EO 4 Ecosystem Accounting 2022

Satellite Derived Seascapes as a Measure of the Extent of Ecosystem Types to Support Ecosystem Accounting in the Coastal and Open Ocean

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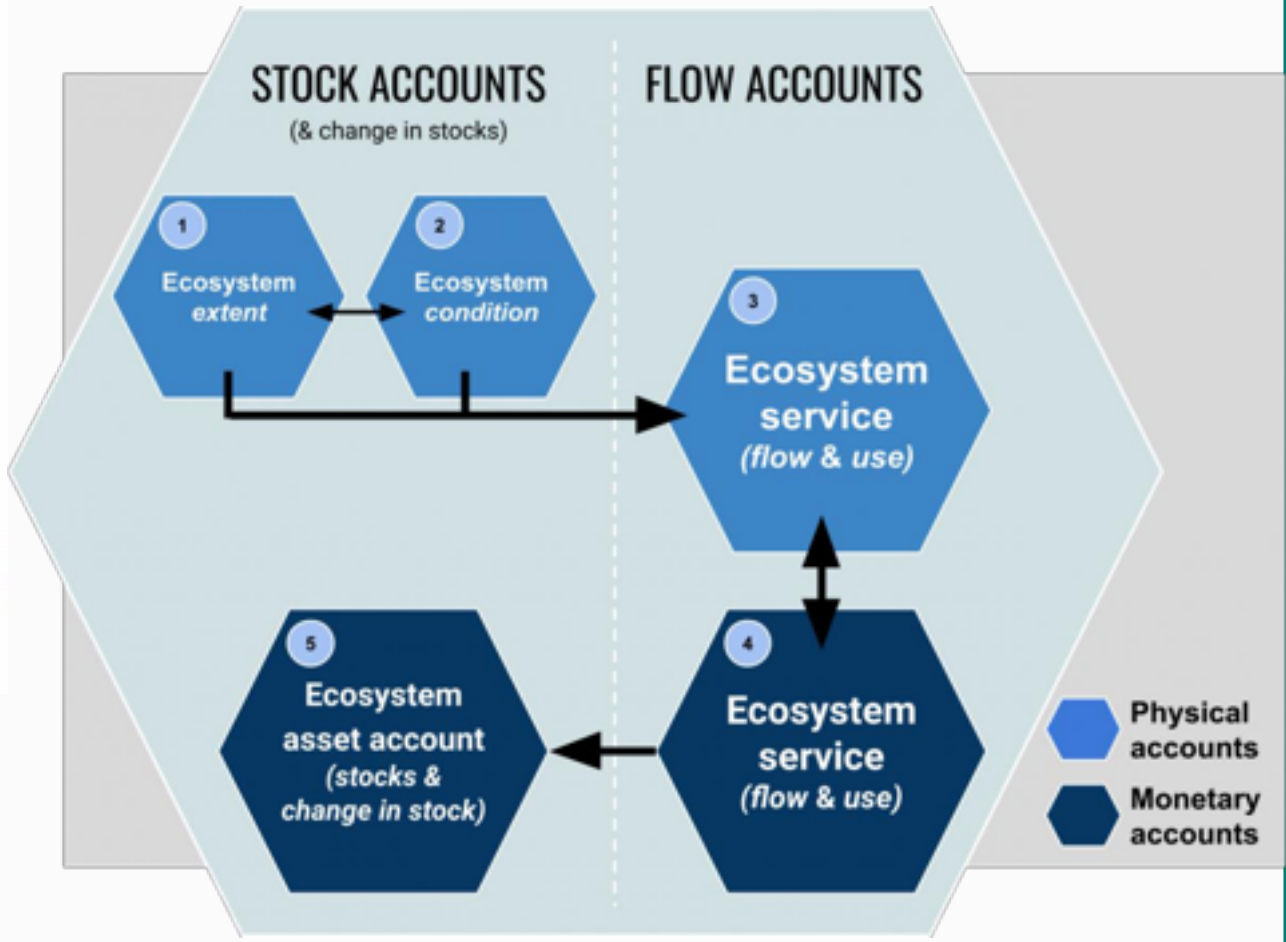
01 – December - 2022

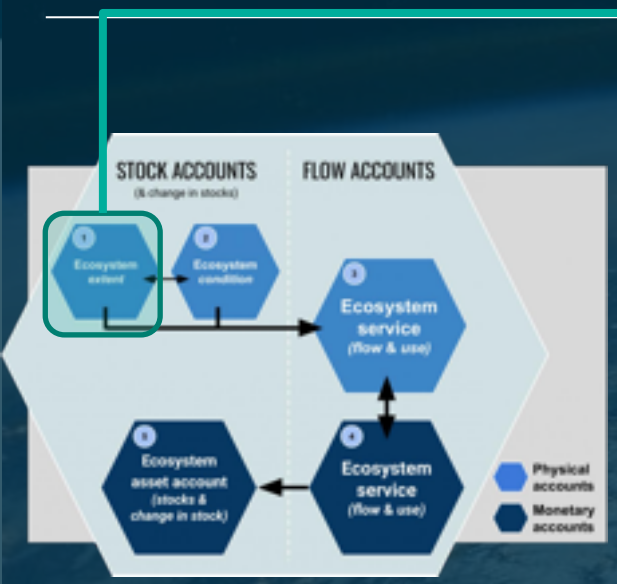
Ocean ecosystems
BOOMS

+ THE EUROPEAN SPACE AGENCY

System of environmental economic accounting (UN)



- **Can we define-objectively- ocean ecosystems extent and condition that can be linked to ecosystem services using EO?**



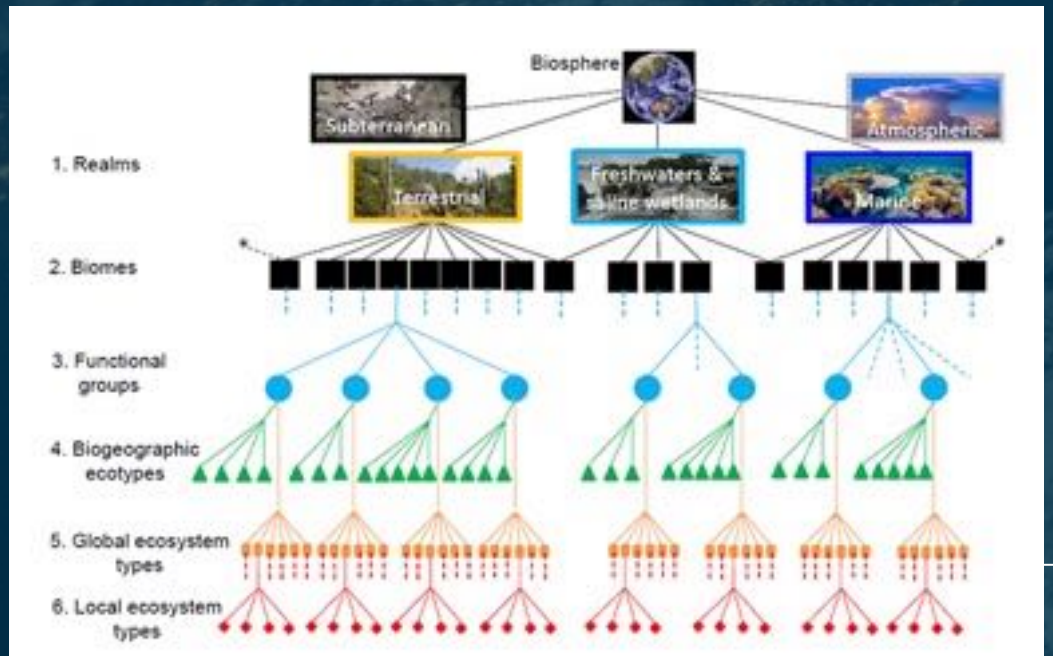
IUCN Global Ecosystem Typology Keith et al (2022)

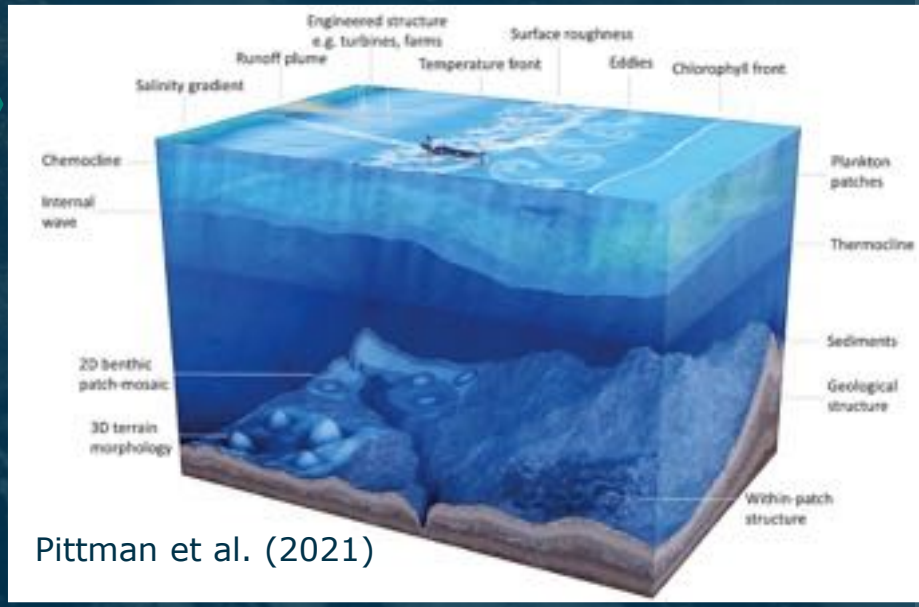
M2 Pelagic oceans water biome

M2.1 Epipelagic ocean waters functional group

Biogeographic ecotypes Epipelagic Seascapes?

Essential Biodiversity variable

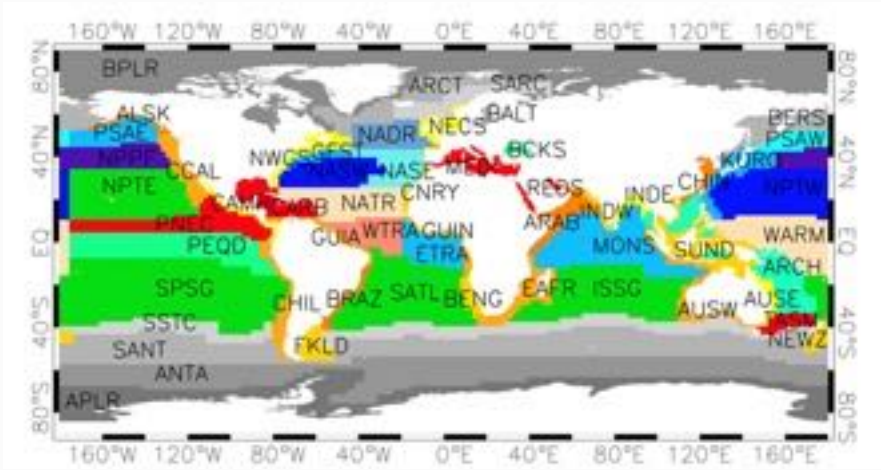


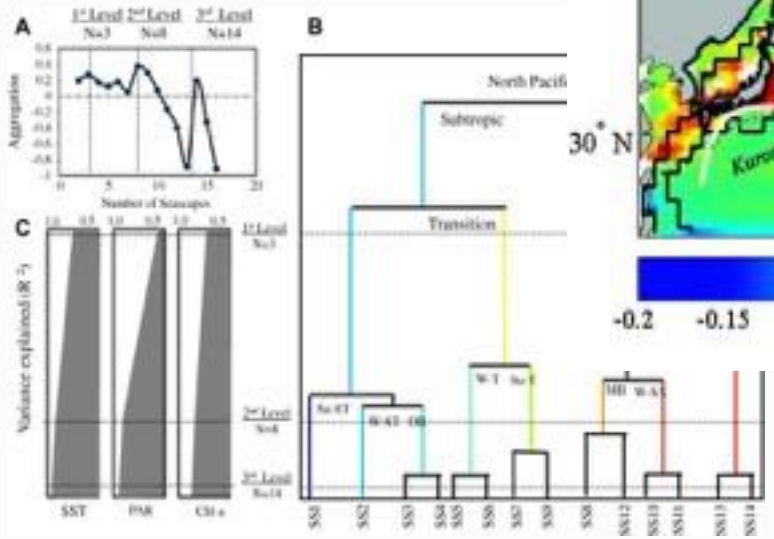


Pittman et al. (2021)

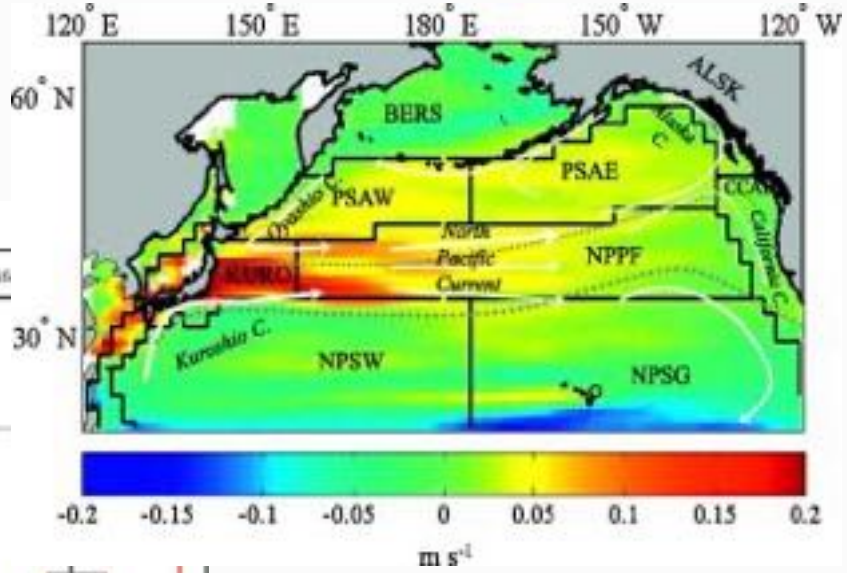
A brief introduction on epipelagic seascapes

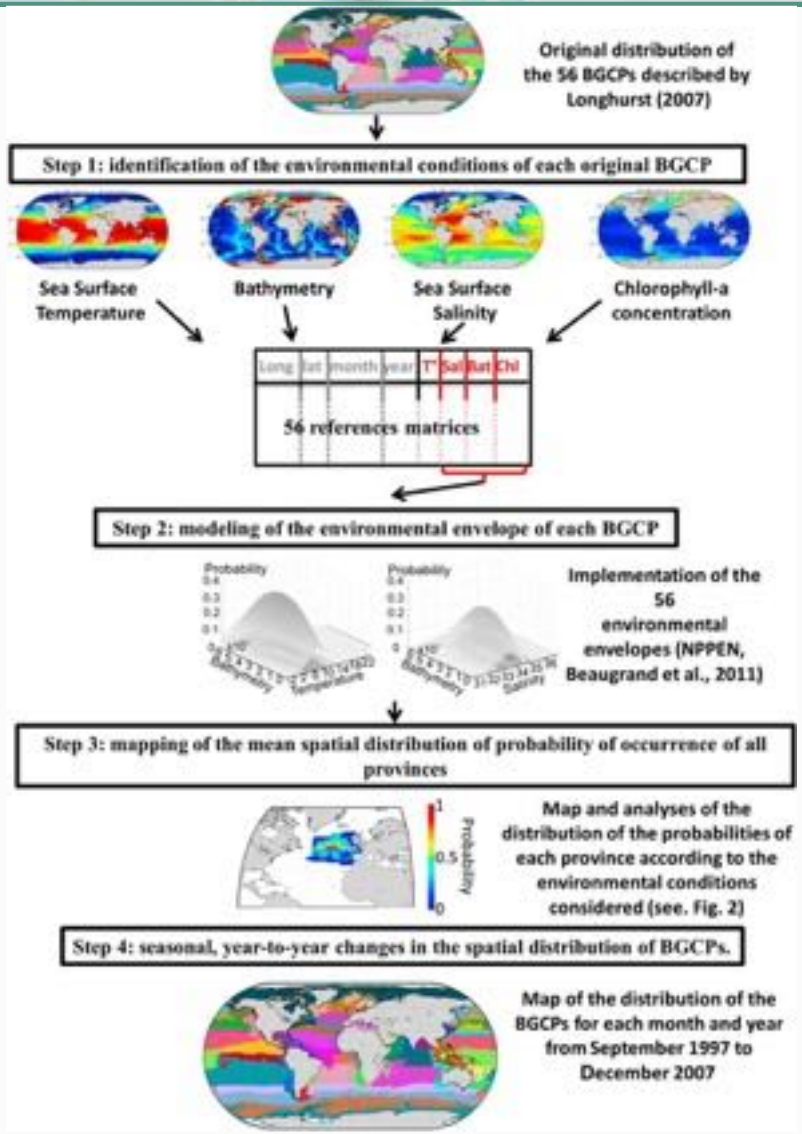
Longhurst provinces from Djavidnia et al (2010) static





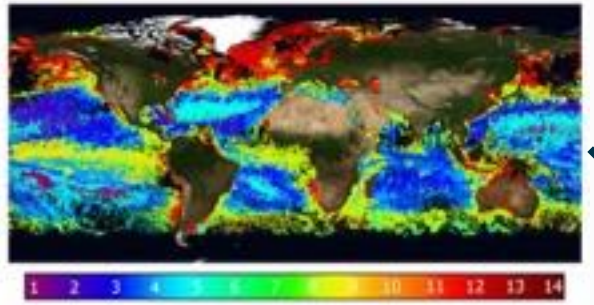
Kavanaugh et al (2014) – PAR, Chla,SST dynamic



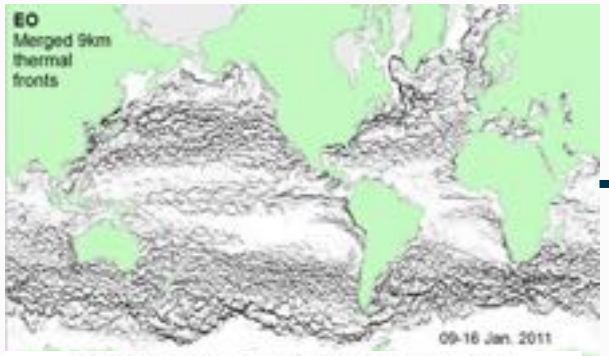


Reygondeau et al. (2013)

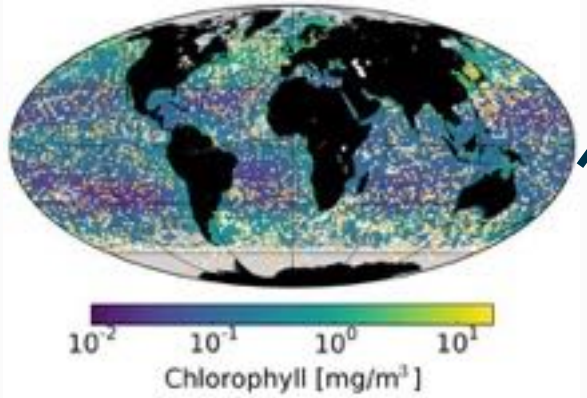
BOOMS: Biodiversity in the open ocean: Mapping, Monitoring and Modelling

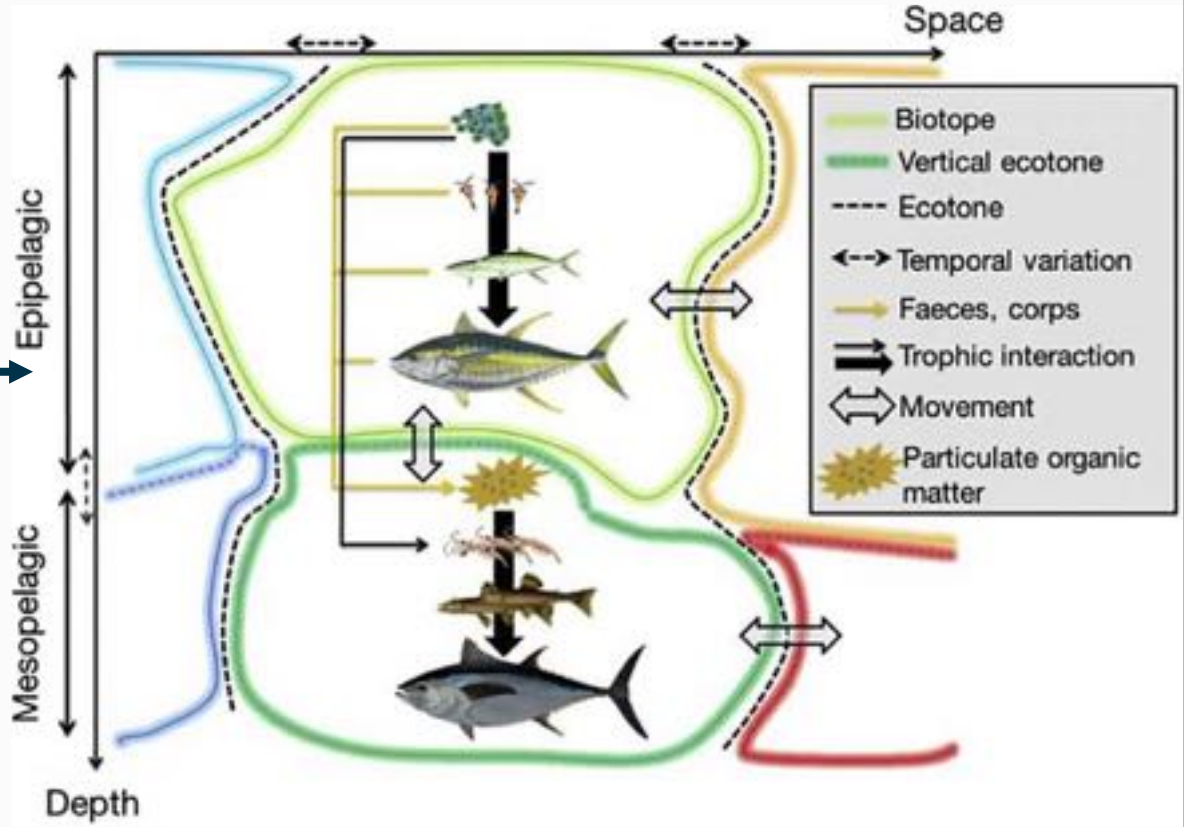


Optical water types based on R_{rs}



OC-CCI Chl 20100424 argo floats



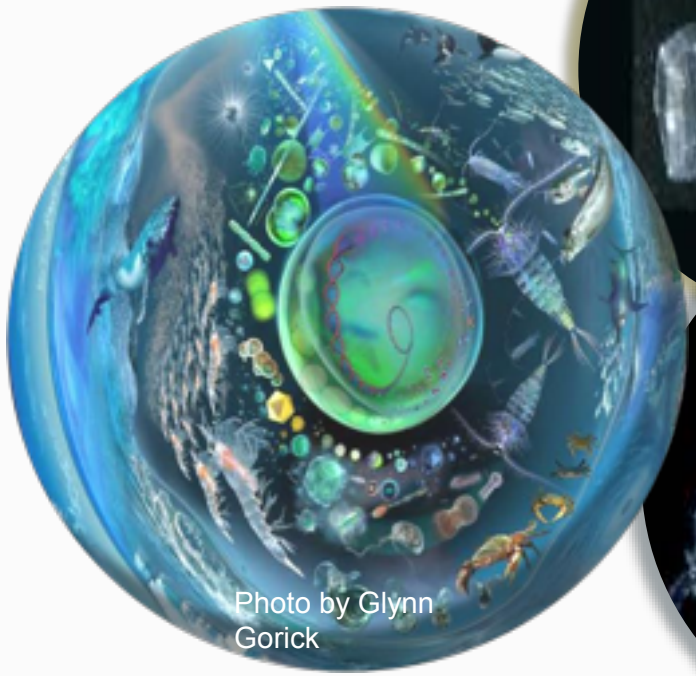


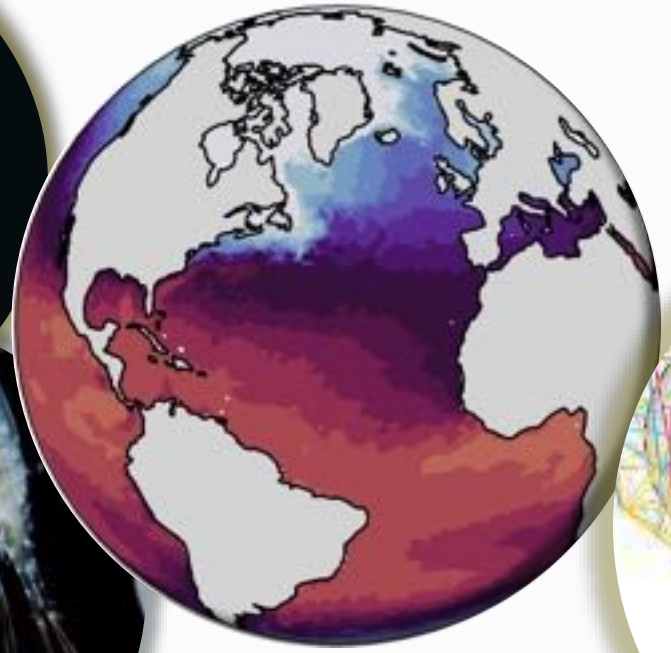
Reygondeau and Dunn (2018)

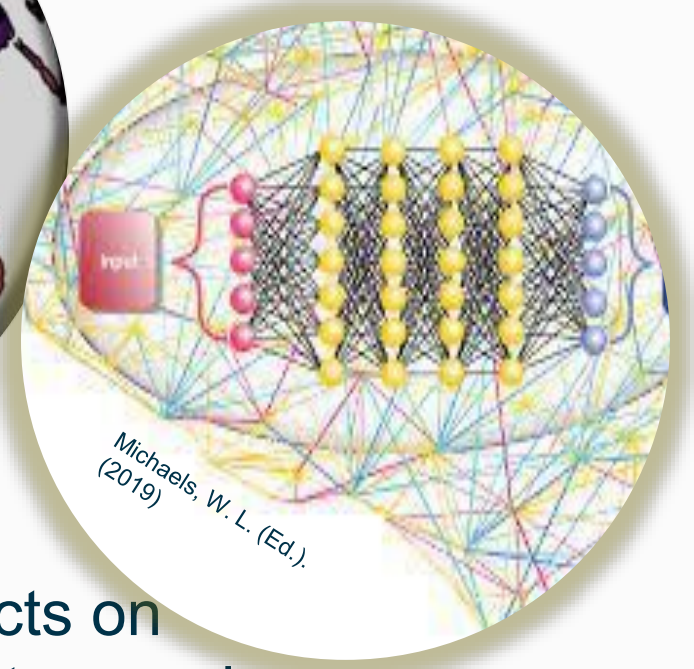
Science Cases (SC)

SC 2: Southern Ocean Dynamic Seascapes as habitats of krill/salp/copepods

SC 4: AI/ML & Open Ocean Biodiversity Seascapes







SC 1: Phytoplankton Diversity

SC 3: MHW impacts on phytoplankton indicators and fisheries

EO challenges, opportunities and recommendations

Challenges

- Extending the pelagic seascape to the Coastal (BiCOME)
- Extending the pelagic seascape to link with the mesopelagic (depth >200 m)

www.bicome.info
@BicomeProject

Recommendations

- To make our data more compatible with current ecosystem accounting workflows

Opportunities

- Invitation to our open session (virtual) morning 28th February in Paris
  - learn more about the BiCOME and BOOMS projects
  - provide input on suitability of products for your application
  - e-mail me: **vmv@pml.ac.uk** **www.booms-project.org**

Ocean ecosystems
BOOMS