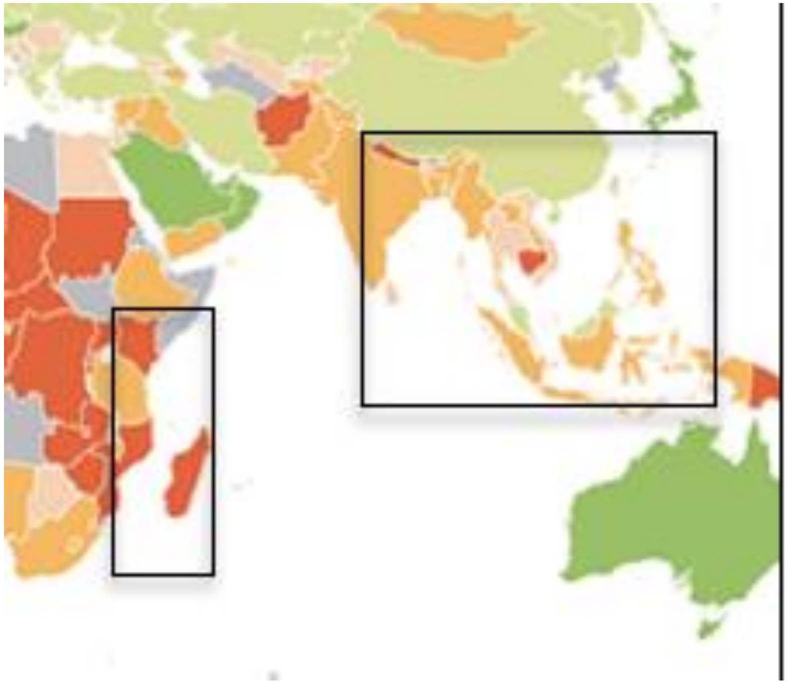
Non-competitive NC-science Funding

- science meets the requirements of NC funding
- at least national and decadal in scale
- makes a substantial contribution in volume and quality to UK environmental science
- demonstrates benefit to the wider UK community of environmental scientists and users
- at least nationally outstanding in purpose and scientific scope
- NC Science includes (i) Single Centre, (ii) Multiple Centre and (iii) ODA components.
- Currently undergoing a process of rebidding

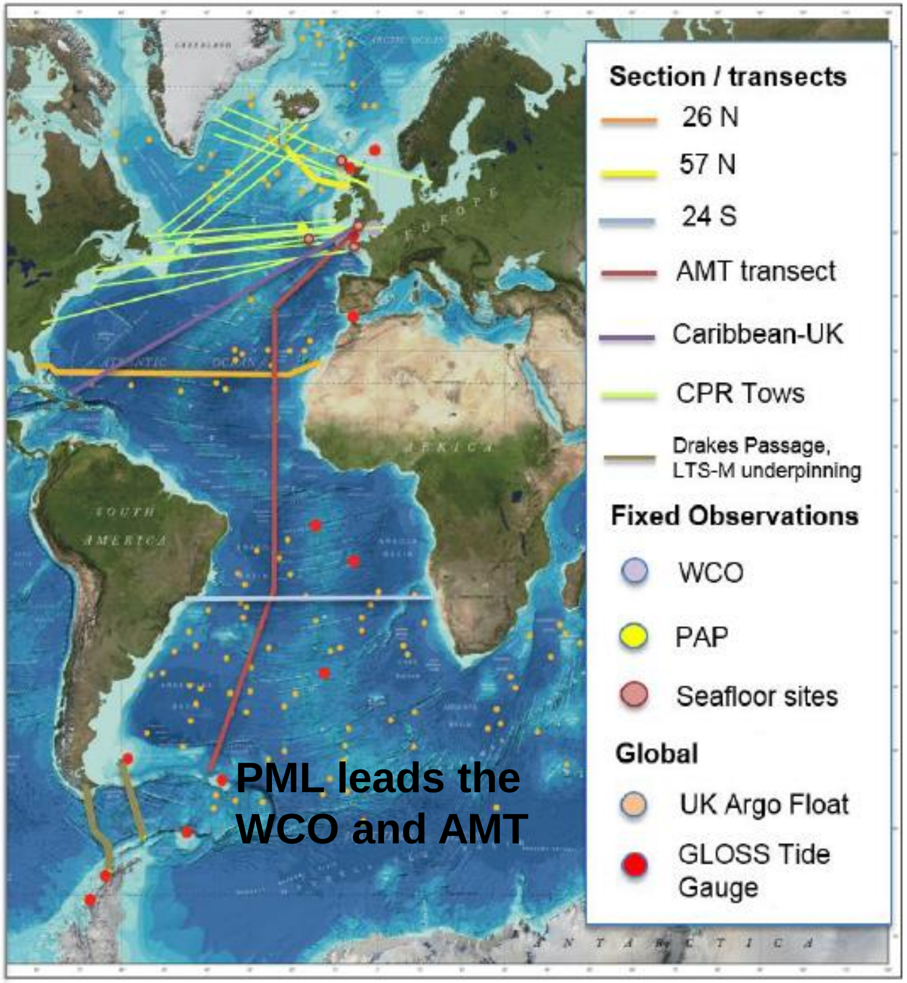
ODA NC

Two themes

- Sustainable growth of, and resilience to change for, the Blue Economies of partner countries:
- Resilience to natural hazards including impact-based, climate-proof coastal flood warning systems:

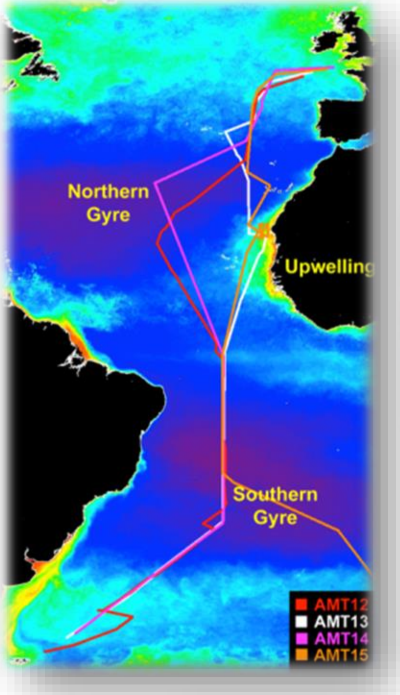


Single Centre NC: Proposed National Capability Pan Atlantic Observing System



PML leads the WCO and AMT

Atlantic Meridional Transect (AMT)



AMT provides spatially extensive observations on the function of ecosystems in the Atlantic Ocean.

It has completed 26 research cruises between the UK & South Atlantic and delivered over 300 papers.

AMT will deliver:

- backbone of a pole to pole observatory
- access to the south Atlantic gyre
- long-term climate and ecosystem service relevant in-situ observations
- Facilitates deployment of moorings and Argo floats.
- supports long term sediment trap observations
- observations for satellite and model calibration and validation (e.g. ESA, UKESM)
- a platform for testing new technology
- additional berths for HEI’s and PhD students

Vision: AMT as a platform for autonomous technology development.

Western Channel Observatory (WCO)

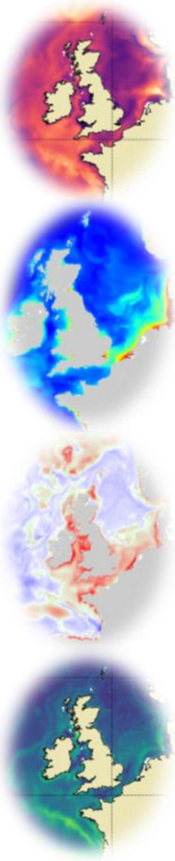
WCO is a uniquely comprehensive, long-term marine observatory, exploring natural variability in marine systems to help predict the causes and consequences of future environmental change.

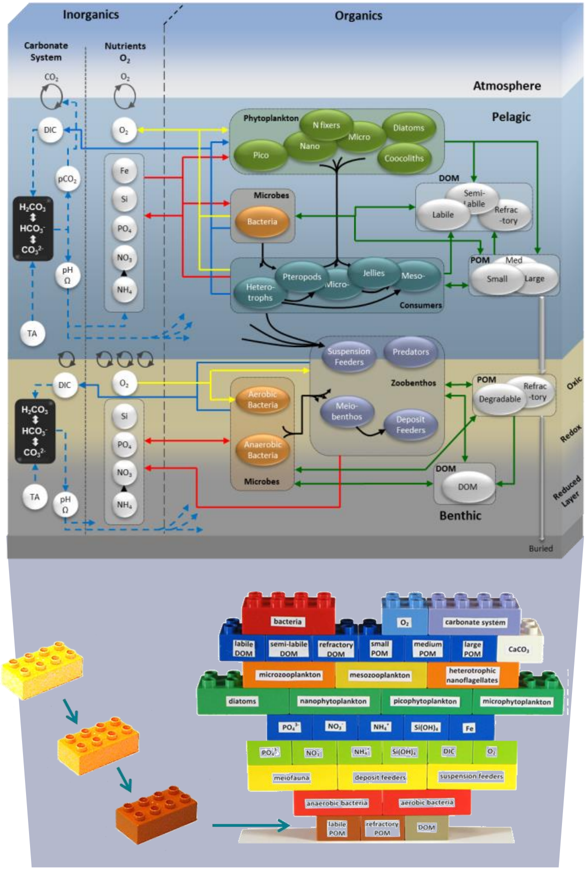
- Long term time-series of plankton and benthic ecology
- Data to support development and validation of models
- A test bed for new technologies and innovation.
- Regular sampling captures unusual climatic or environmental events
- Support next generation researchers (e.g. NERC DTP's) and NERC programmes (e.g. MERP, SSB)
- Support to policy (e.g. MSFD ref station, ICES WGs)
- Part of international observation networks (e.g. ICOS, Global OA monitoring)
- A reference point for the CPR survey
- Over 160 peer reviewed papers since 2001

Vision: An underpinning time-series enabling science and innovation.

PML | Plymouth Marine Laboratory

European Regional Seas Ecosystem Model (ERSEM)





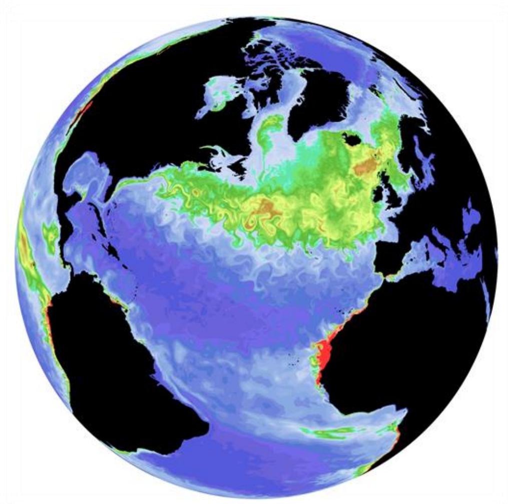
ERSEM – a scalable complexity ecosystem model addressing both biodiversity and biogeochemistry. Written in a flexible framework it allows any number of species or processes to be easily added or removed from the system.

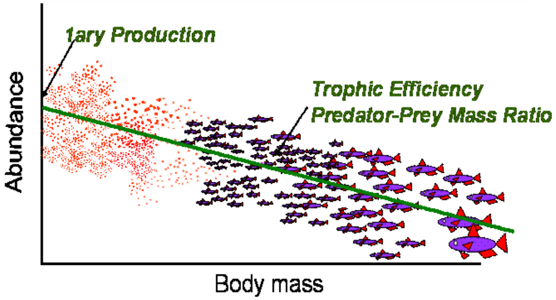
ERSEM

- Underpins national predictive and operational models
- Enabling quantification of impacts of multiple drivers on the marine system
- Supports policy, management and industry re climate mitigation and marine use
- Is open access, fully version controlled and documented,
- Supports NERC strategic and discovery science
- Has over 200 registered users and over 200 peer reviewed publications

Vision: World class system enabling the understanding and management of impact and change on ecosystem benefits and services.

Impacts on ecosystem service provision of climate-driven changes in the North Atlantic.





The N Atlantic provides a range of ecosystem benefits and services including

- Climate regulation
- Food provision
- Biodiversity
- Nutrient cycling / bioremediation of waste

The Blue Economy integrates ocean-based economic activities with conservation and sustainable use through effective marine planning. The Blue Economy relies on the resources and services provided by the underlying ecosystem, which is subject to a diverse range of pressures.

We will quantify the impacts of both natural variability and climate change on these benefits and services in support of the blue economy.