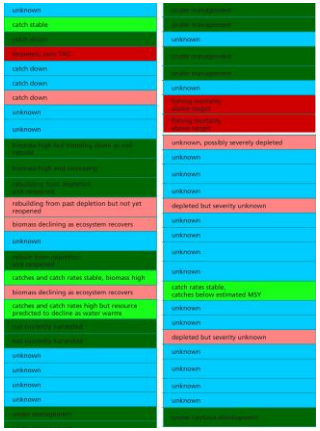
The white areas in the high seas have no deep-sea (general) RFMO

The flag State must still mange their fishing vessels in the high seas

But this is a problem for EAFM implementation

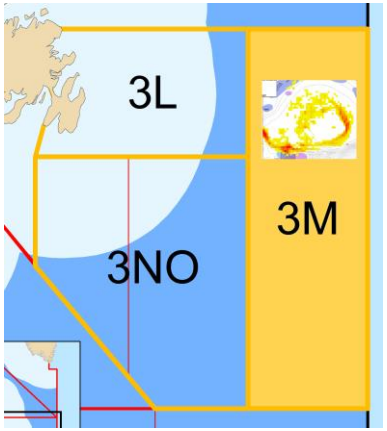
Retained species

High seas stock status



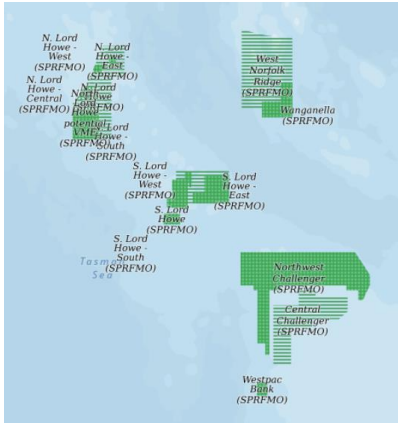
Blue = unknown (WWR, 2020)

Stock area



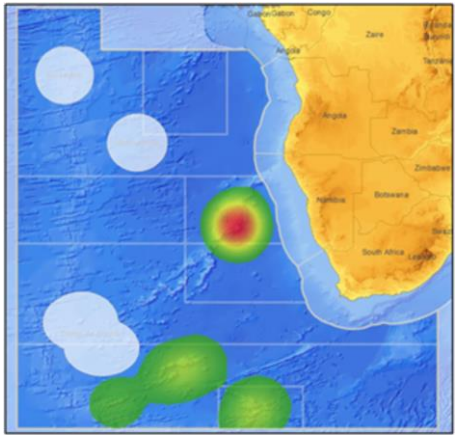
NAFO: 3M cod (+fishing)

Bottom fishing areas



SPRFMO

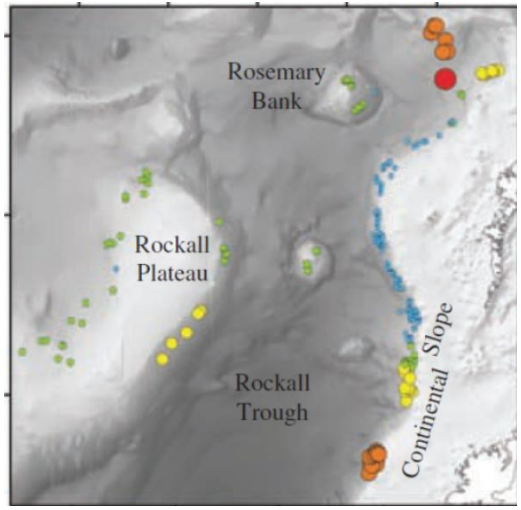
Bottom fishing effort

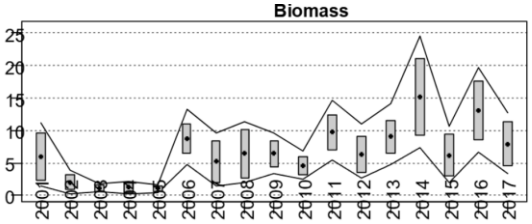


SEAFO

Non-retained spp – Trash/discards

- Discards are very poorly recorded in most RFMO regions
- EAFM requires good discard reporting
- On-board observers partially help
- Never seen as a compliance issue (half true …)



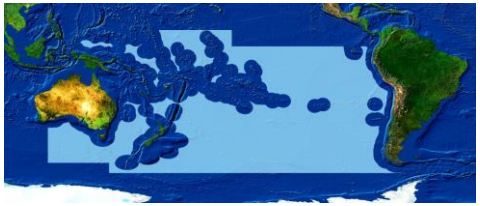


NEAFC and OSPAR (2020) birdbeak dogfish *Deania calcea.* Results from surveys – no commercial data.

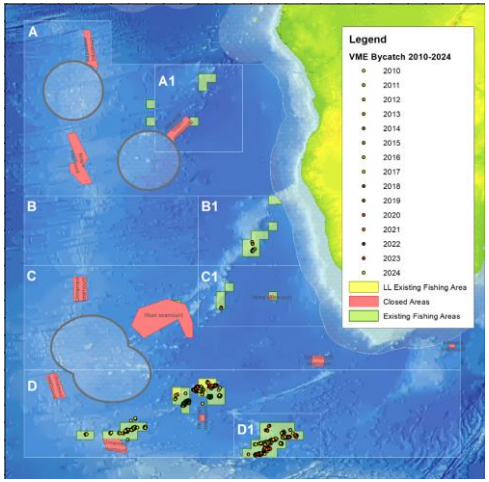
Non-retained spp – Protected/special spp

Endangered, Threatened and Protected (ETP) species, e.g.,

- Seabirds (some thresholds), Turtles, Marine mammals (regulated area map)
- Corals and sponges (VMEs) (encounter and distribution maps)



SPRFMO: CMM09-2017 Seabird protection for demersal longlines and trawls

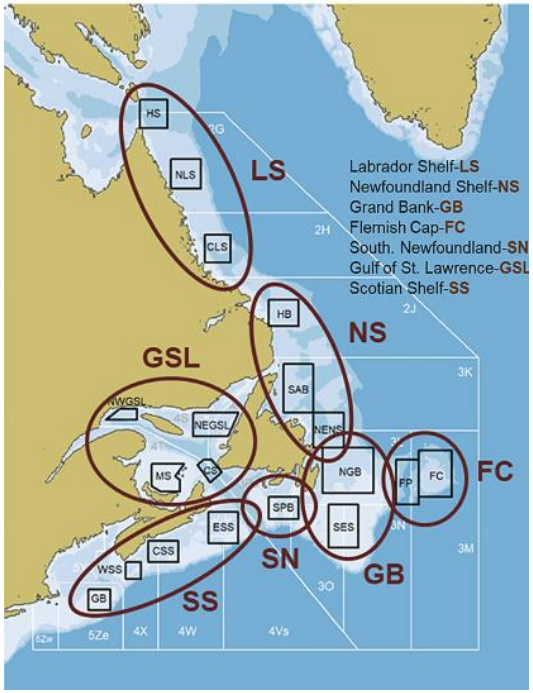


SEAFO: VMEs, bottom fishing areas and all VME indicator encounters

General ecosystems – Direct effects

- Vulnerable marine ecosystems (VMEs)
- Predator/prey interactions
- Cumulative ecosystem effects

Ecoregions
NAFO Ecosystem production potential

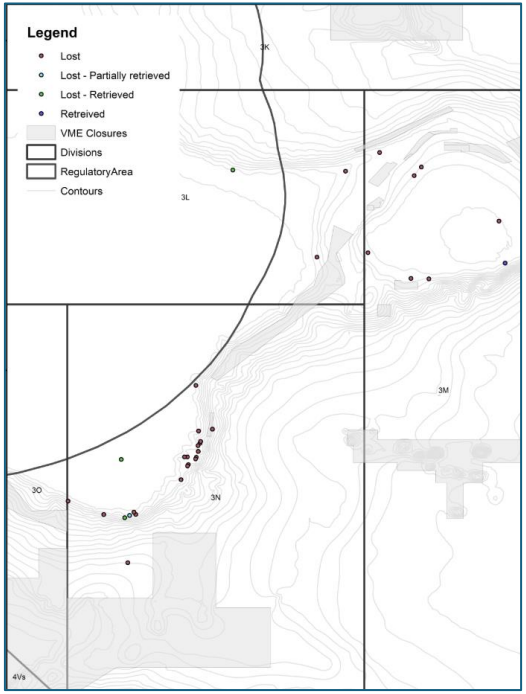


General ecosystems – Indirect effects

- Gear bans (e.g. bottom set gillnets, bottom trawls)
- Gear loss
- Plastic and waste discharge

  (International Maritime Organization)
- Vessel emissions (IMO)

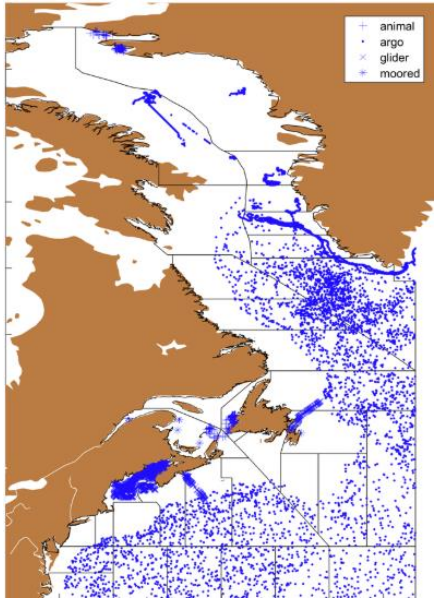
NW Atlantic
NAFO Lost Gear Map in accordance with Article 13.15 of the NAFO CEM



General ecosystems – Climate

Climate (climate change) (no management maps)

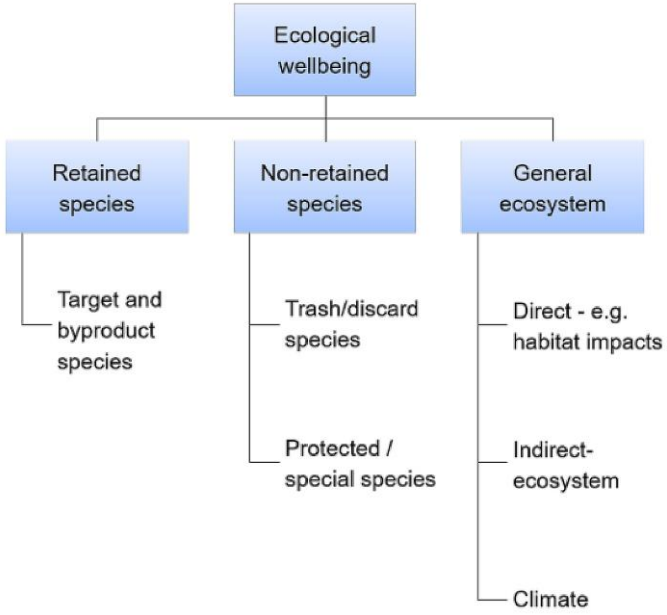
- 5 of 7 RFMOs now have CC resolutions *c*.2023. CCAMLR since 2009.
- All trying to incorporate CC into their regular work.
- DSF Project has had CC consultancies with NAFO, NEAFC and NPFC. SPRFMO soon.
- Results complicated by different time scales and ecosystem knowledge.
- CC will have big effects in the long-term.
- RFMOs could contribute to global CC understanding.

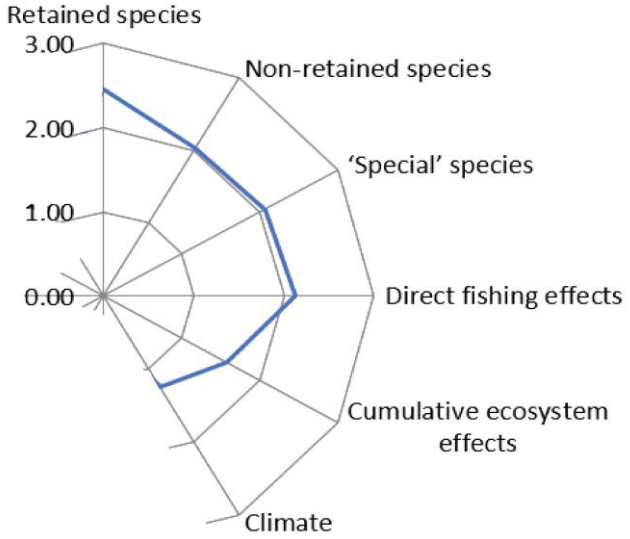


NAFO Environmental Sampling 2022

Ecological component - assessment

Fletcher (2020) scores for all RFMOs combined





1= Partly; 2=Mostly and 3= Fully

Ecological component - conclusions

RFMOs already undertake many of the ecological elements of EAFM

- Piecemeal - no overall EAFM framework
- Longer-term targets to be developed
- Better identification of science and management responsibilities (Panel 1)
- Organisational/processes for implementation (Panel 2)

Better messaging needed – DSF Project website review!