

Environmental and policy context for water quality monitoring



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Environmental context - what makes marine and freshwater environments particularly important in terms of conservation and monitoring?

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Biodiversity of species and habitats



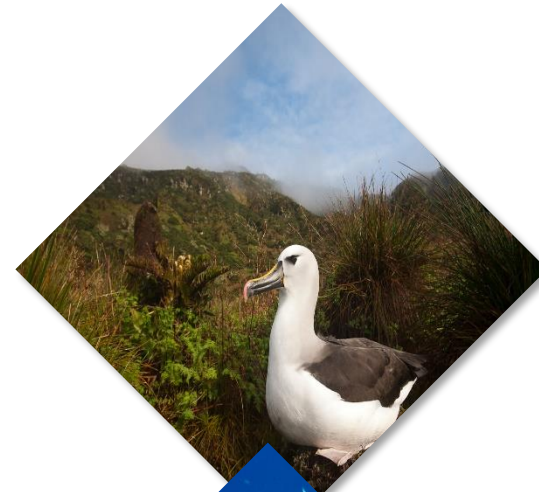
Environmental context - what makes marine and freshwater environments particularly important in terms of conservation and monitoring?

Biodiversity of species and habitats

Ecosystem services and natural capital (including offshore energy, food security and recreation - our dependence on aquatic ecosystems)

Natural capital

- Increasing awareness of the value of the natural environment in supporting economic growth and underpinning people's wellbeing
- Working with the UK's Caribbean and South Atlantic Overseas Territories to assess their natural capital
- Identifying risks such as human activities and natural disasters that could impact economies
- Using environmental evidence to advise economic policy-making and infrastructure planning



Managing human activities in the offshore





nion

Sport

Culture

Lifestyle

More ▾

icas Asia Australia Middle East Africa Inequality Global development

'We've crossed a threshold': has industrial farming contributed to Ireland's water crisis?

NUI Galway project
MacroMan to manage
macroalgal blooms, led by
Liam Morrison

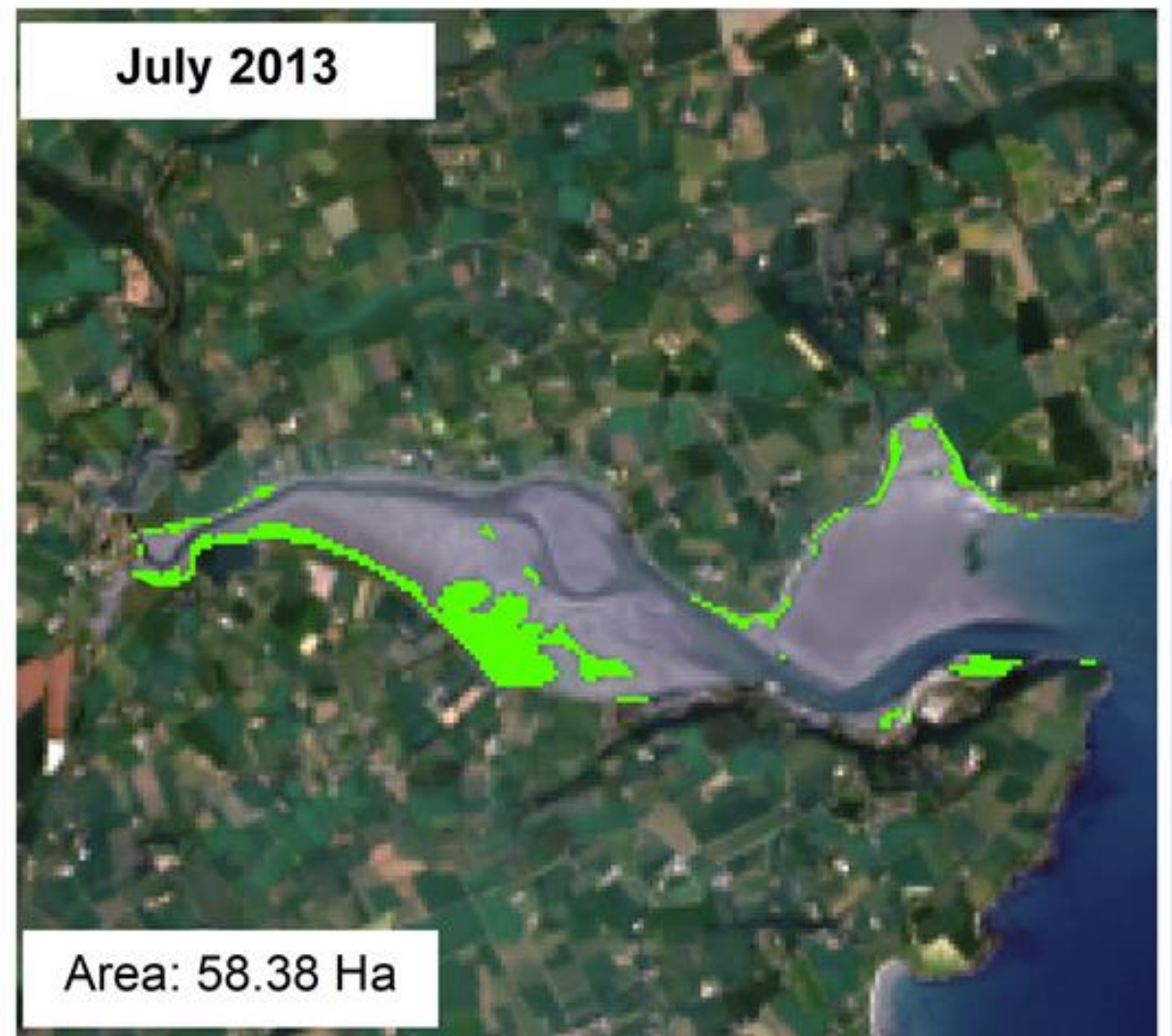
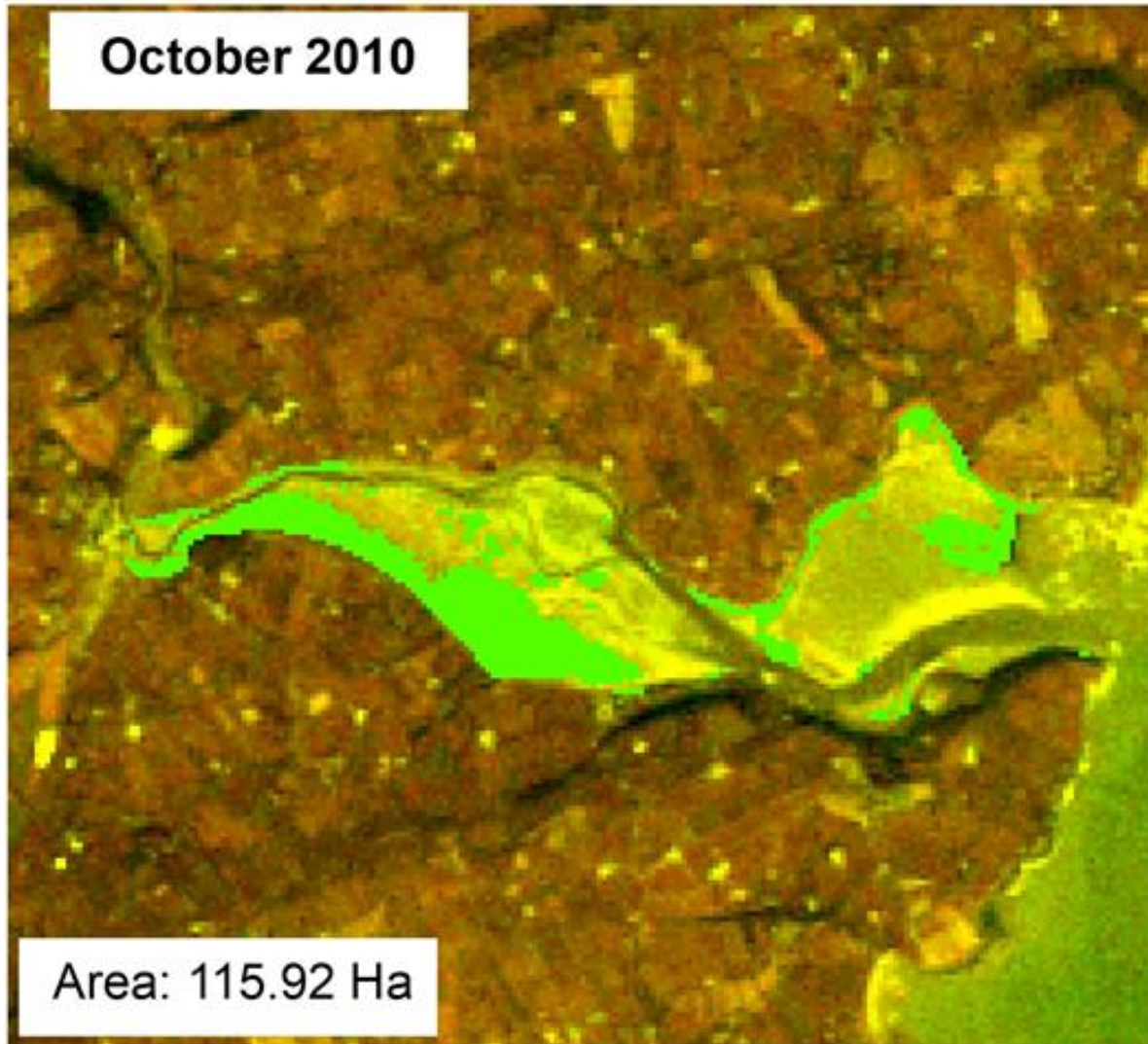


In Courtmacsherry, a picturesque seaside village in Co Cork, the emergence of foul-smelling green algae-enriched tides is strongly linked to intensive dairy expansion in the area, [according to scientists](#) at the National University of Ireland, Galway.

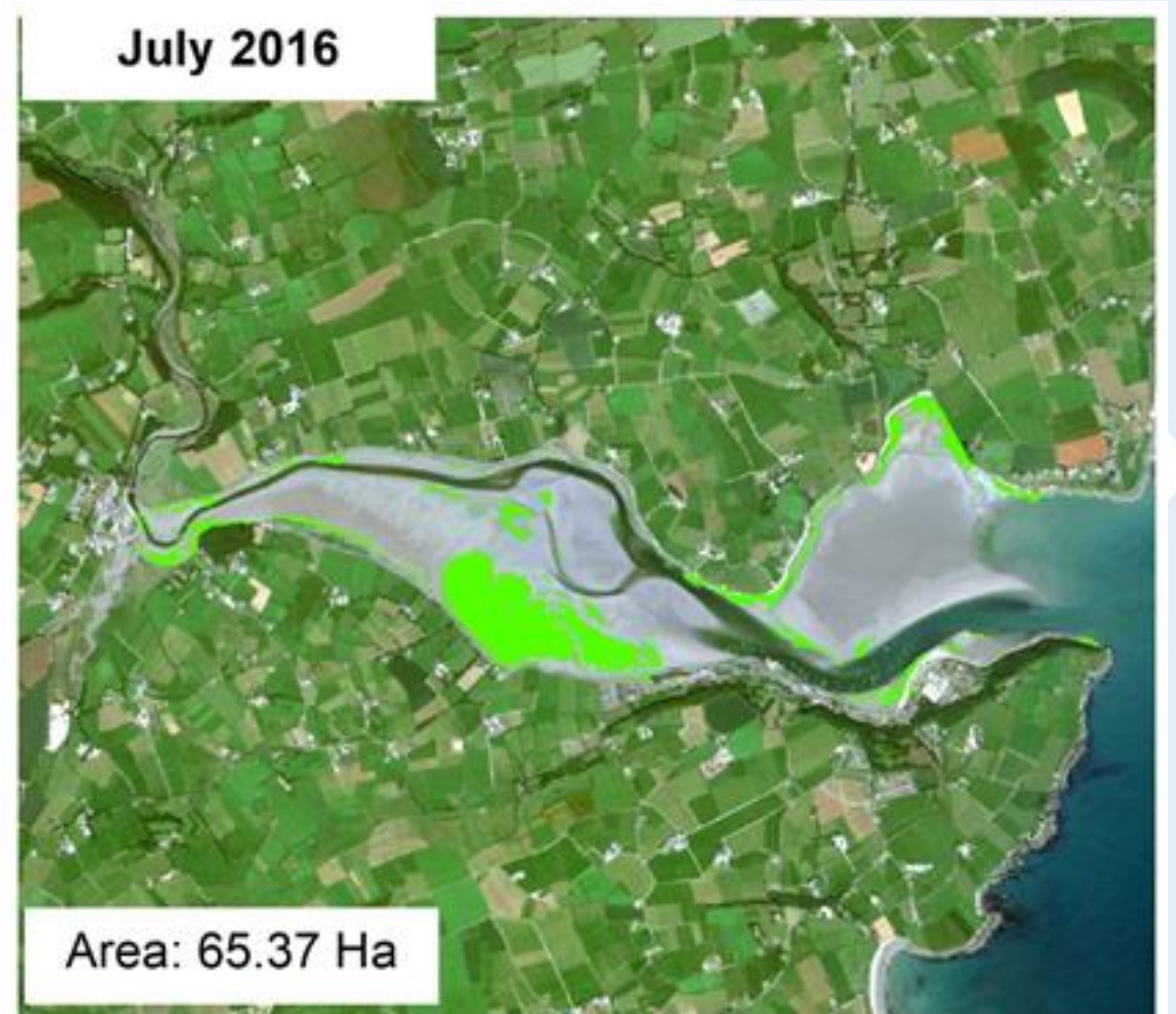
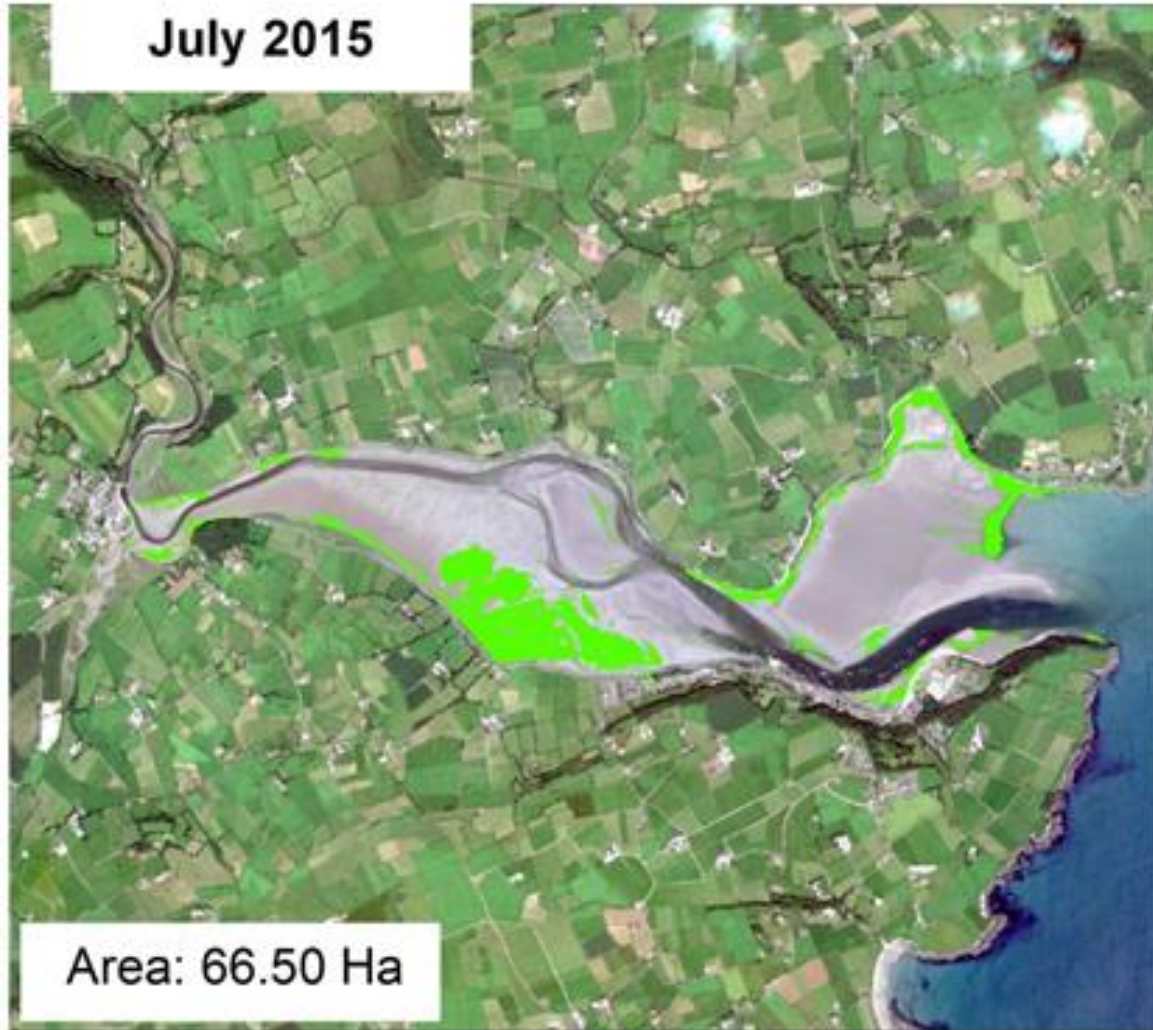
"Dairy herds have increased significantly," says one of the scientists, Liam Morrison. "We know that Courtmacsherry is one of the more intensively farmed areas in the country. We can measure the levels of nitrogen and phosphorus in the water and see that intensive agriculture is significantly contributing to the algal blooms in the estuary."

Morrison says that the same patterns can be seen in the nearby Blackwater estuary. "We need to work harder to keep nutrients out of the water to achieve a good balance between agronomic and environmental gains."

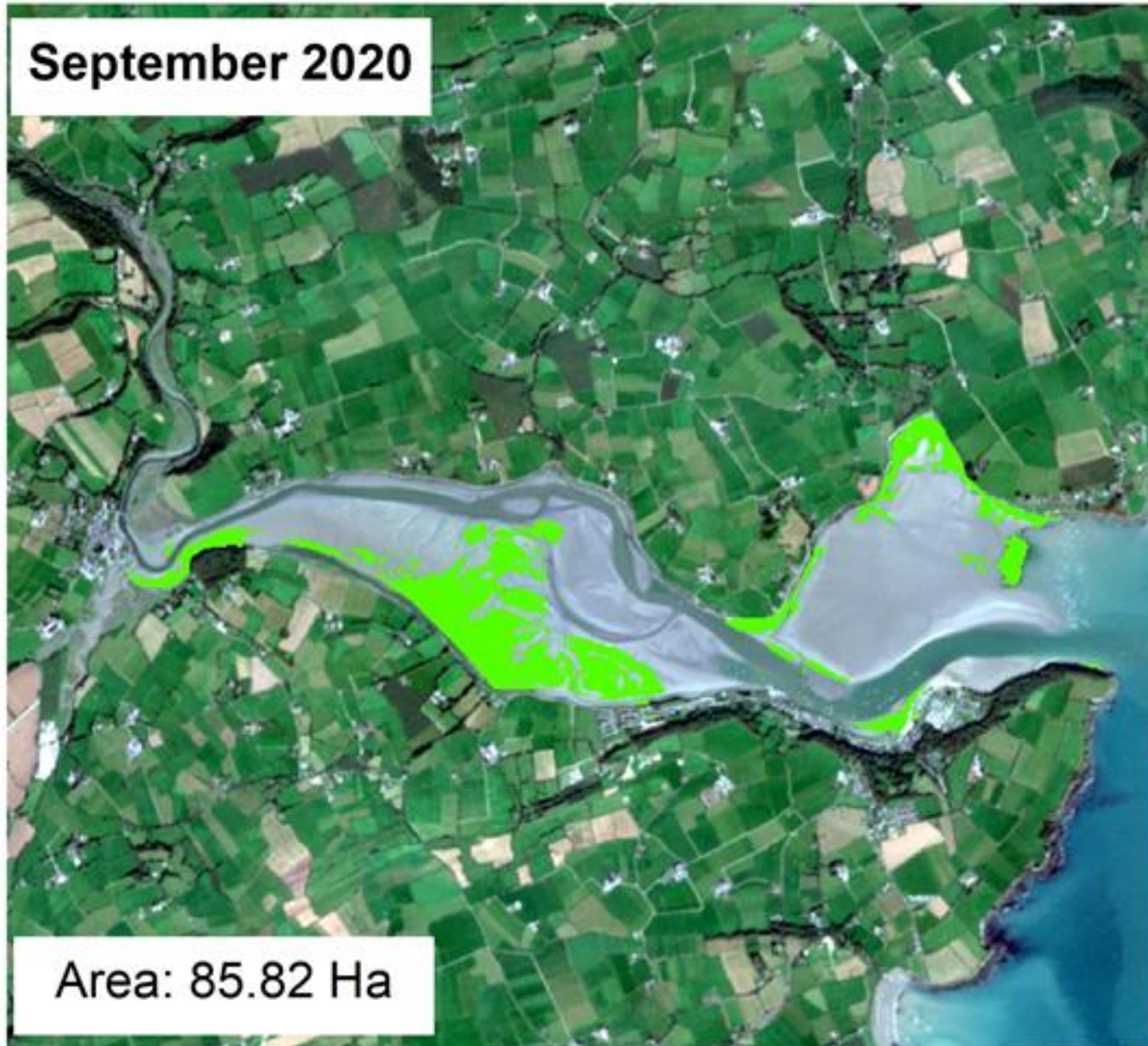
Landsat (5 TM, 8 ETM, 30 m)



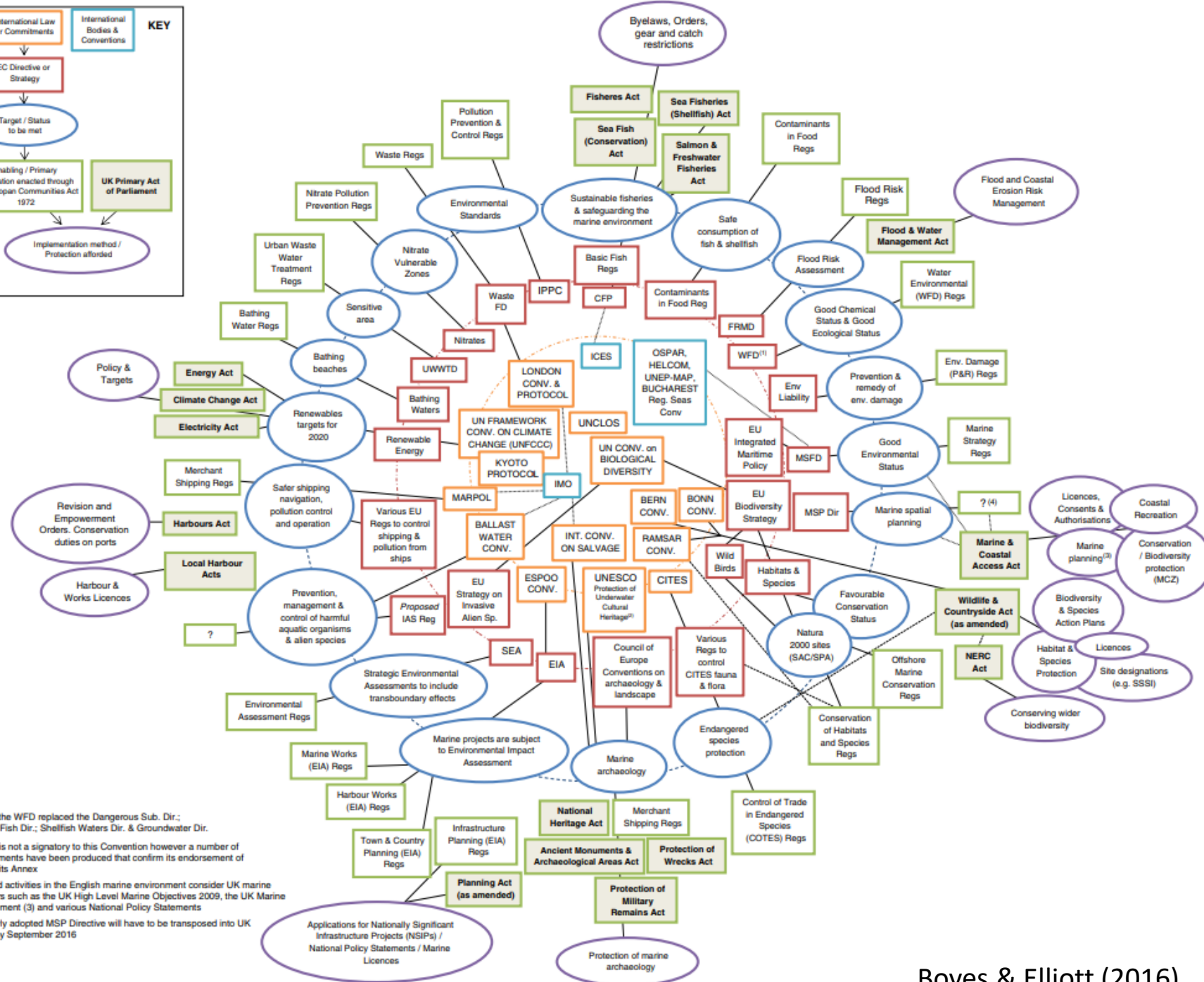
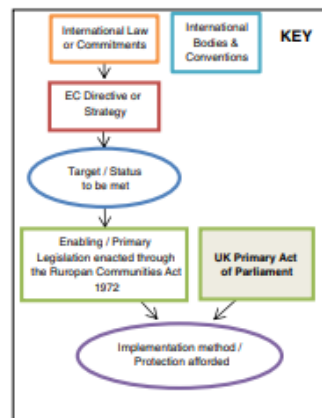
Planet (5 m and 3 m)



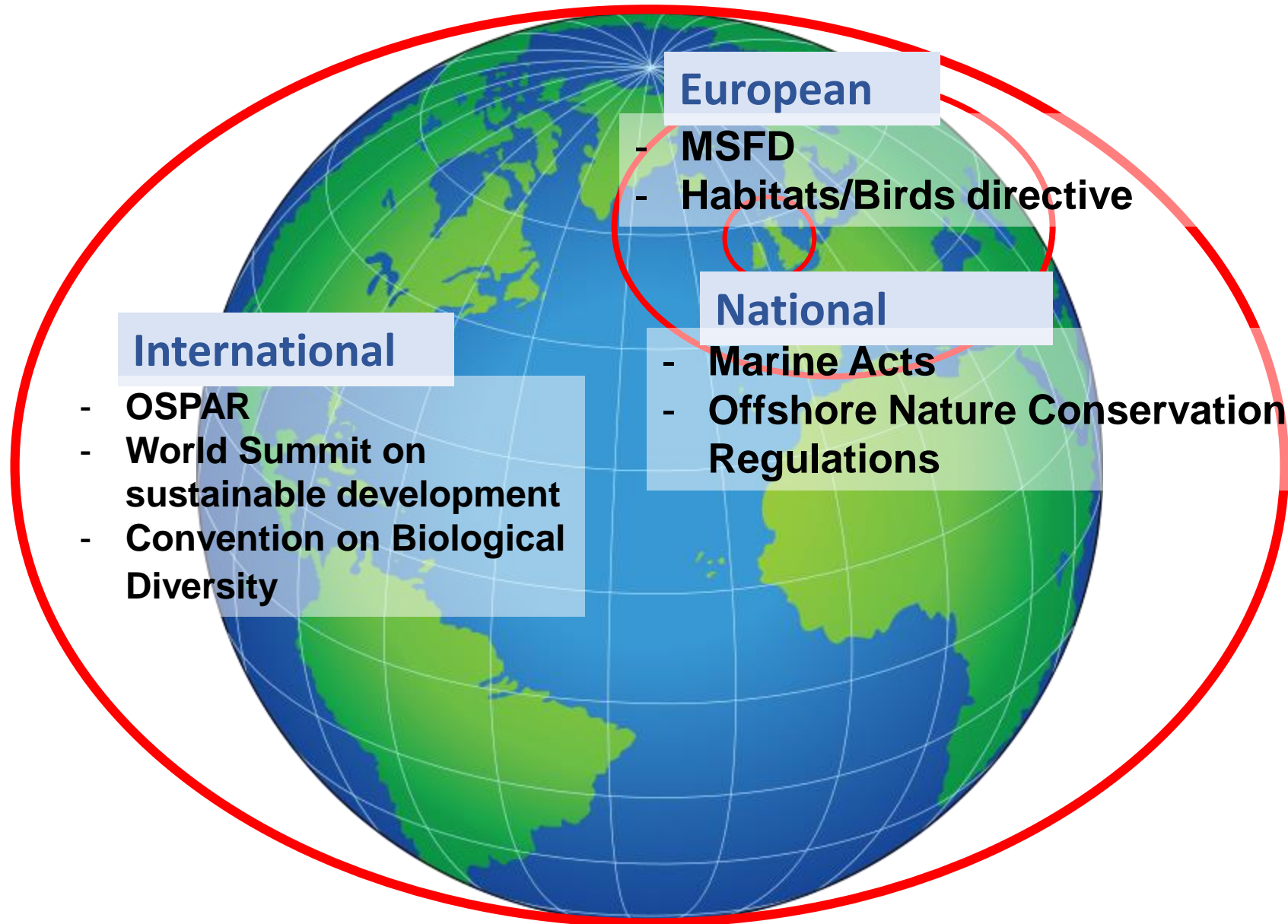
Sentinel 2 (10 m)



Policy Context – what is the relevant environmental legislation and policy for water quality monitoring, with a particular focus on UK and overseas territories and JNCC's remit



A commitment at a range of scales

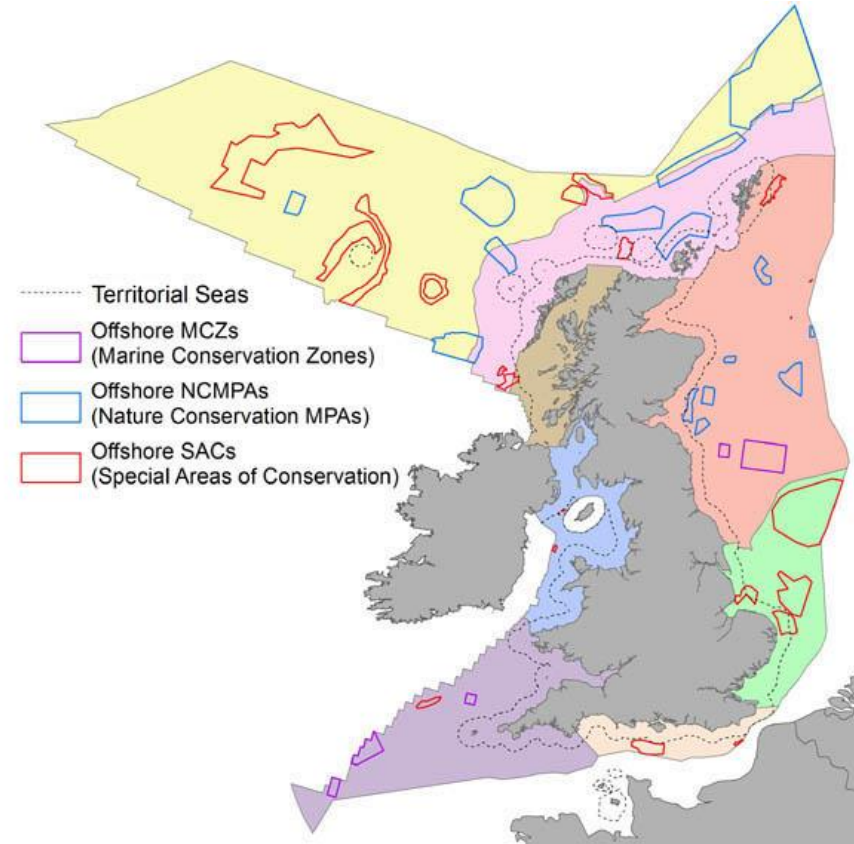


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Marine Protected Area designation, management and monitoring

Marine Protected Areas (MPAs) in UK offshore waters

- Providing scientific advice on identification of MPAs
 - Designation of more than 50 offshore sites
 - 23% of UK waters are now protected in MPAs
- Supporting the effective management of sites
- Developing products on marine protected sites

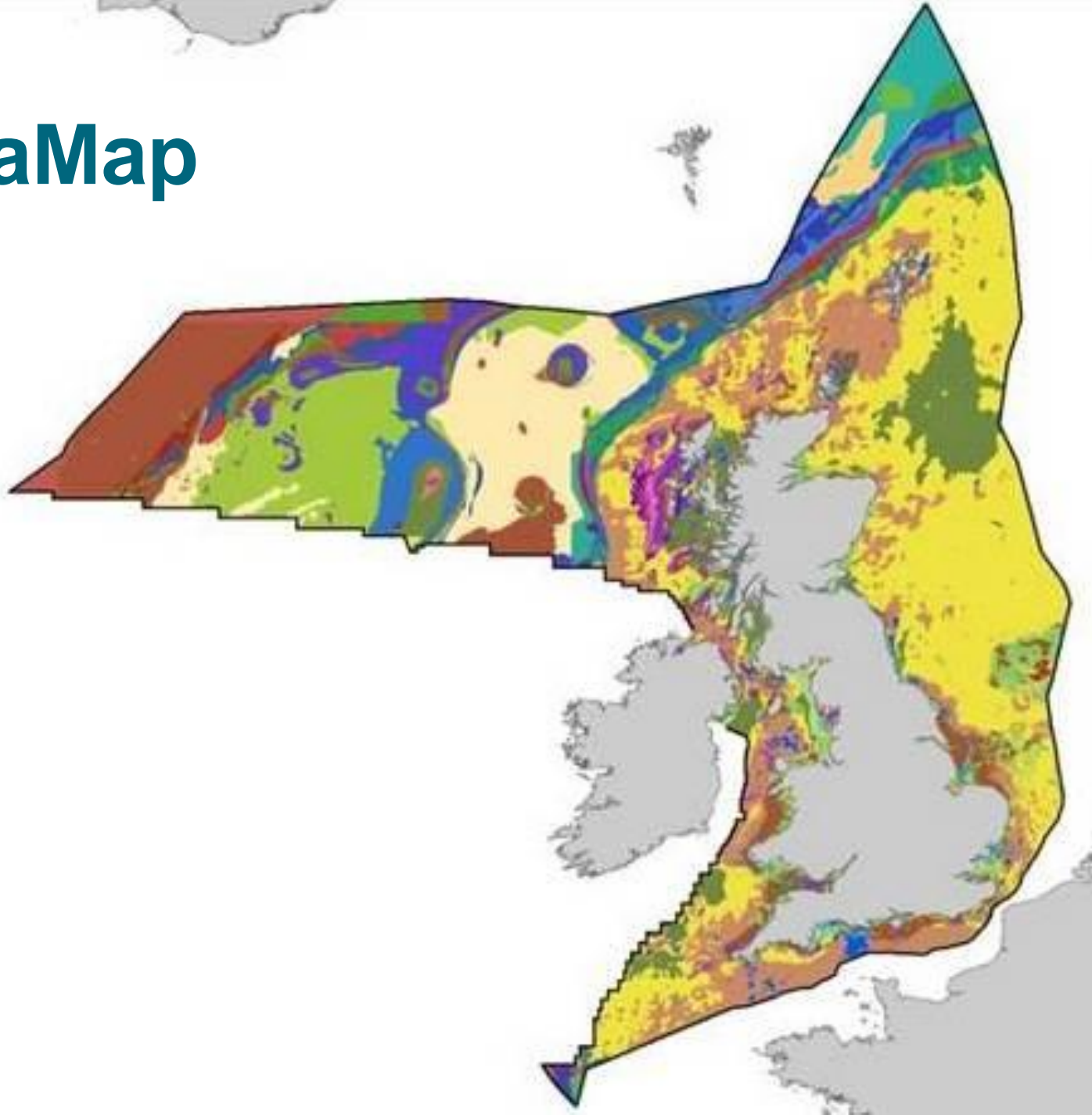


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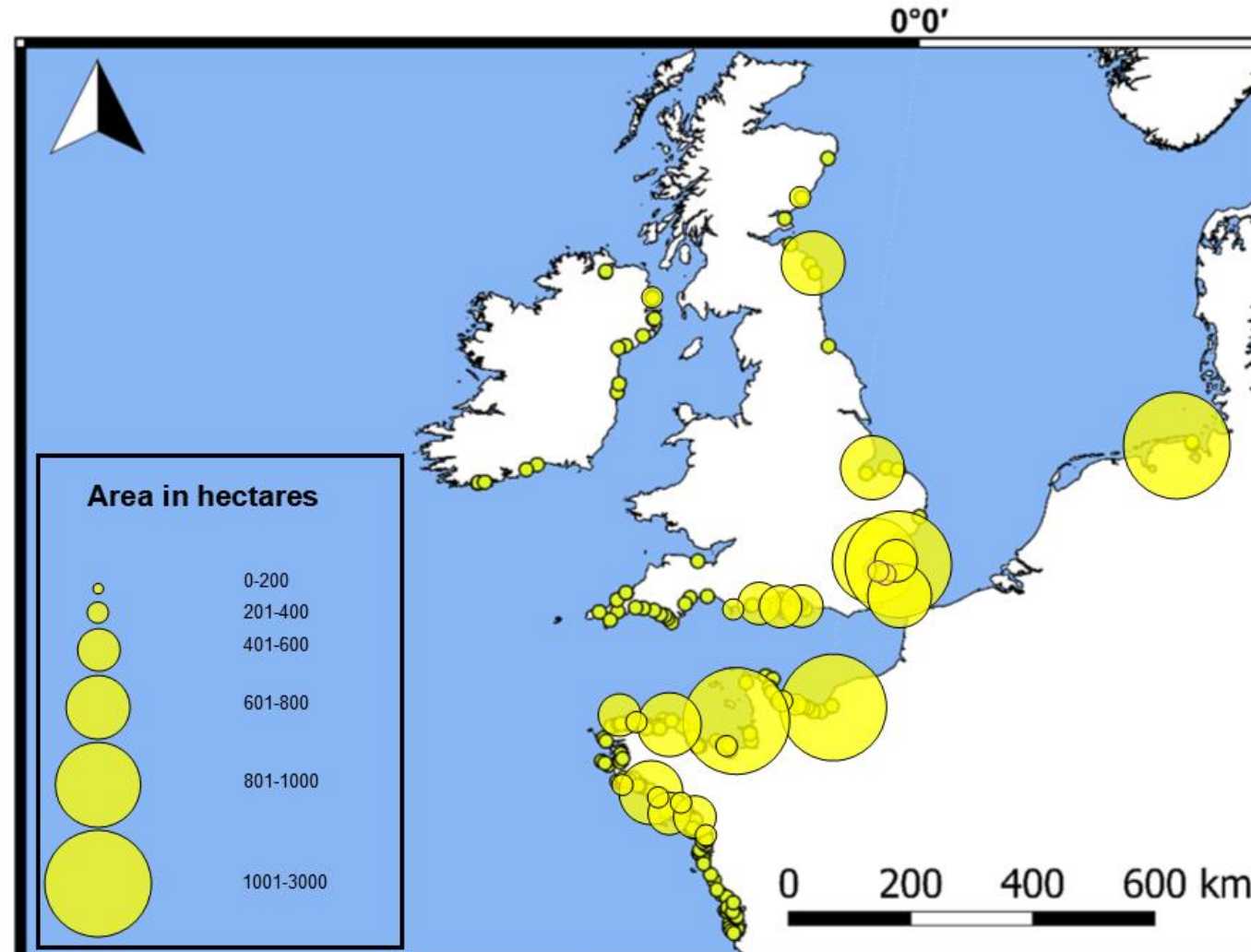
Marine spatial planning – licensing and regulation of activities, sustainable exploitation of resources, need for habitat maps e.g. UKSeaMap to underpin all the above.

UKSeaMap

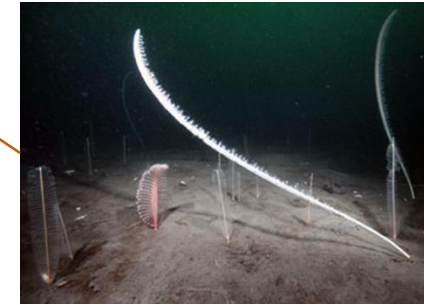
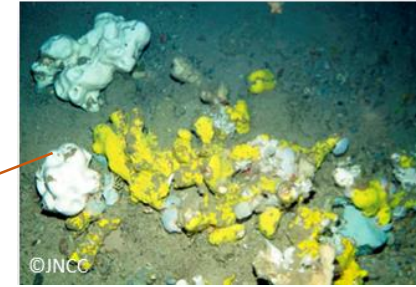
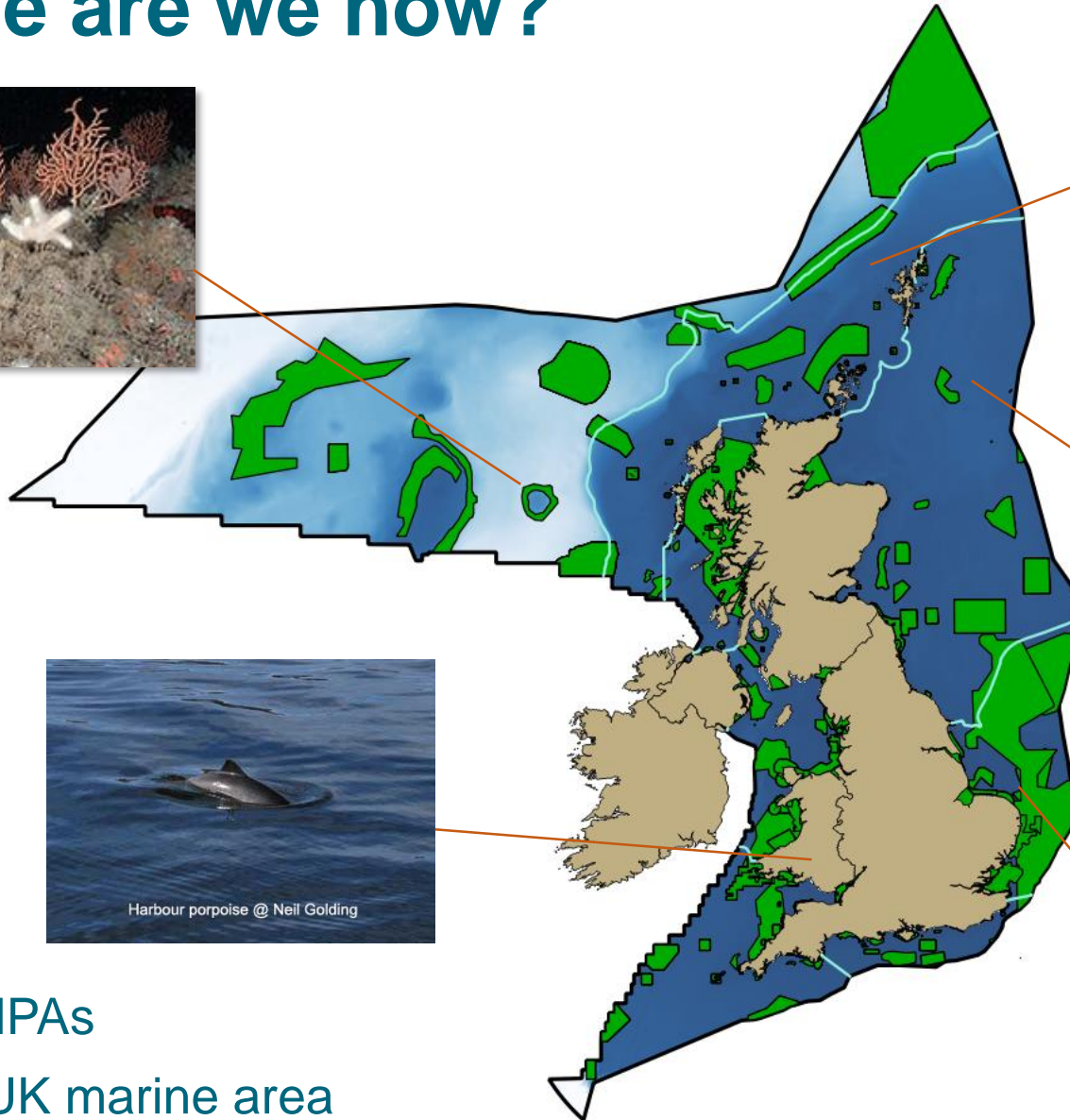
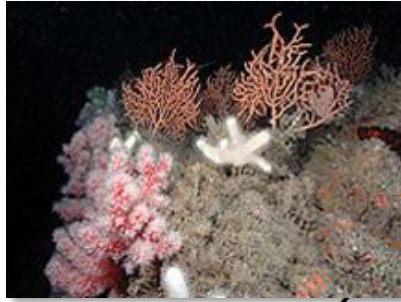


Challenges - what are the particular challenges of water quality monitoring?

The use of free to access satellite imagery to map the spatial extent of green macroalgal blooms in European waters: a valuable management toolkit for the implementation of the WFD



Where are we now?



- ❑ 584 MPAs
- ❑ 23% UK marine area
- ❑ Completing the network

Integration...



Innovation...



Fewer things, better.
For better advice,
understanding
& management.