Cranes, drains and net carbon gains

Dan Hoare, Broads Authority

Broads Authority

Westport 16/10/2019

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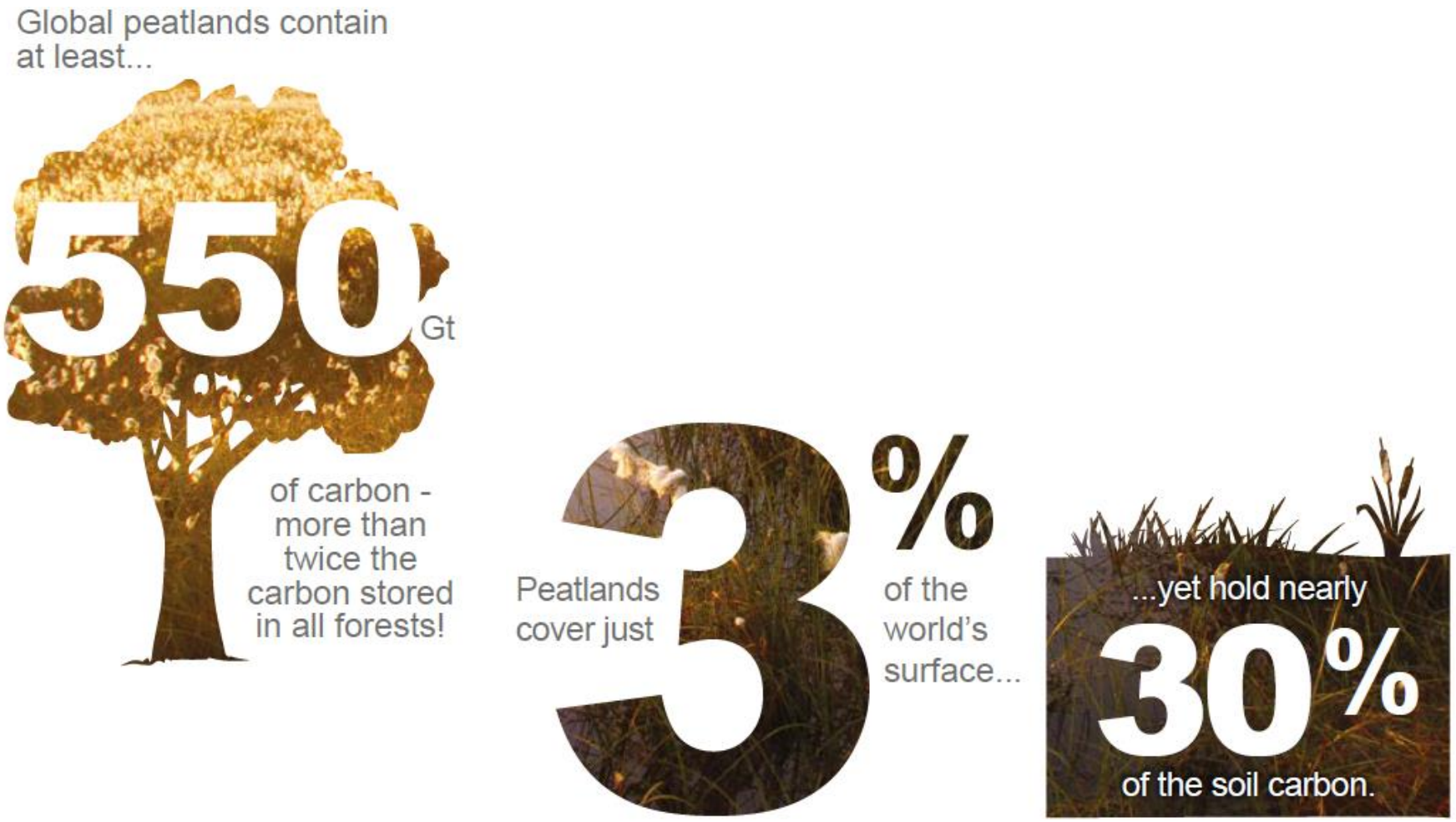


On the island of Britain, even if all the industry and agriculture were removed, would remain a carbon emitter due to the level of peat drainage.

The woodlands, fields and pristine wetlands do not absorb enough carbon to offset the emissions caused by drainage and degradation of peatlands.

This was a key finding of the recently published UK Peatlands Inventory.

Evans *et al* (2019) Implementation of an Emissions Inventory for UK Peatlands

Creating A New Approach to Peatland Ecosystems

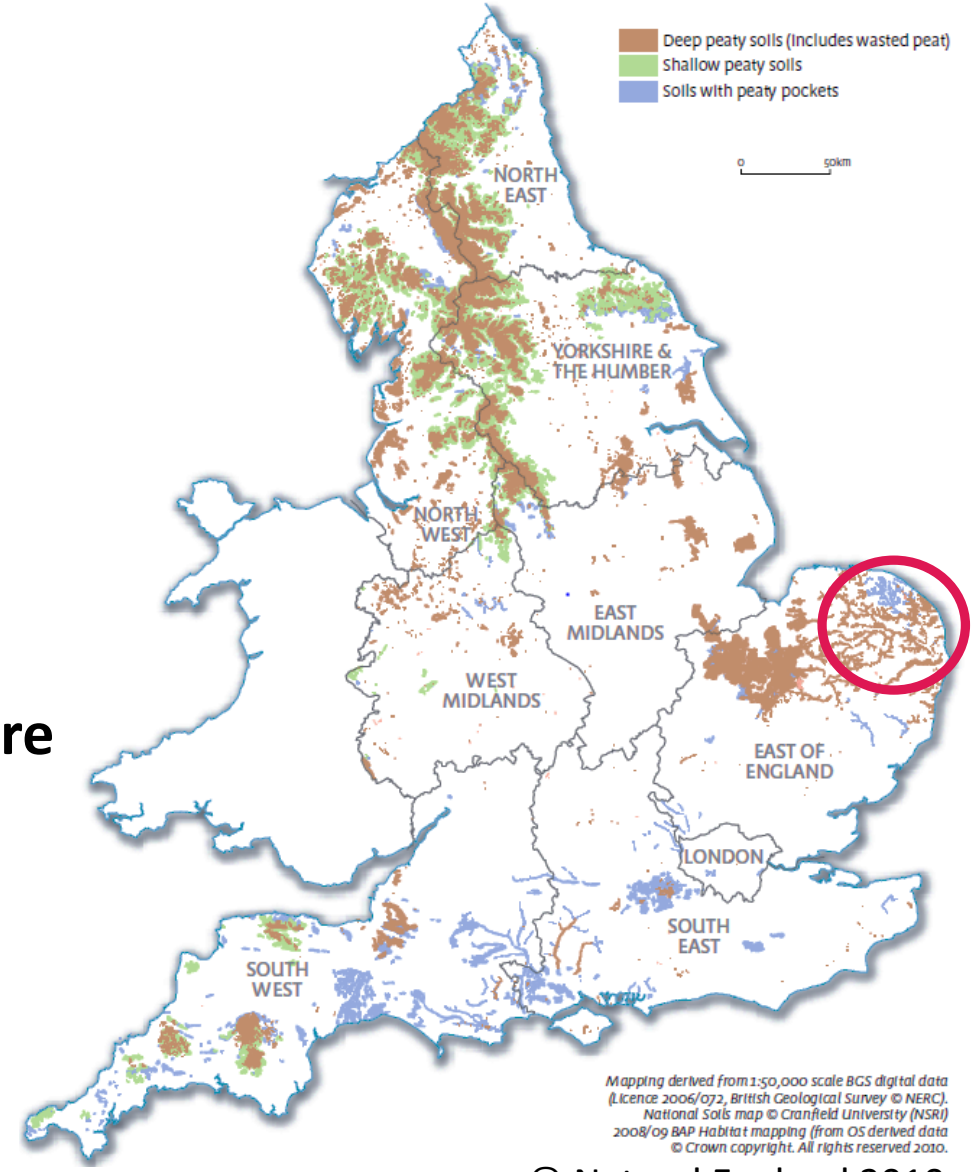
Total Budget - €5.5 million

Broads Authority - €1.5 million

CANAPE aims

Create resilient & integrated peatland systems

A sustainable & marketable future for peatlands



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Broads National Park


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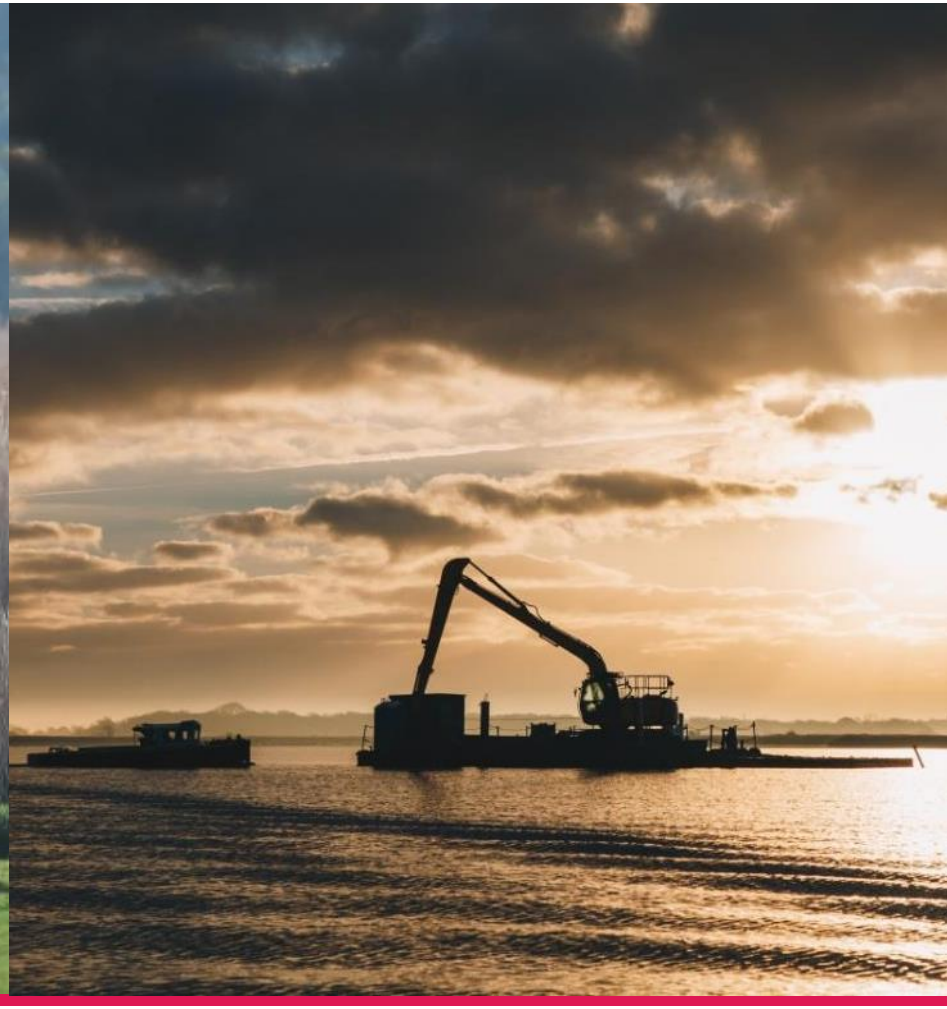

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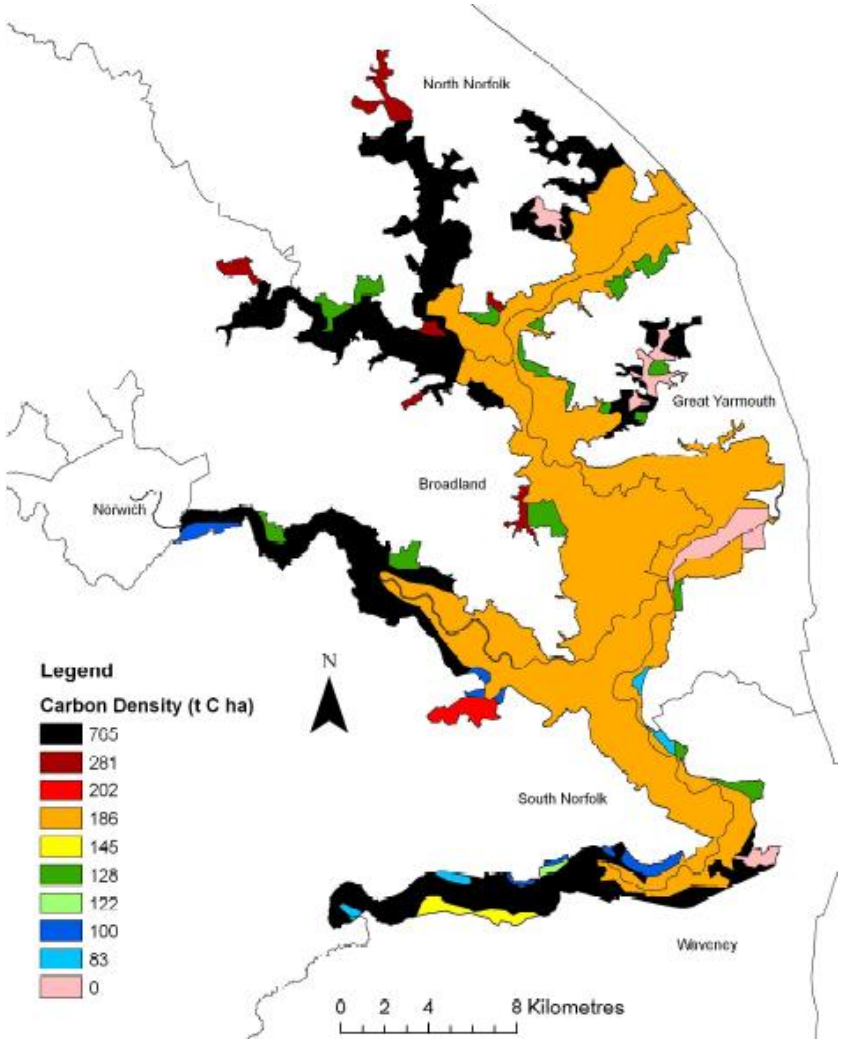
CANAPE project outputs

- 95 ha of lowland peatland restoration projects
- 3 lakes and 4 bogs included
- 6 wetland “products” trialled for marketing
- 1,640 tons of CO_2 saved per year, after project completion
- 228,600 additional cubic metres of water storage

Peat baseline for the Broads

- Need for accurate soil maps to identify priority peat resource areas
- Old maps don't take into account peat depth
- 705 tonnes C/ha is an underestimate for some areas



Create resilient & integrated peatland systems

Hickling Broad, Norfolk

1 hectare of reedswamp restoration

19,000 m^3 of sediment dredged from navigation channels

creation of a still water “refuge” area

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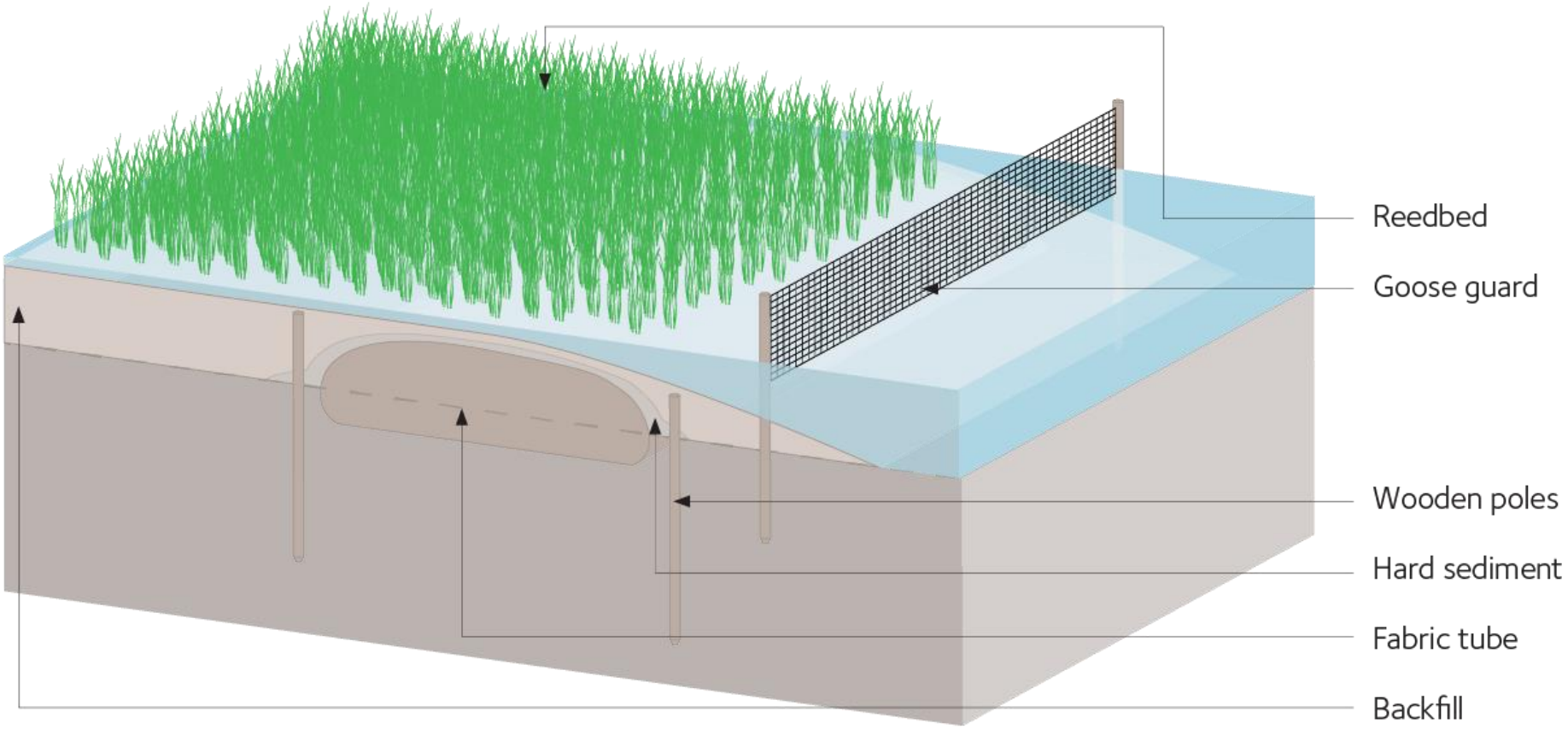
Restored reedbed design



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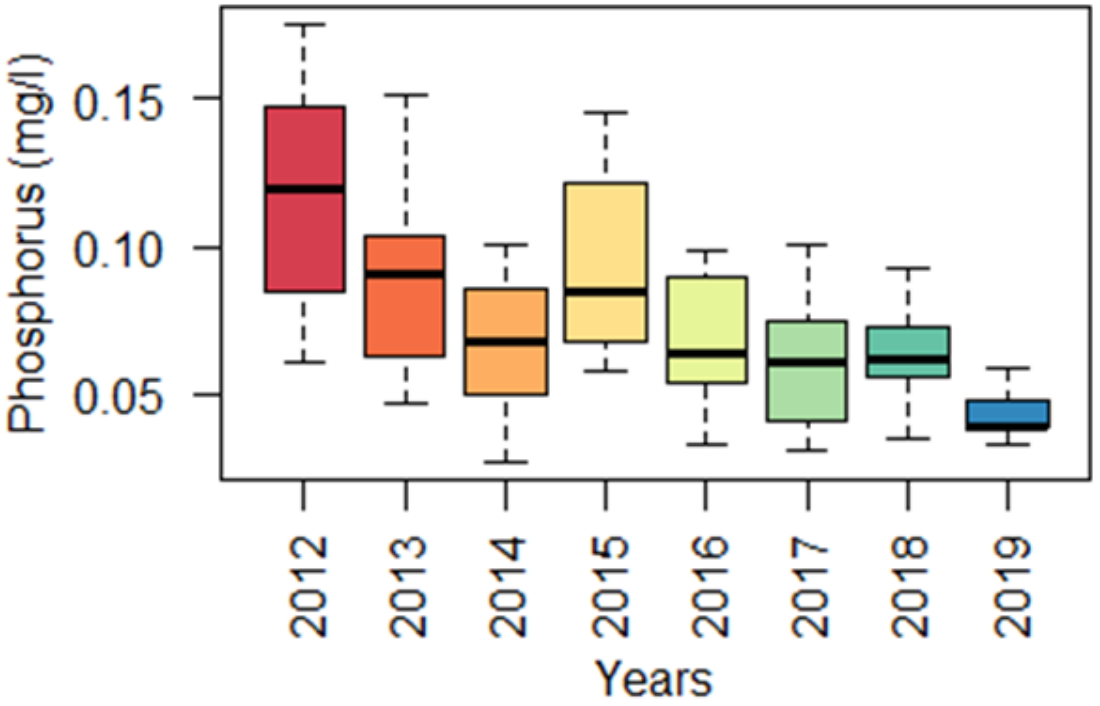
Restoration of Chara Bay

Water quality – benefits and risks

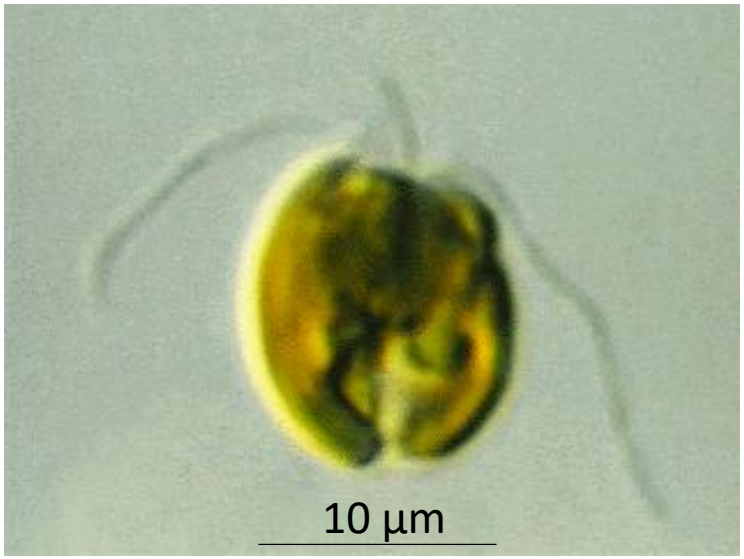
Trend of decreasing total phosphorus in Hickling Broad



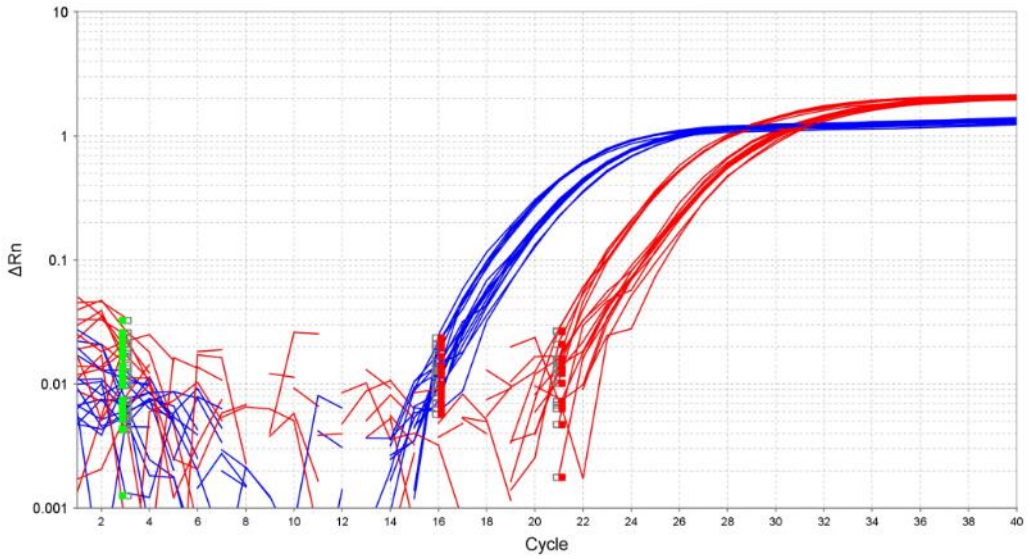
Environment Agency data

Water quality – benefits and risks

Presence of alga *Prymnesium parvum*, which is potentially toxic to fish



Prymnesium + Virus



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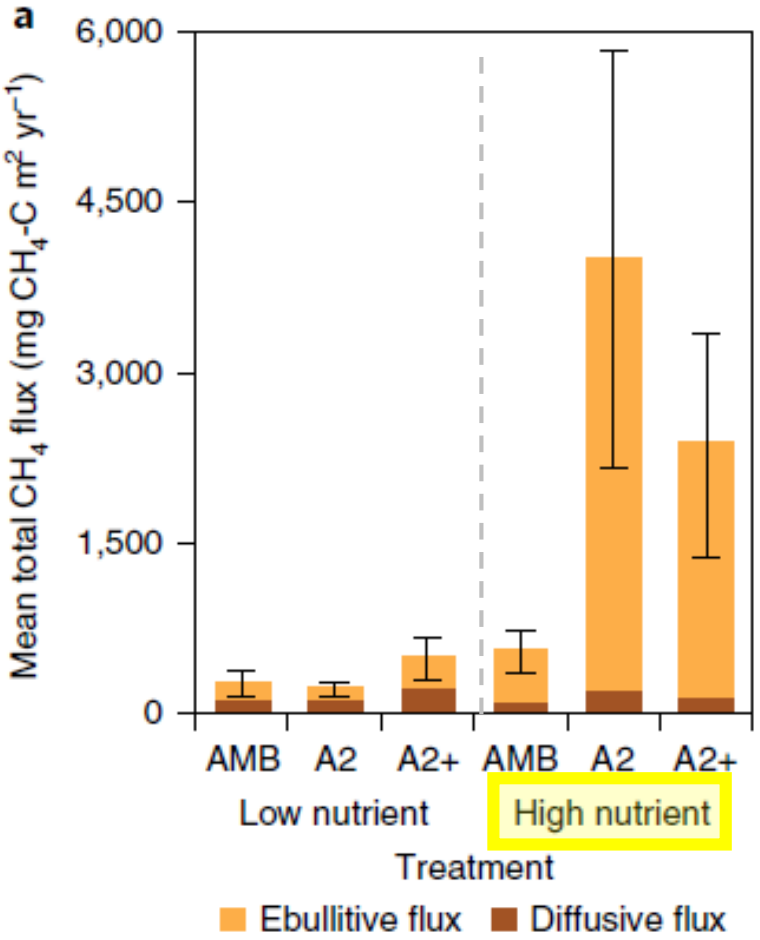
Water quality – benefits and risks



Methane ebullition with higher nutrients

AMB - Ambient temperature

A2 - plus 2-3 °C

A2+ - plus 4-5 °C

Davidson *et al* (2018) Nature Climate Change

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A sustainable & marketable future for peatlands

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Citizen Science and engagement

Continued work with 30 school pupils over 11 events

Broads Peatland Discovery Zone

420 people involved with public peat coring

Net carbon gain from CANAPE?

Main challenges/next steps

- How to quantify long term carbon sequestration in wetland habitats
- Setting a carbon storage baseline for study areas
- GHG reduction vs other benefits and values
  (biodiversity, recreation, economy, heritage, water quality)
- Decarbonisation or off-setting of emissions from environmental management activities

Thank you

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For more information please see

Broads Authority broads-authority.gov.uk

CANAPE northsearegion.eu/canape

IUCN National Committee United Kingdom Peatland Programme iucn-uk-peatlandprogramme.org