

Integrated Pelagic Ecosystem survey

in the western Channel and eastern Celtic Sea



Dr Jeroen van der Kooij
Pelagic Science Team
Centre for Environment, Fisheries and Aquaculture Science

Cefas

Changes in surveys:

- Falling budgets
- Increasing data requirement



JRC SCIENCE AND POLICY REPORTS

Monitoring pelagic habitats to support future EU Policies

Strategic view on how the daily monitoring of marine water-column habitats will support the future EU Integrated Maritime Policy (MSP, CFP, MSFD^{}) to stimulate ecosystem health and blue growth.*

^{*} Maritime Spatial Planning, Common Fisheries Policy, Marine Strategy Framework Directive.

Small pelagic species in SW UK

- Defra funded
- 5 years (2012-2016)
- Primary aims: small pelagic fish
 - SW: Important pelagic fishery: sprat, sardine
 - New fisheries emerging (anchovy, boarfish)
 - Important forage fish
 - Data-limited – fisheries sustainable?
 - Climate indicators?

www.fishingnews.co.uk SOUTH WEST OF ENGLAND 15

Cornish sardines a winner for Falfish

6/11/2009 F.N.

Anchovy bonanza for Brixham men



Sprat



Anchovy



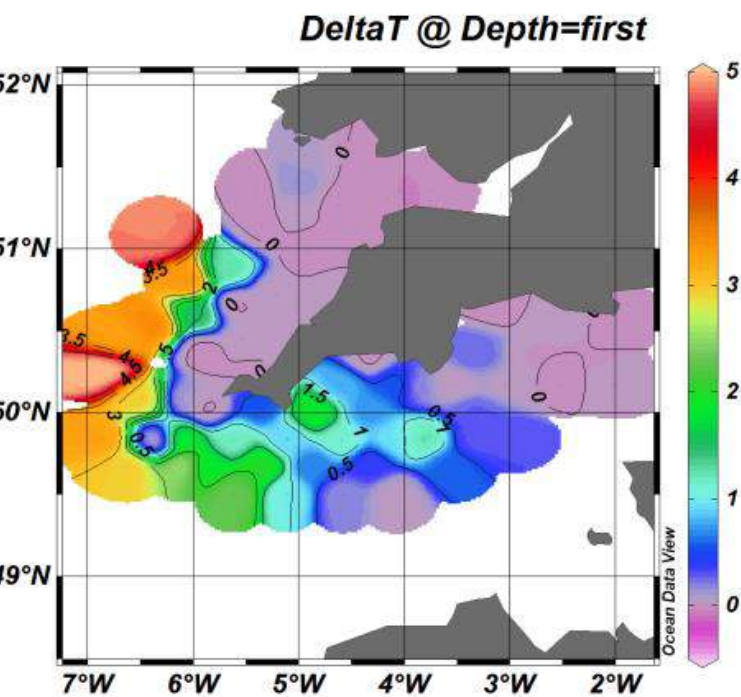
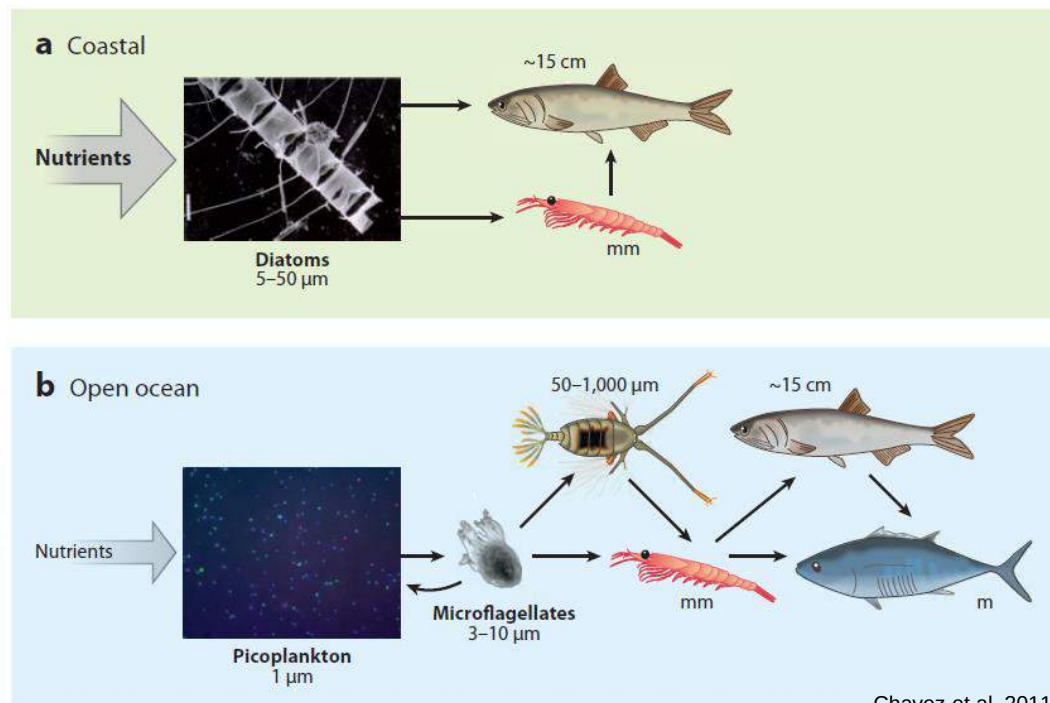
Sardine



Boarfish

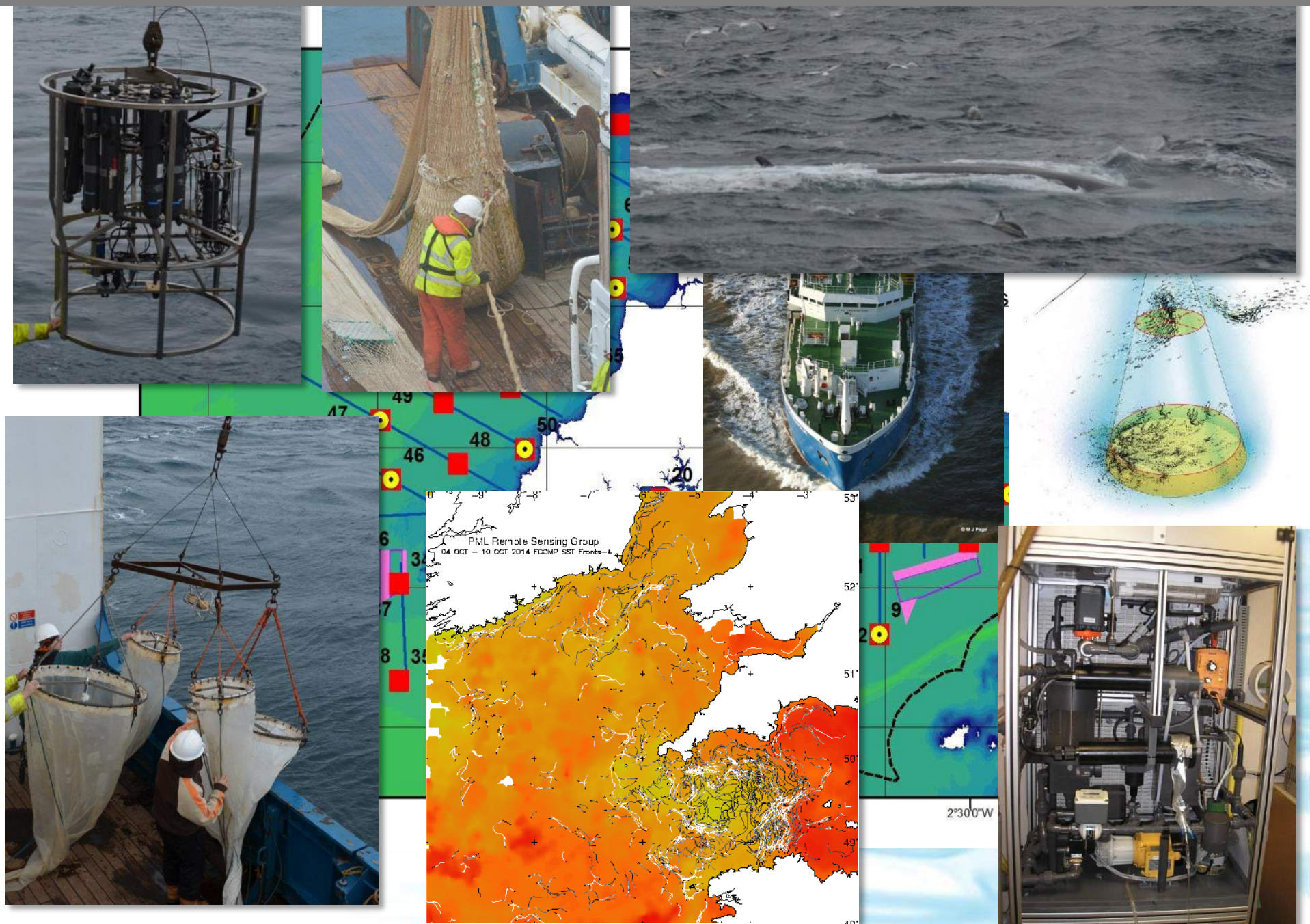
The importance of biological and environmental data

- Food quality and availability for fish and larvae
- Efficiency of the food web

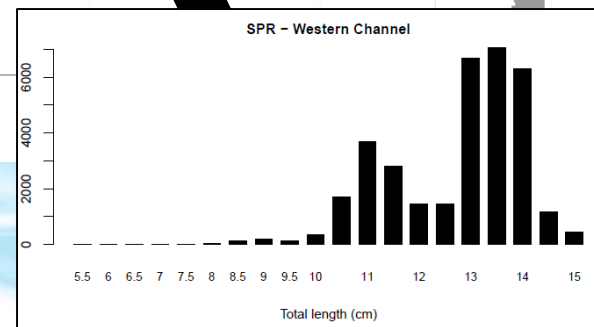
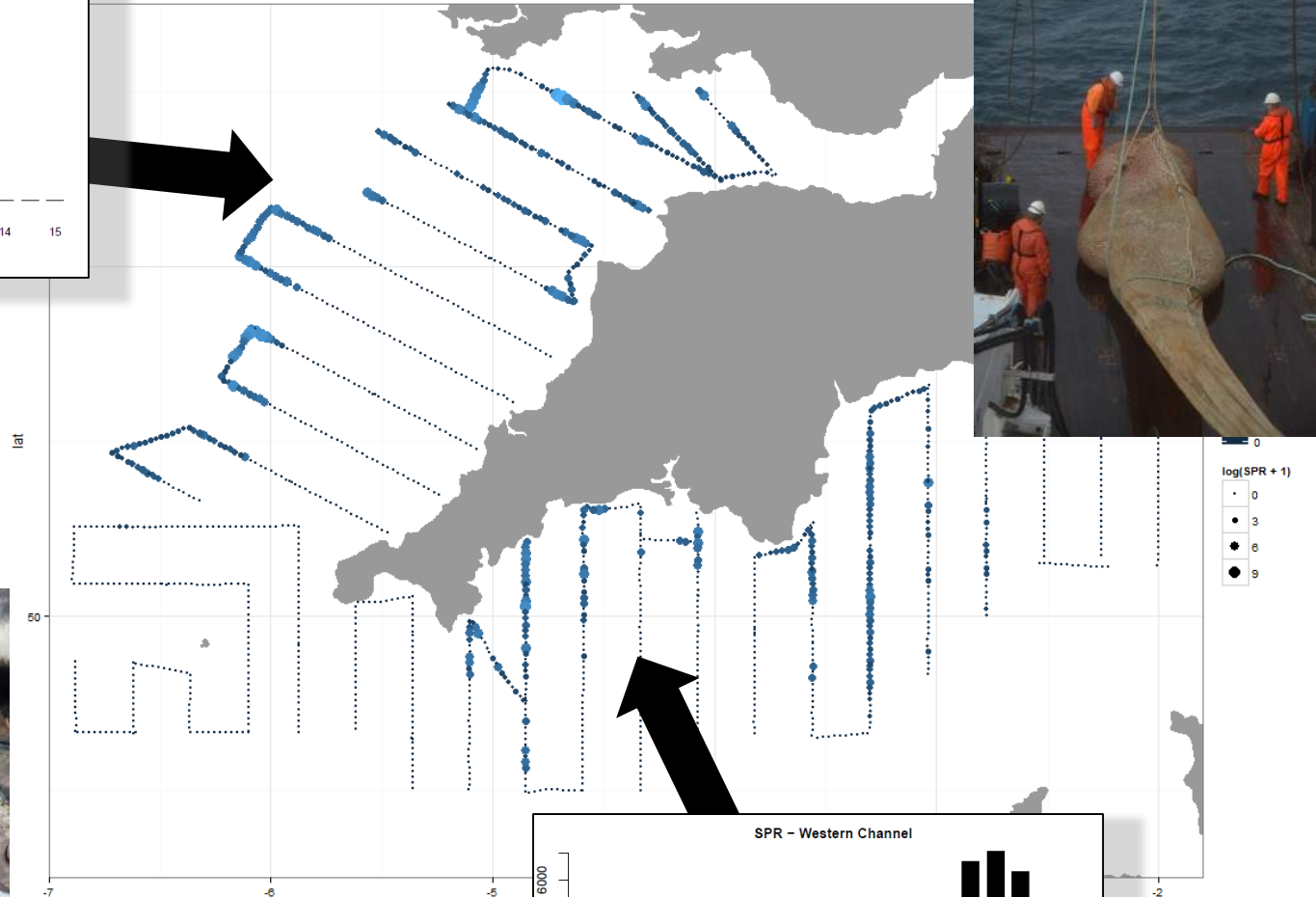
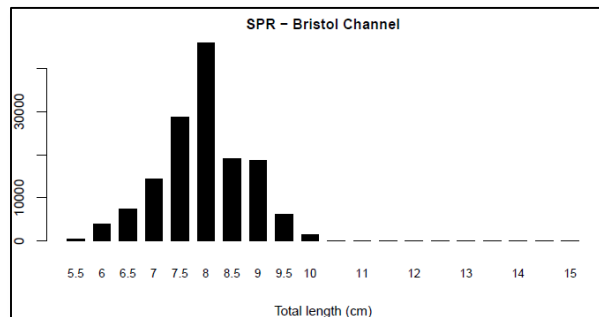


- Physical and chemical conditions affect fish behaviour, spawning, distribution and success of eggs and larvae

Peltic (Pelagic ecosystem survey in the Celtic Sea)



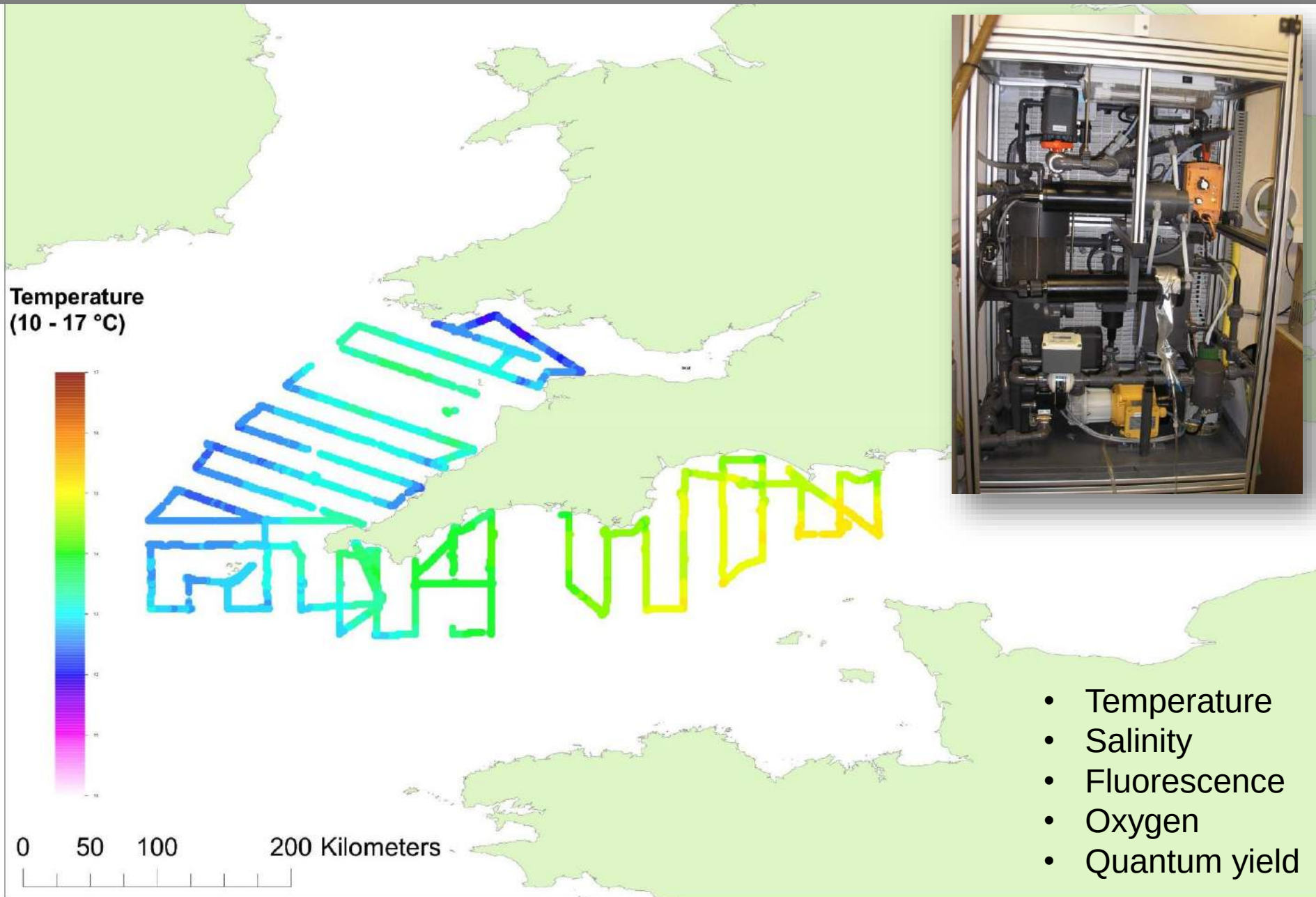
Small Pelagic Fish



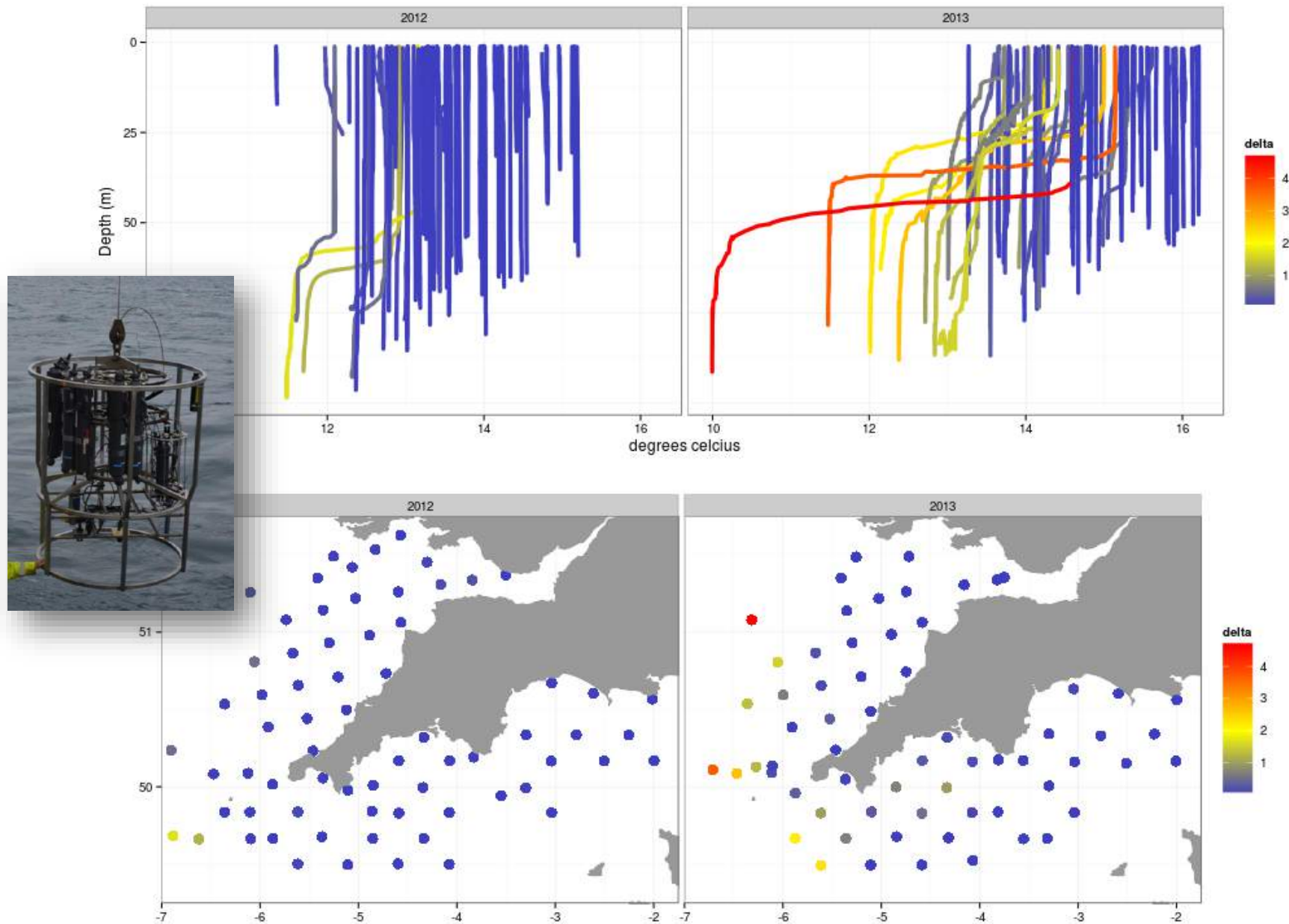
Environmental data



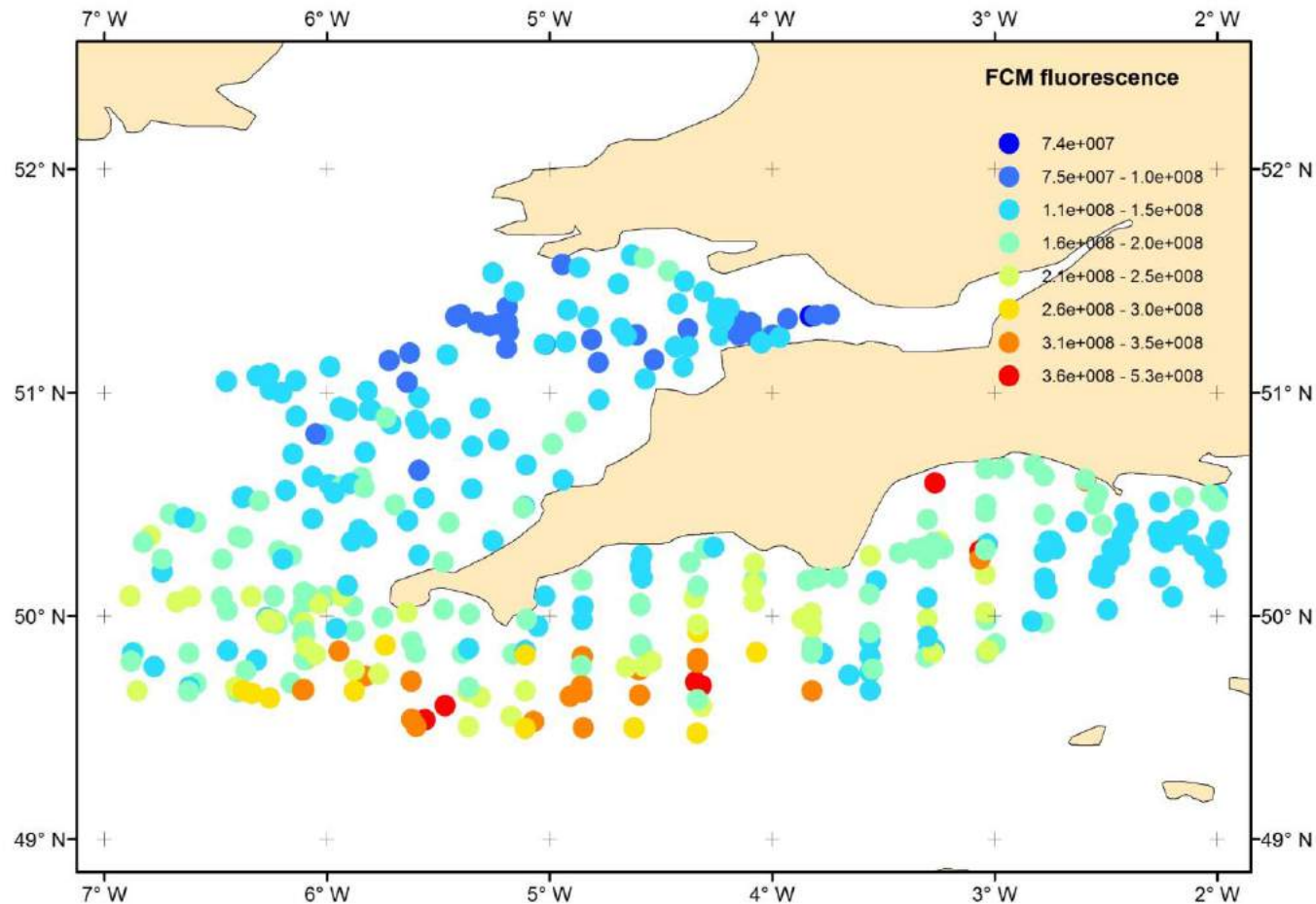
Ferrybox - Surface



ESM2 profiler / Rosette – Surface and water column



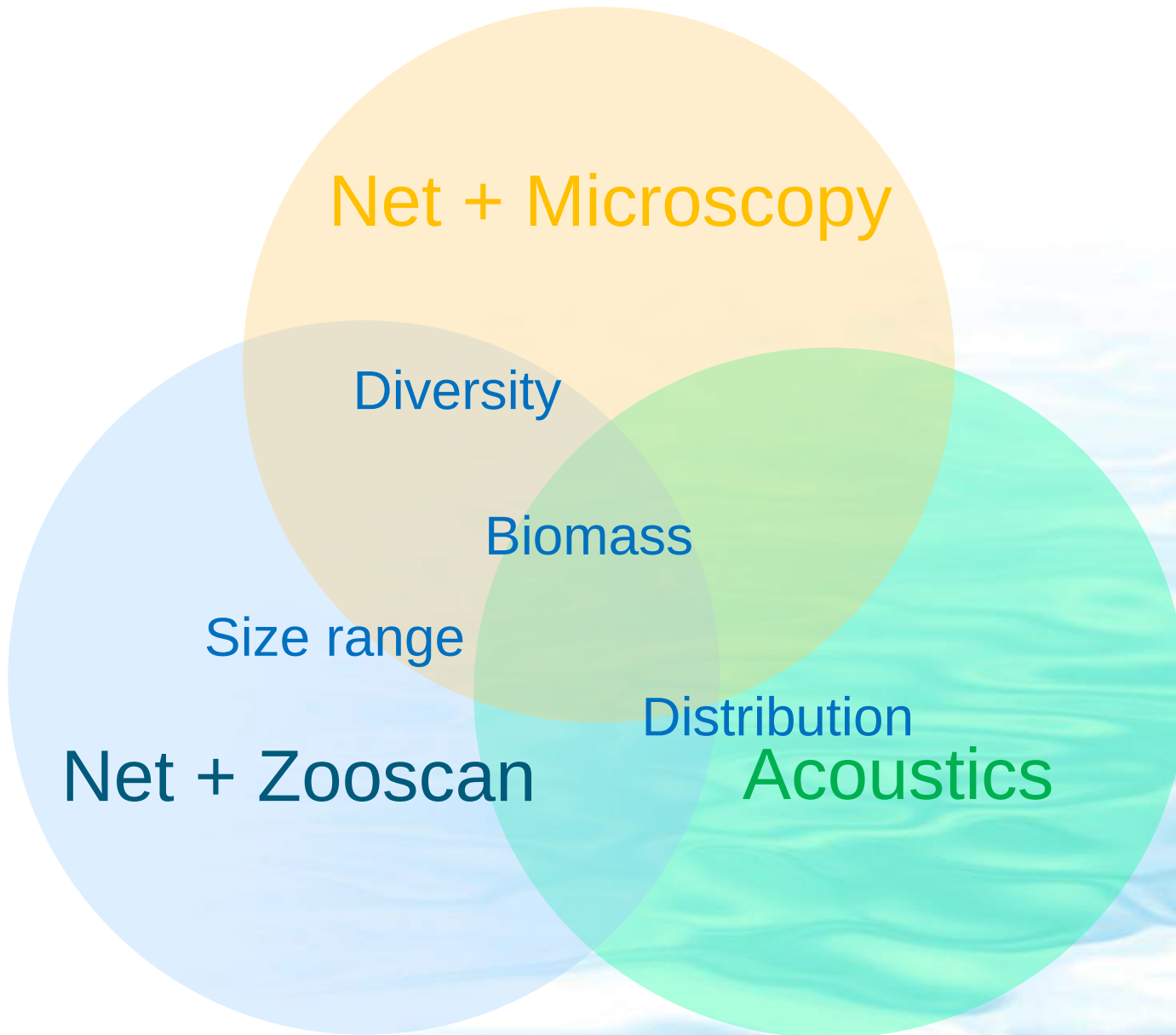
Phytoplankton – Flow cytometry



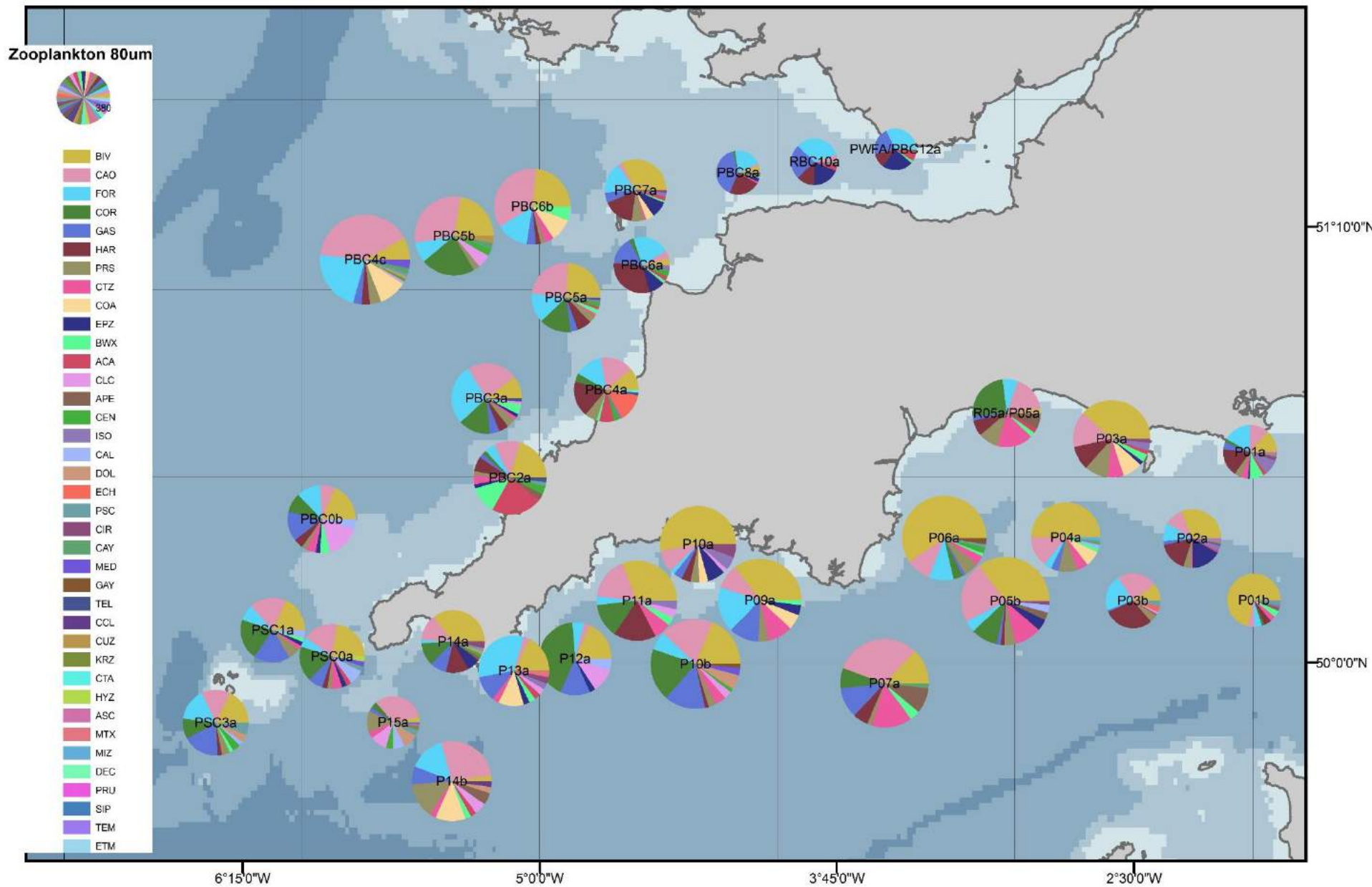
Biomass (total red fluorescence / ml)

Zooplankton



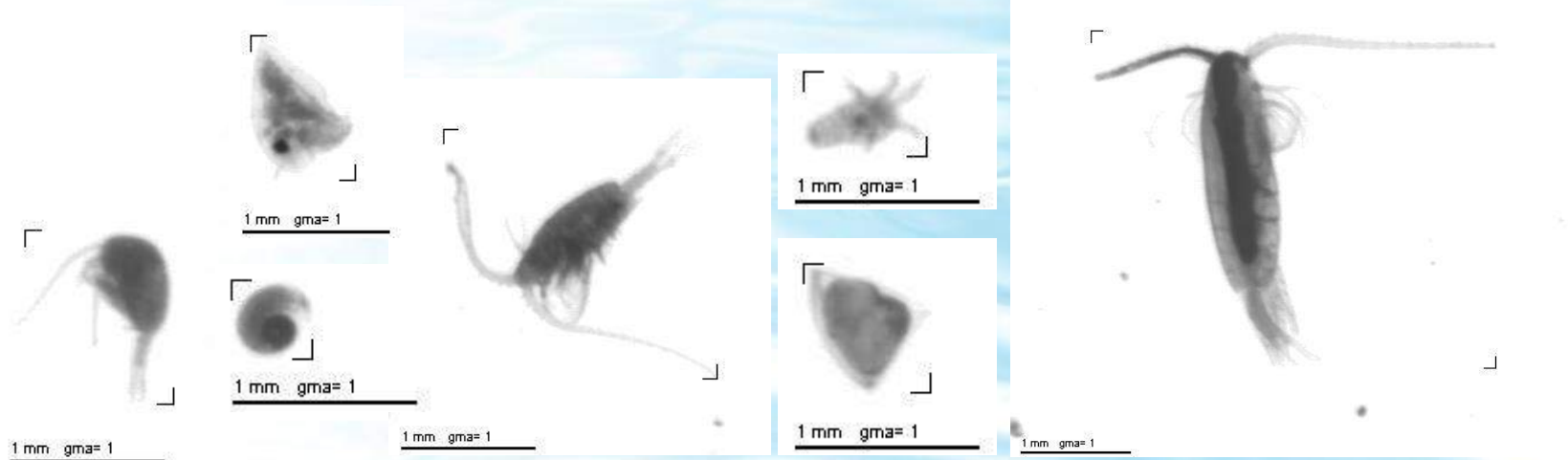
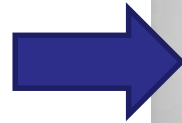


Zooplankton – Zooscan / Microscopy

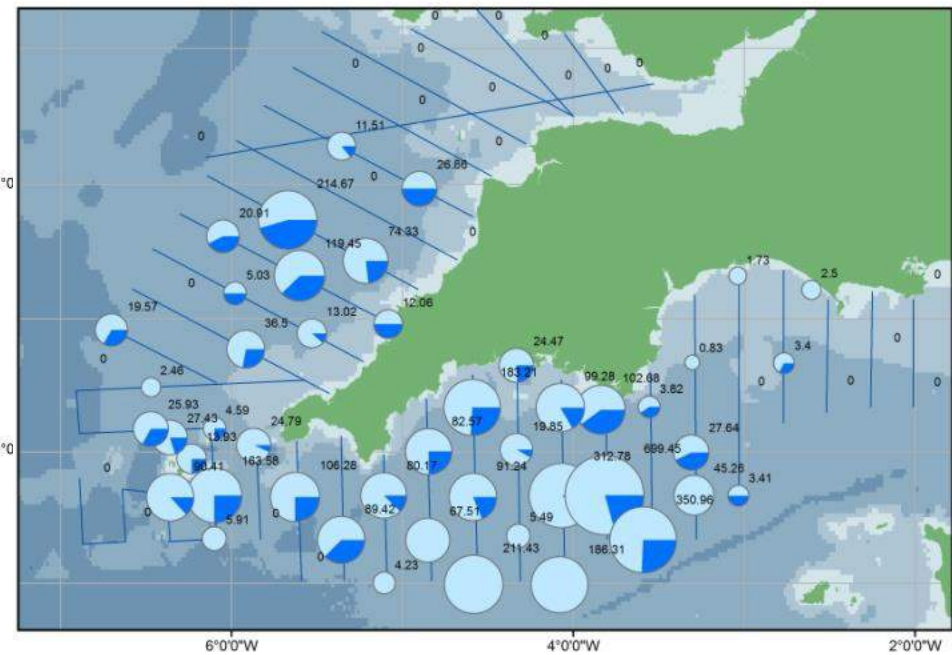
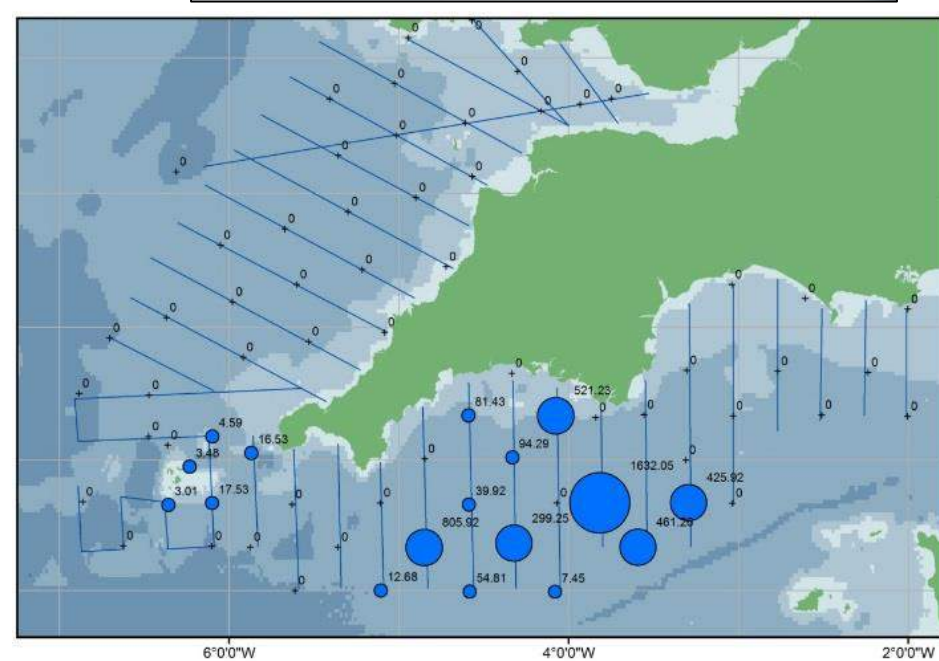
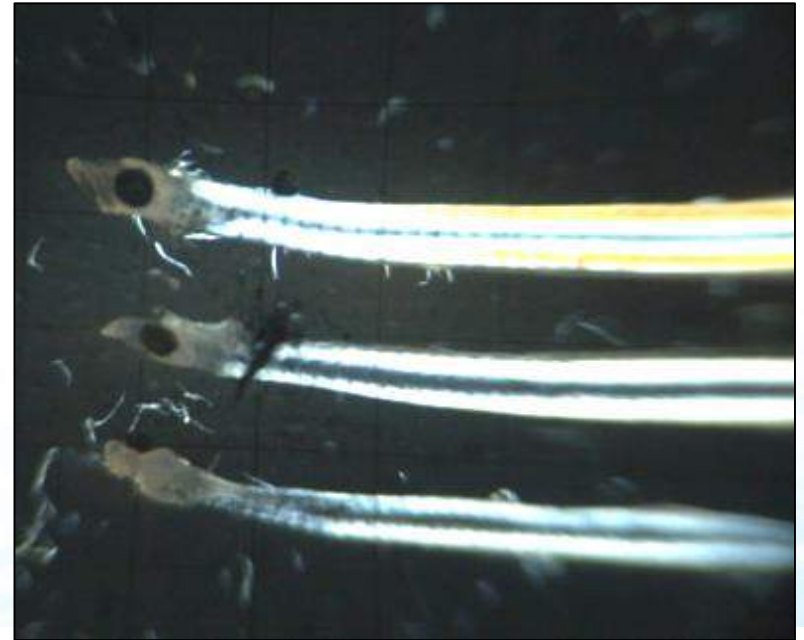
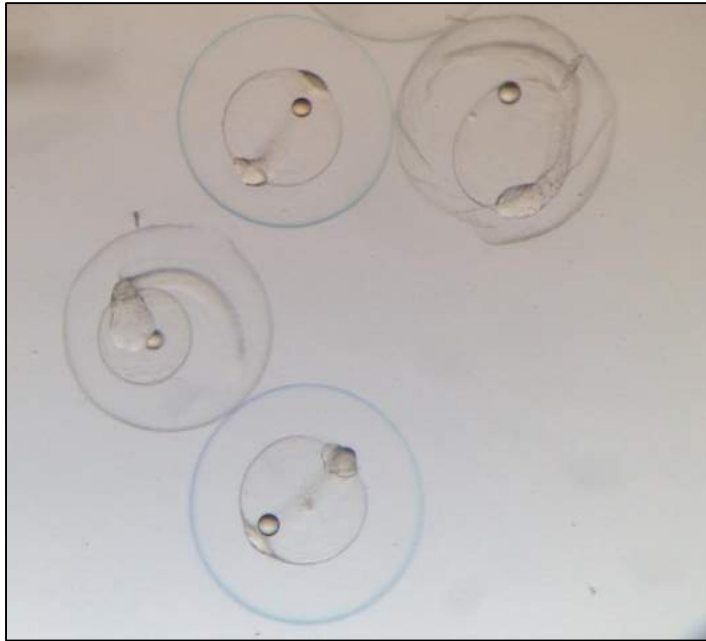


Zooplankton - Zooscan

Zooscan

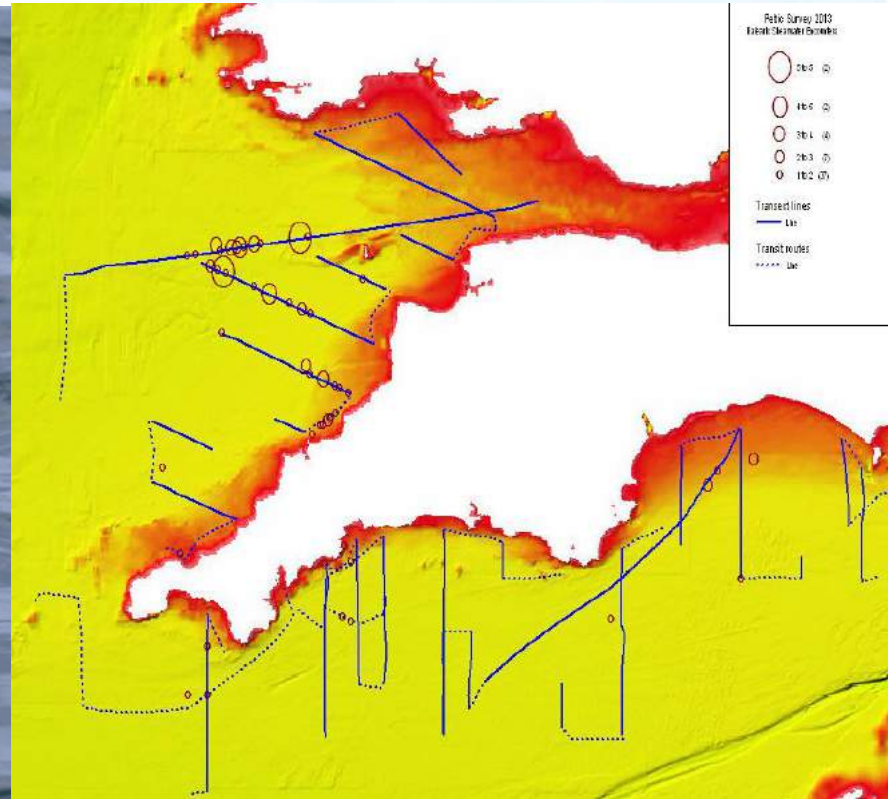


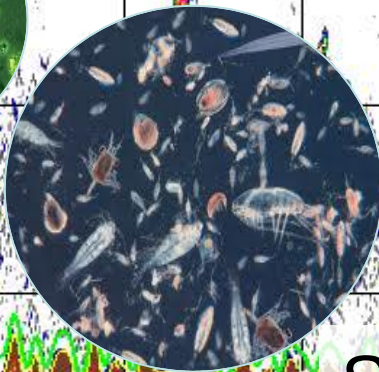
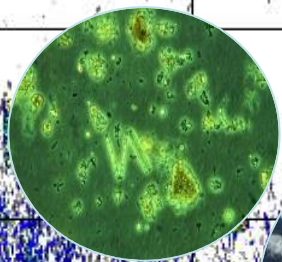
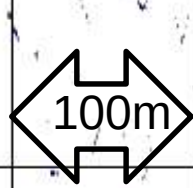
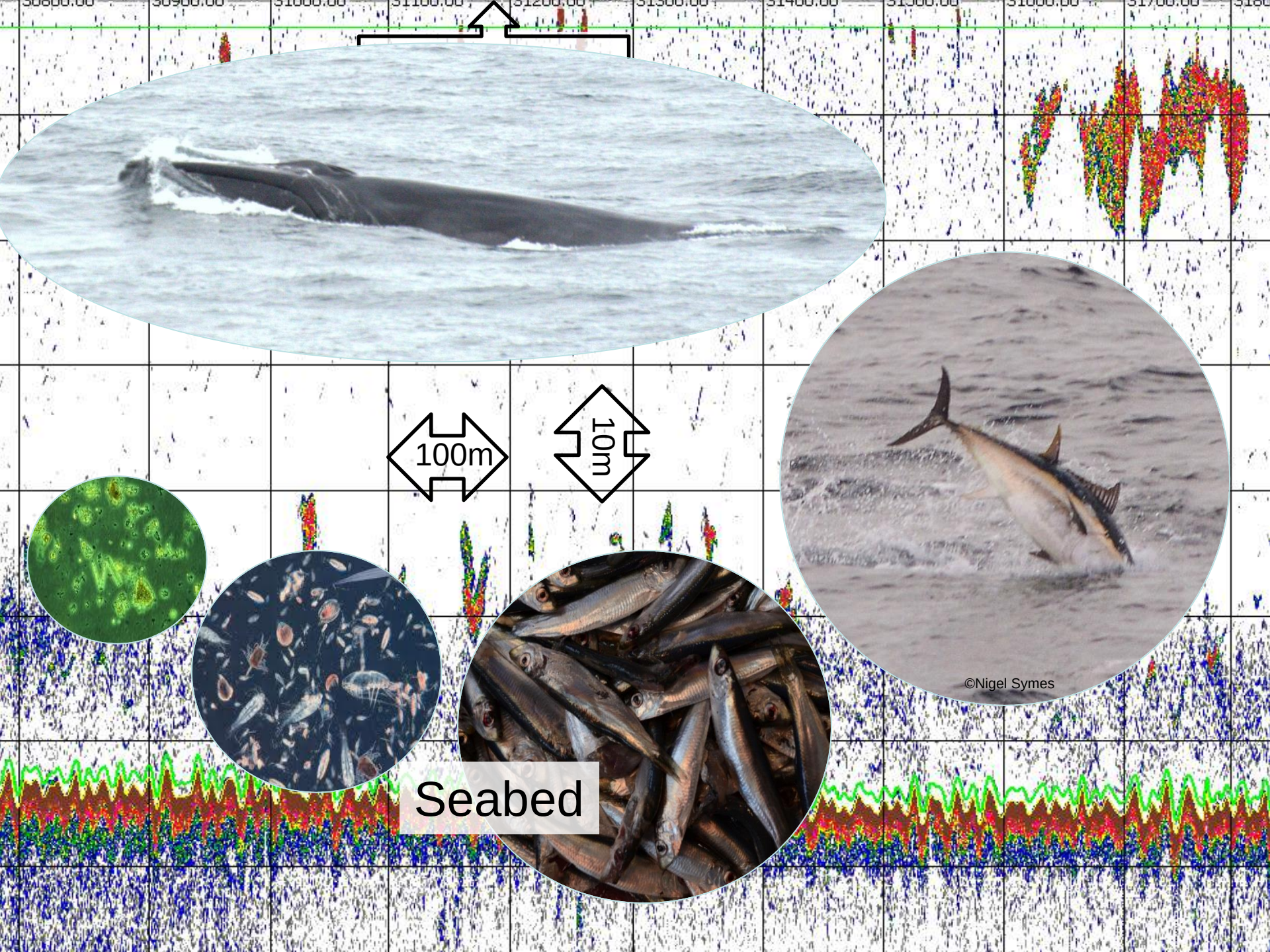
Ichthyoplankton – sardine spawning



Top predators: Balearic shearwater

- Critically endangered
- Survey: Overwinter in Bristol Channel
- Collaboration Marinelife, Natural England

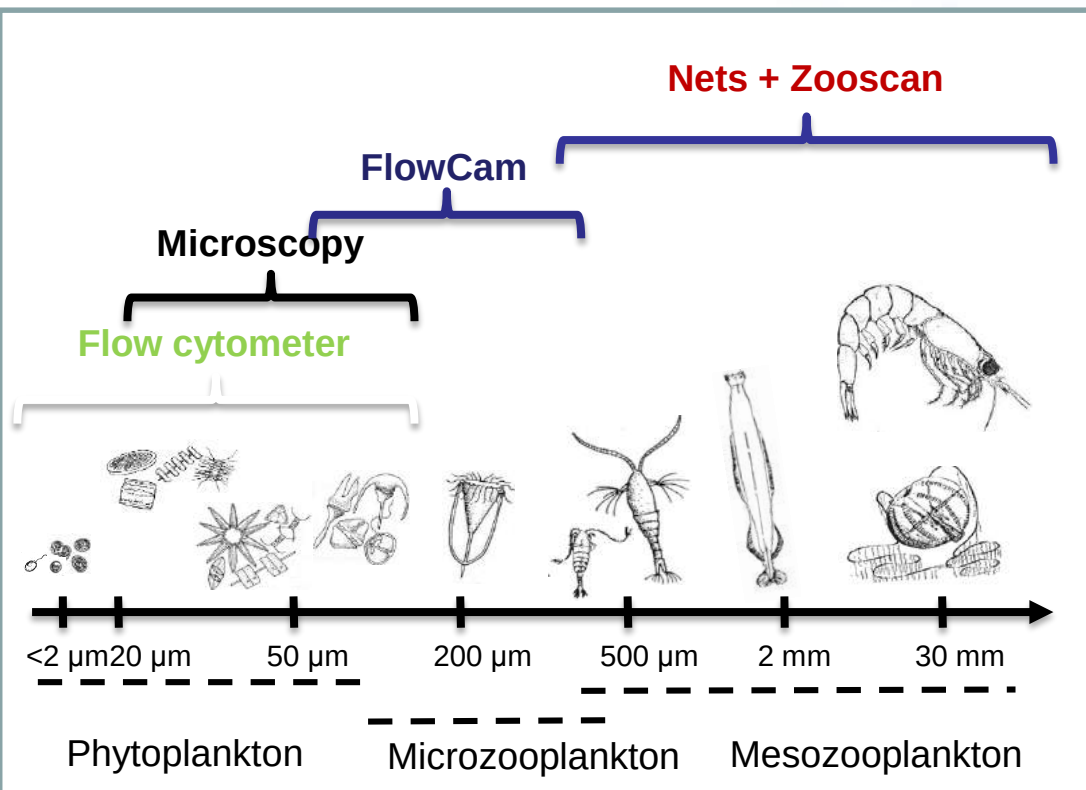




Seabed

Application Peltic data (beyond Poseidon)

- Poseidon
 - Small pelagic fish (assessment)
 - Pelagic habitat/processes
 - Predator-prey
- Collaboration
 - Modelling (pelagic) size spectra
 - Parameterise Ecopath/Ecospace models





Centre for Environment
Fisheries & Aquaculture
Science

Thank you



Department
for Environment
Food & Rural Affairs



Gary Taylor
Elisa Capuzzo
Jo Silva
Paul Bouch
David Righton
Peter Miller
Veronique Creach
Sophie Pitois
Kate Collingridge
Sven Kupschus
Michaela Schratzberger ...

John Pinnegar
Robert Thorpe
Chris Lynam
Tom Brereton
Rachel Davies
Nigel Symes
Alex Banks
Richard Humphreys
Matt Eade
James Pettigrew



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