EastMe 2026
Water Quality

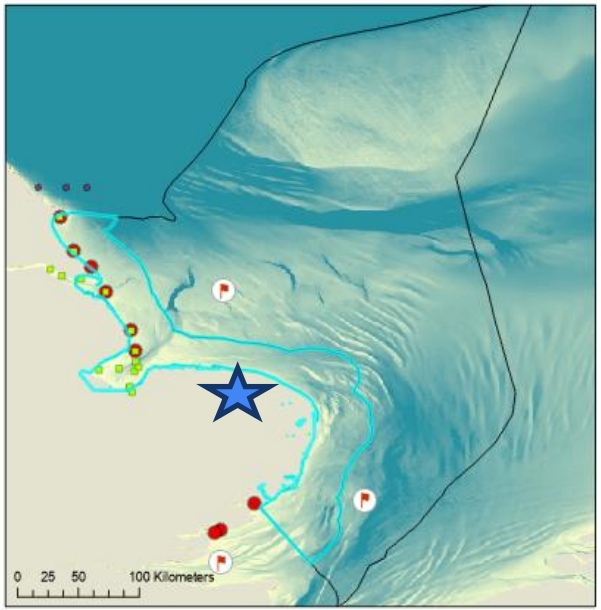
Rodney Forster, Elizabeth Beston, Mike Best, Ben Whitcombe

Water quality stations in EastMe

EA coastal stations (red) with –

- More than 10 years
- More than x samples per year

Salinity – 8 per year
Nutrients – 5 per year



EA plankton stations (green) with –

- More than 10 years
- More than x samples per year

Phytoplankton -

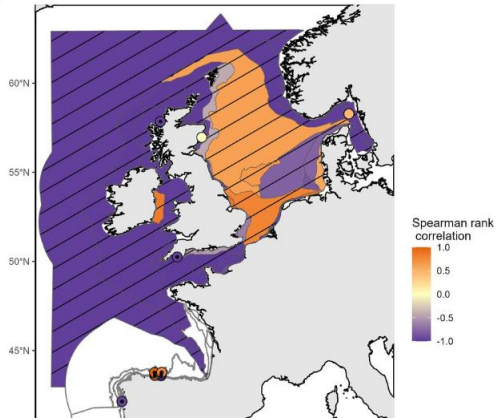
https://planktonproject.org.uk/

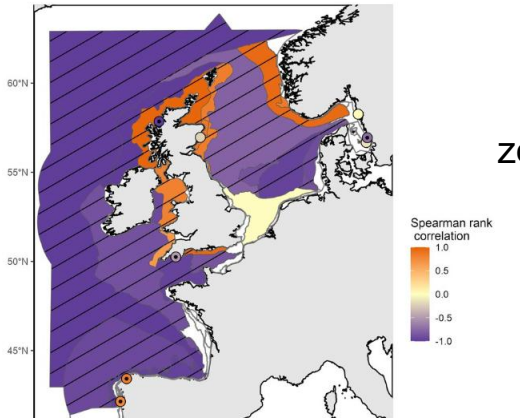
Defra Marine Strategy 2026 update

Pelagic Habitats (D1, D4)	The environmental status for pelagic habitats in UK seas remains uncertain due to the lack of a suitable model for assessing GES and low confidence in the results. All currently available evidence suggests, however, that pelagic habitats in UK seas are in “not good” status.

This assessment identified changes in phytoplankton biomass and zooplankton abundance at regional and local scales. Among the 64 COMP4 areas, significant changes were found in 39 assessment units for phytoplankton biomass (**Figure 1**) and in 22 assessment units for zooplankton abundance (**Figure 2**).

phytoplankton

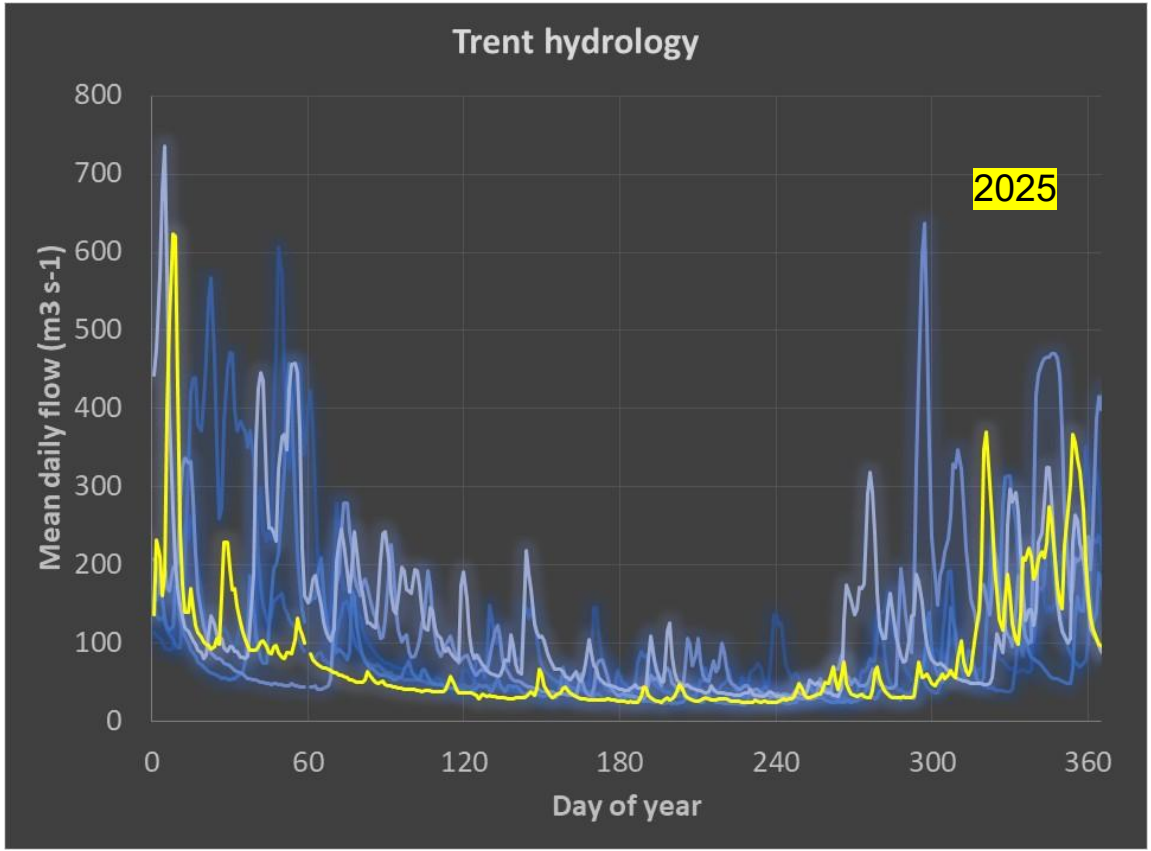


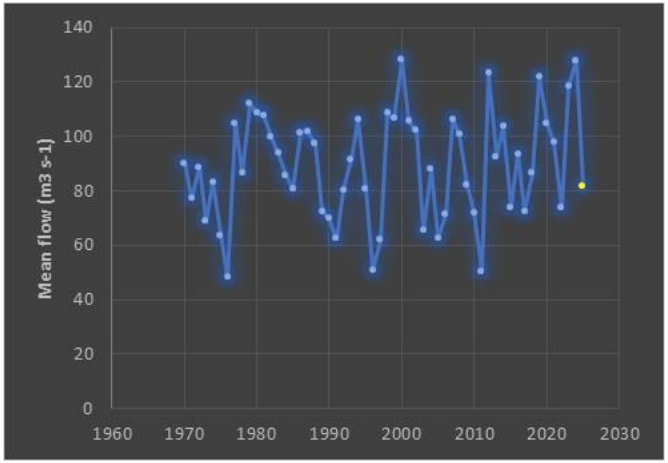


zooplankton

https://www.gov.uk/government/publications/marine-strategy-part-one-update

Trent run-off at North Markham

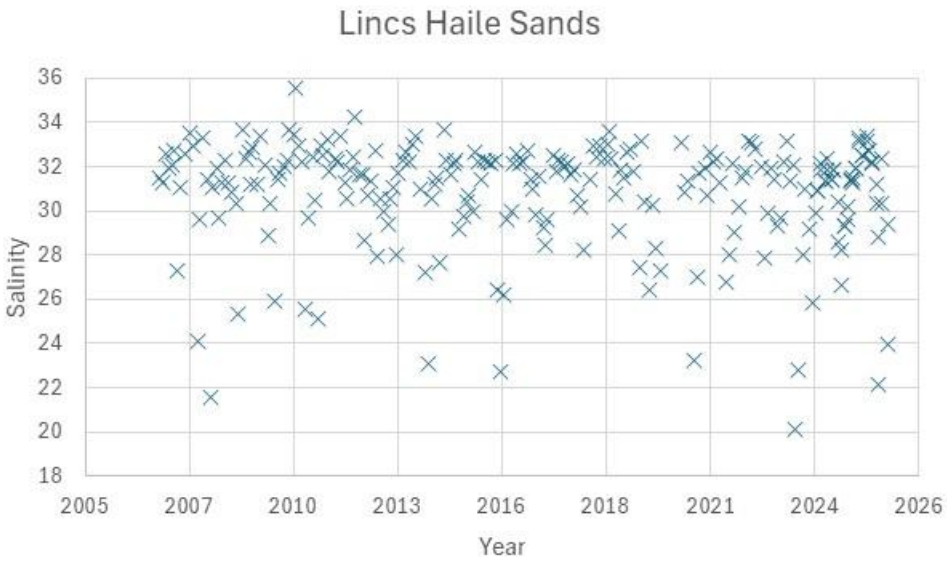




https://environment.data.gov.uk/hydrology/landing

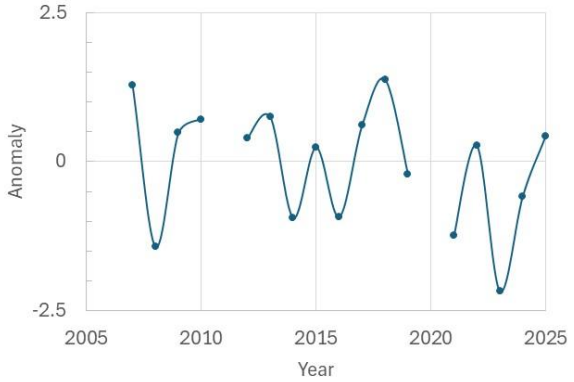
Method: standardised anomaly plots v long term average

Raw EA data



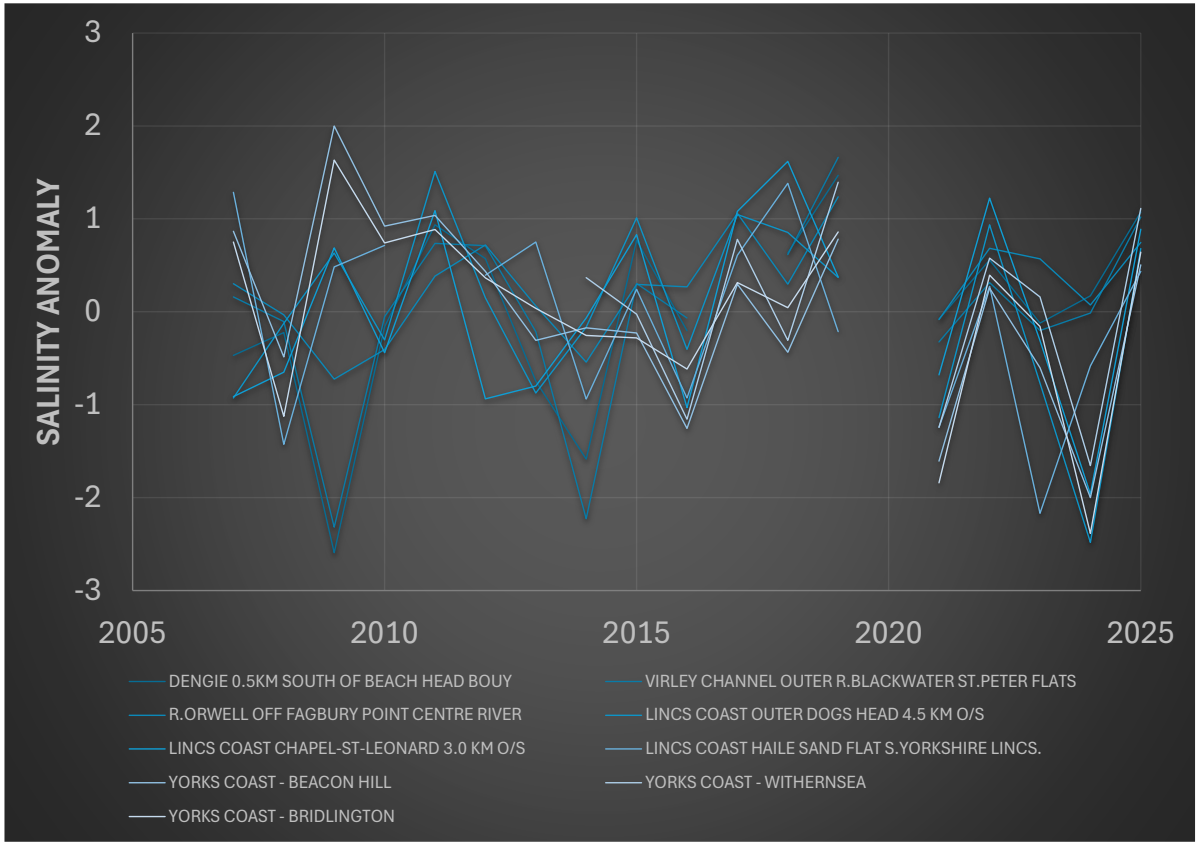
Annual anomaly:

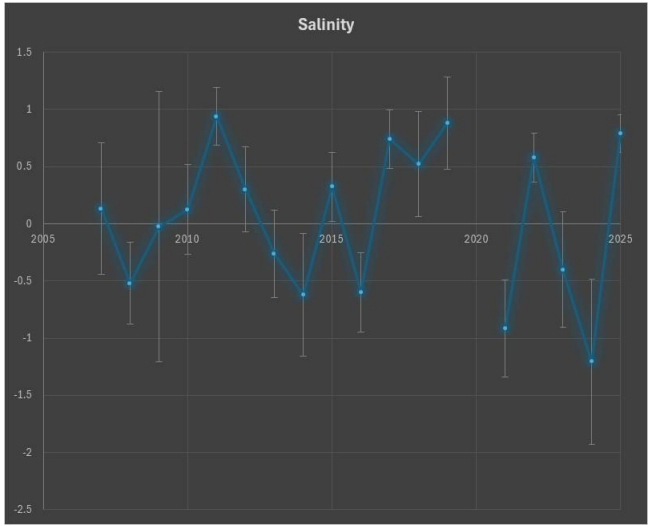
$$\frac{\text{(Year-average)-(long term average)}}{\text{(long-term st dev)}}$$



https://environment.data.gov.uk/water-quality

Salinity

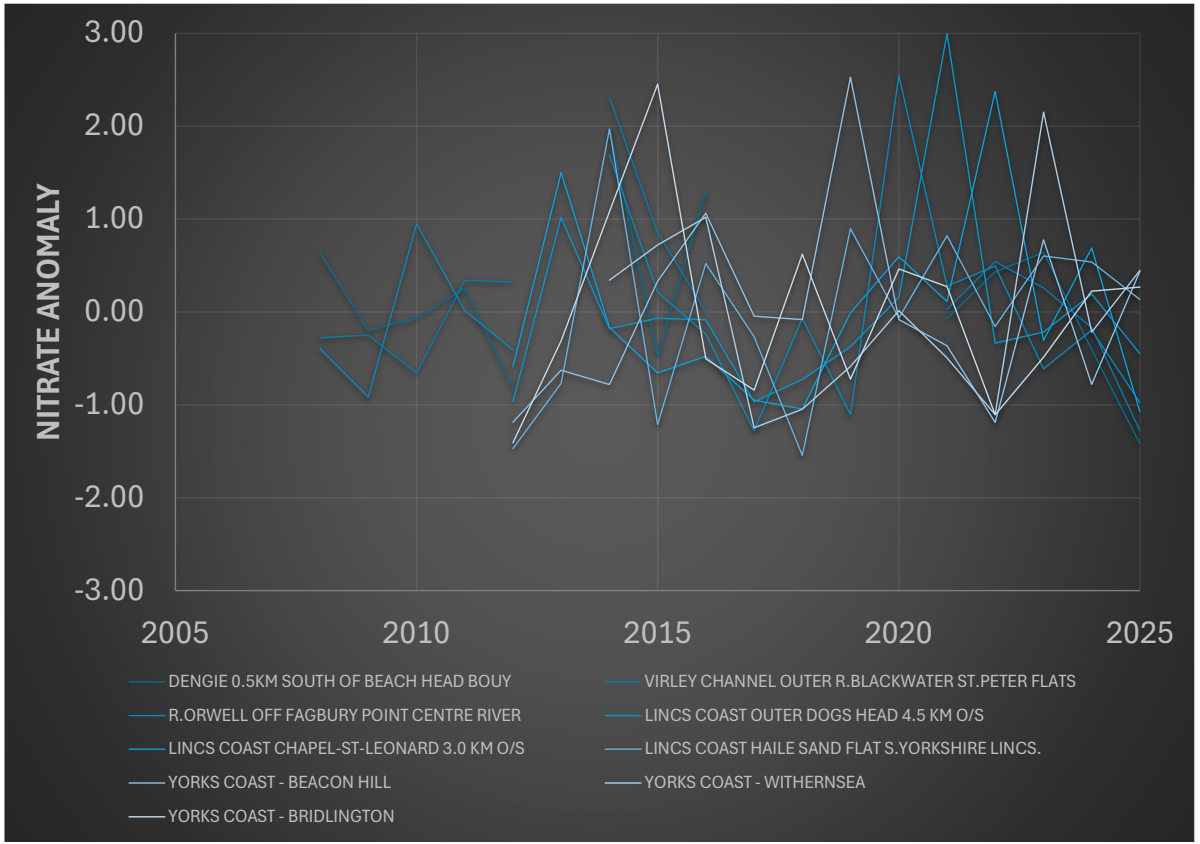


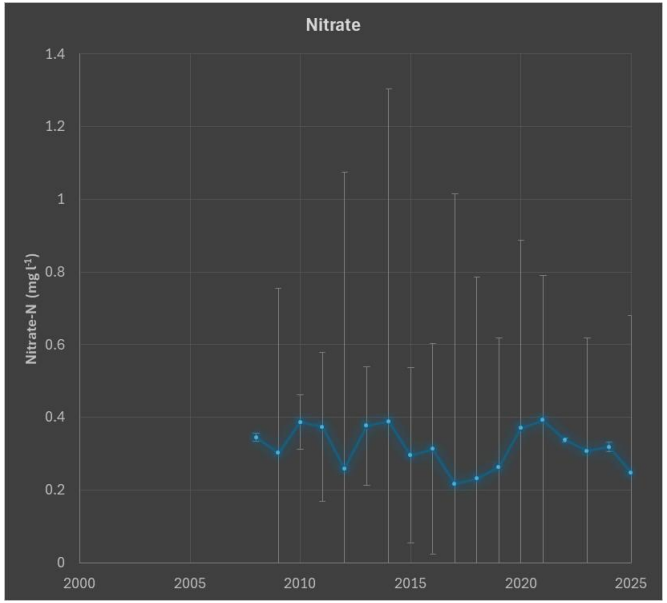


Co-variance in anomalies shows EastMe system-wide forcing from climate
2025 a high salinity year (low freshwater input)

https://environment.data.gov.uk/water-quality

Nitrate





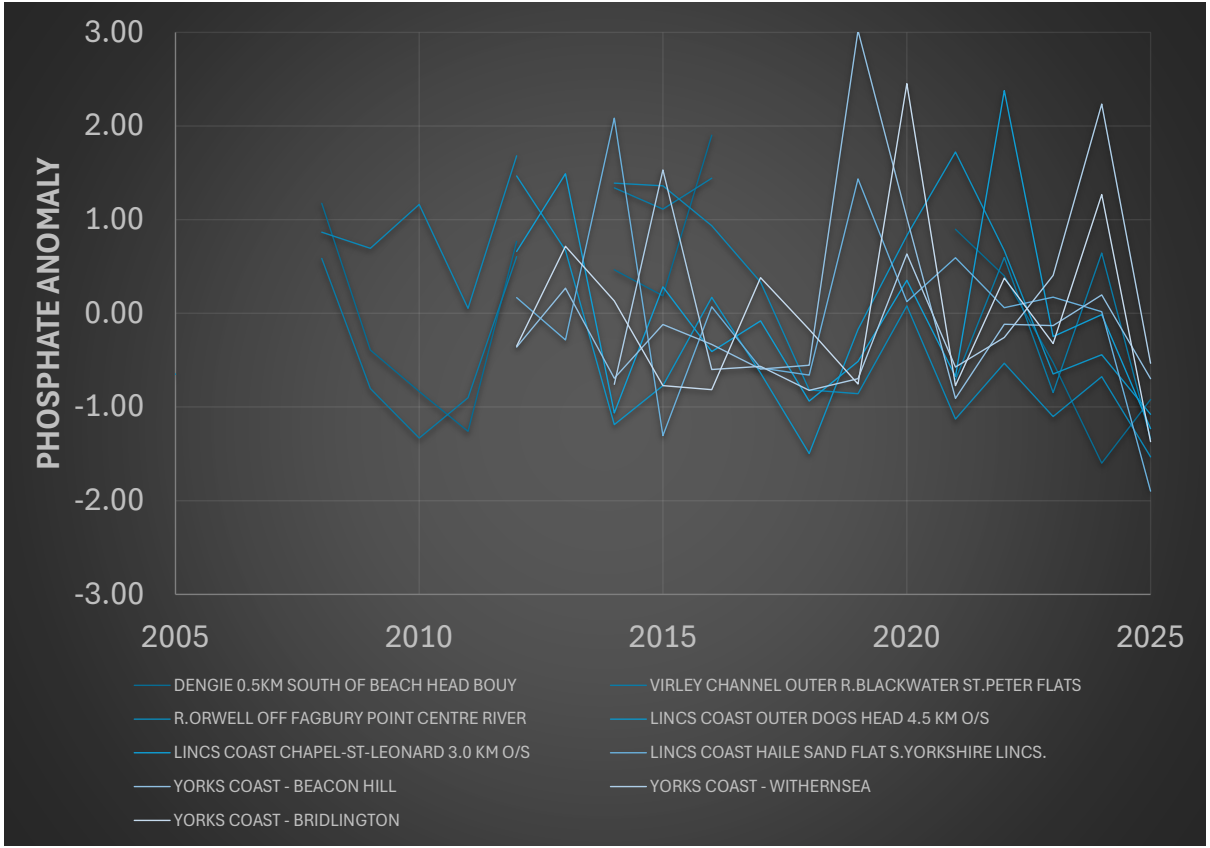
Some co-variance in anomalies

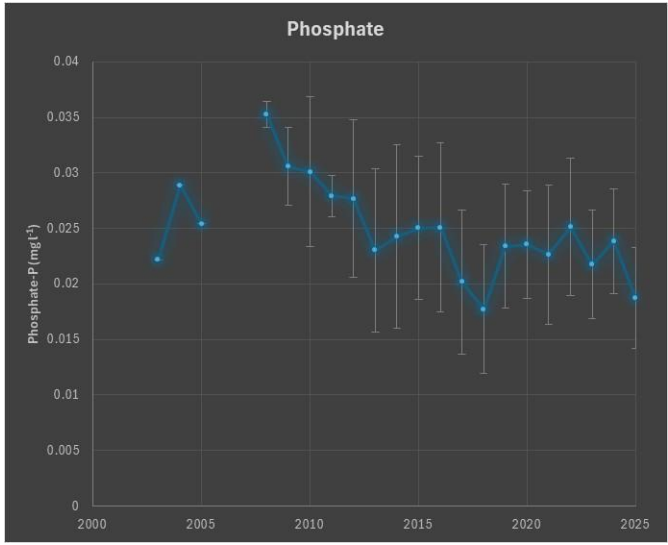
2025 a low nitrate year

Reflect changes in land-use?

https://environment.data.gov.uk/water-quality

Phosphate



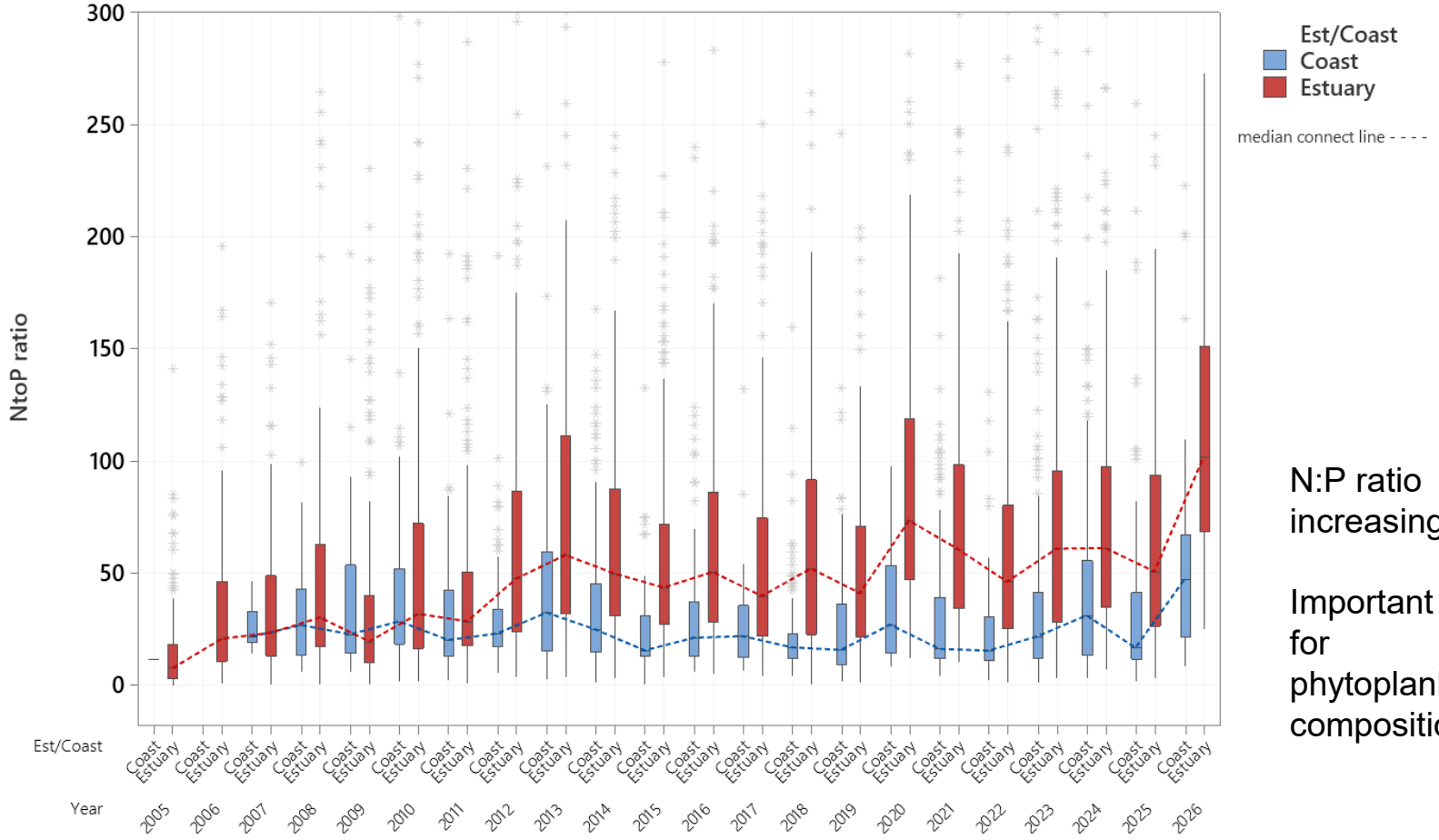


Decadal decrease in phosphate

2025 a low phosphate year

https://environment.data.gov.uk/water-quality

EASTME N to P ratio 2005 -2025



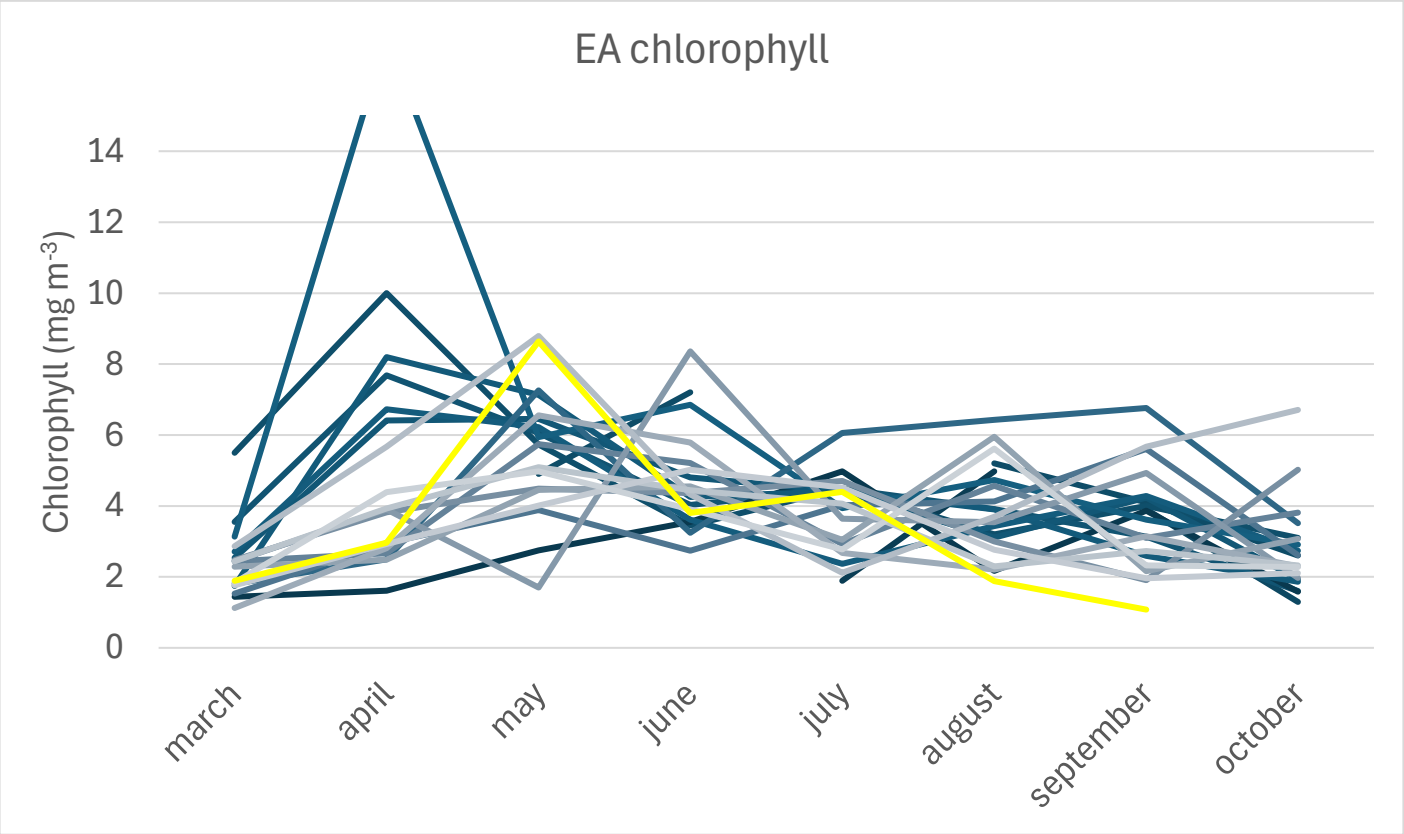
N:P ratio increasing

Important driver for phytoplankton composition

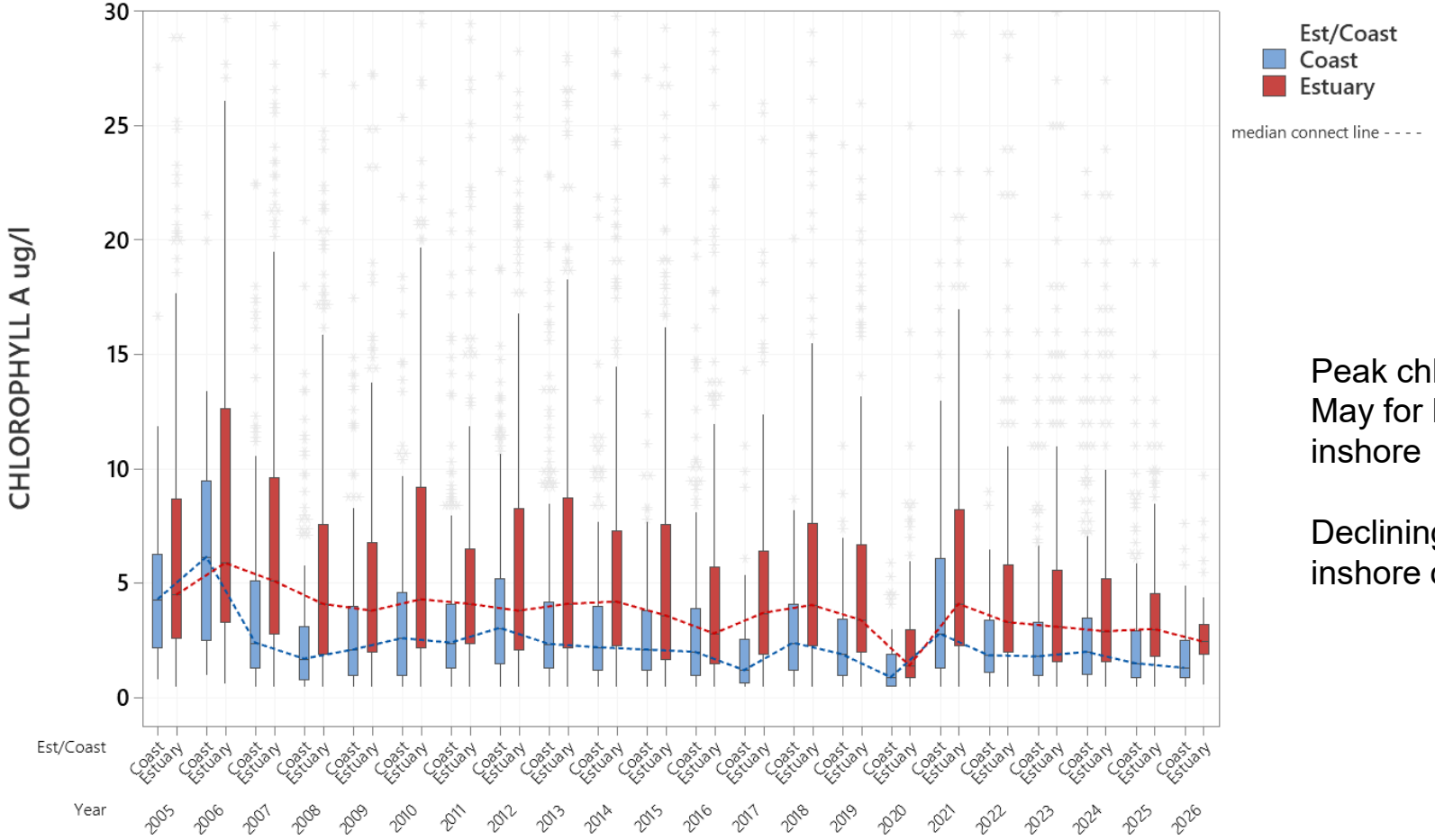
Results include rows where 'Regional Marine Ecosystem' = "EASTME".

https://environment.data.gov.uk/water-quality

Phytoplankton biomass



EASTME CHLOROPHYLL A ug/l 2005 to 2025



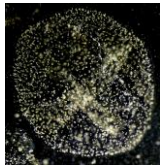
Peak chlorophyll in May for EastMe inshore

Declining trend in inshore chlorophyll

Results include rows where 'Regional Marine Ecosystem' = "EASTME".

Phyllopodopsyllus (copepod)*

Scolelepis (larva) (polychaete)*



Phaeocystis bloom (with *Pseudo-nitzschia*)

Nyctiphanes couchii (Euphausiid)*

*Pseudodiaptomus marinus**

*Pseudodiaptomus marinus**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Pseudodiaptomus marinus (copepod)*

*Tortanus discaudatus** - (copepod) most southerly UK record?

Hydrozoa medusae observed

Themisto (amphipod)*

**new records for Norfolk on NBN Atlas*

Interesting records for Norfolk plankton, 2025

2025 water quality

- Higher coastal salinity due to low freshwater inflow
- Low nitrate
- Long-term decline in phosphate and increasing N:P
- Spring bloom peak in May (*Phaeocystis*)
- Average chlorophyll biomass

North Sea Collision

10th March 2025

Sarah Craythorne
Head of Nature Reserves

See Sarah’s recording on EastMe website

- What happened?
- What was our involvement with the clean up operation?
- What was the learning from this experience?

The red circle indicates the collision site

VesselFinder

Taken day after the collision from shoreline of Donna Nook NNR

North Sea Collision – lessons learned

Near-miss with large-scale ecological impact avoided

Liaison with Local Resilience Forums is essential

Good comms - between departments within own org, as well as with other affected eNGO’s, LRF, councils, universities etc

Site staff are key – surveys, habitat knowledge, practical advice re vehicle access points to remote areas of beach/tides

Importance of quick access to sampling kit and survey vessels