Progress towards a revised GOODS tool

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Global Open Ocean and Deep Seabed (GOODS) Biogeographic Classification

ensures biogeographic units are globally well-represented in protected areas

UNESCO, 2009

temp, sal, O_2, detritus, PP, SST, sediment thickness, bathymetry, plates, seamounts, vents, reefs
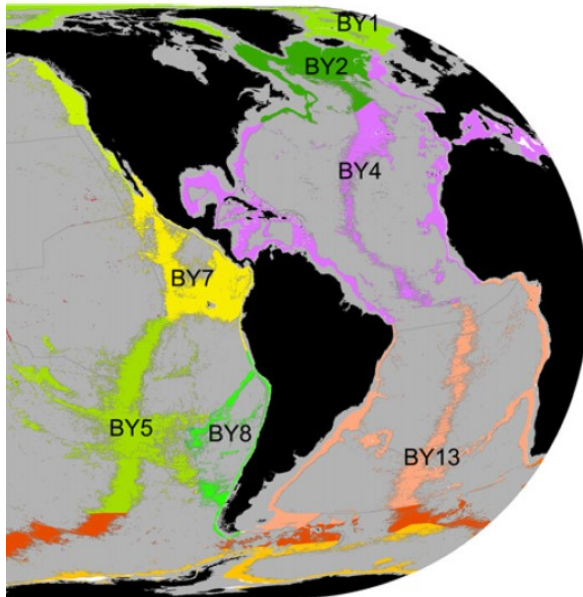
Watling et al., 2013

+ high-res hydrography & POC flux

ATLAS

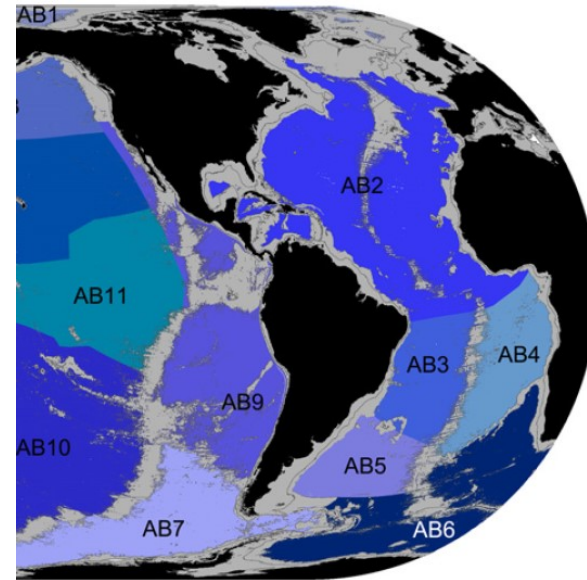+ VIKING20 outputs (MLD, water mass & larval trajectories, SDMs), others

- Focus on areas beyond EEZs in waters >800m
- All approaches cover pelagic & benthic, and combine physiognomic & taxonomic data to some extent

Starting point for North Atlantic: Watling et al., 2013

Lower bathyal (801-3500m)
- BY1 Arctic
- BY2 Northern Atlantic Boreal
- BY4 North Atlantic
  (included MAR hydrothermal vents)

Abyssal (3501-6500m)
- AB2 North Atlantic

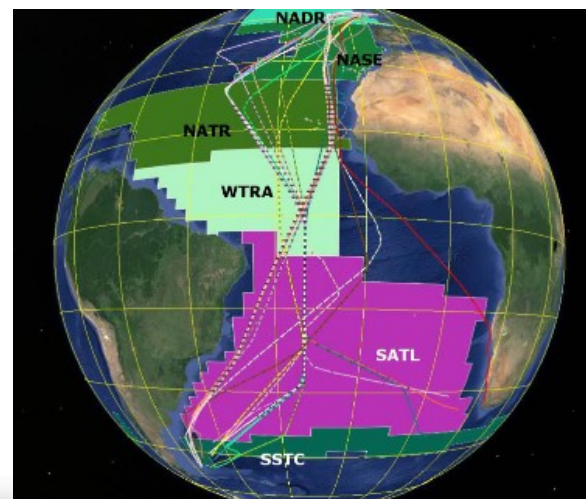*Also 2 hadal provinces (Puerto Rico Trench & Romanche Fracture Zone)*

Progress towards M30 – revised GOODS tool

- Review of environmental datasets used in UNESCO (2009) and Watling et al. (2013) searching for latest higher resolution data
- Scan for new data –

1. Esri's Ecological Marine Units (EMUs) based on 50yrs depth-resolved NOAA World Oceans Atlas data (temp, sal, DO, nitrate, phosphate, silicate)

2. From Smyth et al. (2017) 25 yrs *in situ* data from Atlantic Meridional Transect (AMT) and modelled satellite data

Next steps (M12-24) before 3rd ATLAS ASM

- Review of environmental datasets used in UNESCO (2009) and Watling et al. (2013) searching for latest higher resolution data
- Scan for new data including outputs from ATLAS WP1 & WP2
- **Construct biogeographies for selected VME indicator taxa and fish (point data and species distribution models) and clip to GOODS domain (ABNJ, >800m)**
  - ✓ **WP3 Data compilation and modelling**
  - ✓ **Calibrate with WP1 & WP4 trajectories and genetics**
- Beyond M24 - Project GOODS into the future: SDMs with IPCC scenarios

gracias/thank you